CITY OF FOLSOM



South of Highway 50 Backbone Infrastructure Project

Initial Study

December 2014

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INITIAL STUDY

December 2014

A. BACKGROUND

1. Project Title: South of Highway 50 Backbone Infrastructure Project

2. Lead Agency Name and Address: City of Folsom
Community Development Department
50 Natoma Street
Folsom, CA 95630

3. Contact Person and Phone Number: Scott Johnson, Planning Manager
Community Development Department
(916) 355-7223

4. Project Location: Folsom Plan Area Specific Plan
Folsom, CA 95630
APNs: 072-0231-048, -049;
072-3190-001, -002, -003, -004, -005, -006, -007, -008, -009;
072-0060-073, -074, -075, -076, -077, -078, -079, -080, -081, -082, -083, -084, -085, -007;
072-0070-035, -006, -001, -033, -023; and
072-0270-147, -138, -028.

5. Project Sponsor's Name and Address: City of Folsom
50 Natoma Street
Folsom, CA 95630

6. Project Description Summary: The proposed project consists of the construction of the backbone infrastructure within the Folsom Plan Area, south of Highway 50 (US 50) in the City of Folsom, CA. The Folsom Plan Area is bounded by Prairie City Road on the west, US 50 on the north, White Rock Road on the south, and the Sacramento County/El Dorado County boundary on the east. The project site is located within the Folsom Plan Area Specific Plan boundaries with some infrastructure improvements and connections proposed north of and crossing US 50. The proposed project consists of two main components: 1) updates to the Storm Drainage Master Plan, Water Infrastructure Master Plan, and Sewer Master Plan prepared for the implementation of the Folsom Plan Area Specific Plan Project; and 2) South of US 50 Backbone Infrastructure Buildout.

B. SOURCES

The following documents are referenced information sources utilized by this analysis:

1. California Air Resources Board. *Air Quality and Land Use Handbook: A Community Health Perspective*. April 2005.
2. California Building Standards Commission. *California Building Standards Code (Title 24, California Code of Regulations)*. July 1, 2014.
3. California Department of Conservation, California Geological Survey. *Relative Likelihood for the Presence of Naturally Occurring Asbestos in Eastern Sacramento County, California*. 2006.
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6. California Environmental Protection Agency. *Cortese List: Section 65962.5(a).* 2014.
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17. County of Sacramento. *General Plan, Scenic Highways Element.* 1993.
18. ECORP Consulting, Inc. *Biological Resources, Prepared for the Folsom Specific Plan Backbone Infrastructure Project Area.* August 2014.
19. ECORP Consulting, Inc. *Cultural Resources Inventory Report for the Backbone Infrastructure Permit Area, Folsom South of U.S. Highway 50 Specific Plan Project,*

Sacramento County, California. Prepared for Folsom Owner's Group and U.S. Army Corp of Engineers, Sacramento District. 2012.

20. ECORP Consulting. *Programmatic Agreement between the U.S. Army Corps of Engineers and the California Office of Historic Preservation Regarding the Folsom Plan Area Specific Plan, Sacramento County, California.* 2011.
21. ECORP Consulting. *First Amended Programmatic Agreement between the U.S. Army Corps of Engineers and the California Office of Historic Preservation Regarding the Folsom Plan Area Specific Plan, Sacramento County, California.* 2013.
22. ENVIRON International Corporation and the California Air Districts. *California Emissions Estimator Model User's Guide Version 2013.2*. July 2013.
23. Federal Emergency Management Agency. *Flood Insurance Rate Map Numbers 06067C0119H, 0607C0140H, 06067C0275H, and 06067C0250H.* October 16, 2009.
24. Folsom Cordova Unified School District. *2013 Facilities Master Plan*. November 2013.
25. j.c. brennan & associates, Inc. *Environmental Noise Assessment, Russell Ranch*. October 29, 2014.
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27. Sacramento Metropolitan Air Quality Management District. *2009 Triennial Report and Plan Revision*. December 2009.
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31. Sacramento Metropolitan Air Quality Management District. *Guide to Air Quality Assessment in Sacramento County. December 2009* (latest revision in October 2014). Available at: http://www.airquality.org/ceqa/ceqaguideupdate.shtml. Accessed October 16, 2014.
32. Sacramento Metropolitan Air Quality Management District. *$PM_{2.5}$ Implementation/Maintenance Plan and Re-designation Request for Sacramento $PM_{2.5}$ Nonattainment Area*. October 24, 2013.
33. Sacramento Metropolitan Air Quality Management District. *SMAQMD Thresholds of Significance Table*. Available at: http://www.airquality.org/ceqa/cequguideupdate/Ch2TableThresholds.pdf. Accessed October 2014.
34. Southern California Coastal Water Research Project. *Hydromodification Assessment and Management in California.* April 2012.
35. Wallace Kuhl & Associates, Inc. *Preliminary Geotechnical Engineering Report, Folsom 138 Property.* August 2004.
36. Wallace Kuhl & Associates, Inc. *Preliminary Geotechnical Engineering Report, Folsom Heights.* August 2005.

37. Wallace Kuhl & Associates, Inc. *Preliminary Geotechnical Engineering Report, Gencorp South Folsom Sphere of Influence Property.* January 2008
38. Youngdahl Consulting Group, Inc. *Preliminary Geotechnical Engineering Study, Sacramento Country Day School.* August 2003.
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C. ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is "Less Than Significant with Mitigation Incorporated" as indicated by the checklist on the following pages.

✖ **Aesthetics**	☐ **Agriculture and Forest Resources**	✖ **Air Quality**
✖ **Biological Resources**	✖ **Cultural Resources**	✖ **Geology and Soils**
✖ **Greenhouse Gas Emissions**	✖ **Hazards and Hazardous Materials**	✖ **Hydrology and Water Quality**
☐ **Land Use and Planning**	☐ **Mineral Resources**	✖ **Noise**
☐ **Population and Housing**	☐ **Public Services**	☐ **Recreation**
✖ **Transportation and Circulation**	☐ **Utilities and Service Systems**	☐ **Mandatory Findings of Significance**

D. DETERMINATION

On the basis of this initial study:

☐ I find that the Proposed Project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

✖ I find that although the Proposed Project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the applicant. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the Proposed Project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature	Date
Scott Johnson, Planning Manager	City of Folsom
Printed Name	For

E. BACKGROUND AND INTRODUCTION

The Initial Study identifies and analyzes the potential environmental impacts related to the construction of the South of Highway 50 Backbone Infrastructure Project (proposed project). The information and analysis presented in this document is organized in accordance with the order of the California Environmental Quality Act (CEQA) checklist in Appendix G of the CEQA Guidelines. If the analysis provided in this document identifies potentially significant environmental effects of the project, mitigation measures that should be applied to the project are prescribed.

The City of Folsom and the land owners within the Folsom Plan Area Specific Plan area (FPASP area) are taking necessary steps to implement the development of the FPASP area based upon the approval of the FPASP. As required by the California Environmental Quality Act (CEQA) and the National Environmental Protection Act (NEPA), a joint Environmental Impact Report/Environmental Impact Study (EIR/EIS) was certified by the City Council on June 14, 2011 by Resolution 8860 for the FPASP (State Clearinghouse Number 2008092051). In the joint FPASP Final EIR/EIS, much of the infrastructure projects needed to provide services to the project were reviewed at a programmatic level with some impact areas including additional detailed analysis where applicable.

As the proposed project was included in the FPASP, and evaluated in the FPASP Final EIR/EIS, this IS/MND will tier from the program-level environmental review of FPASP Final EIR/EIS in conformance with Section 15152 of the State CEQA Guidelines. As a result, this IS/MND relies upon the FPASP and the program-level analysis provided in the associated FPASP Final EIR/EIS to the greatest extent feasible in order to determine the potential for impacts in each of the specific impact areas. Pursuant to CEQA Guidelines Section 15150(a), the FPASP and FPASP Final EIR/EIS are incorporated by reference. Both documents are available at the City of Folsom, 50 Natoma Street, Folsom, CA 95630.

As required by LAFCo Resolution No. LAFC 1196, a Water Master Plan (WMP), Sewer Master Plan (SMP), and Storm Drainage Master Plan (SDMP) have been prepared. The WMP includes details of the off-site transmission main, storage tanks, booster stations, distribution mains and laterals. The SMP includes details of gravity sewer mains, pump stations, force mains, localized collector lines and individual laterals. The SDMP includes details of the balanced centralized and low impact development stormwater management system. All three Master Plans were approved by the City of Folsom on July 12, 2011 (Resolution No. 8870). However, the above Master Plans require updating to reflect the minor changes described in the project description section below.

Any mitigation measures prescribed for environmental effects described in this Initial Study will be implemented in conjunction with the project, as required by CEQA. The mitigation measures will be incorporated into the project through project conditions of approval. Analysis and mitigations apply to all project components unless otherwise noted. The City will adopt findings and a Mitigation Monitoring and Reporting Program (MMRP) for the project in conjunction with approval of the project. The City of Folsom and the FPASP area land owners, applicants, etc. agree to be bound by all mitigation measure prescribed herein this Initial Study related to infrastructure buildout.

F. PROJECT DESCRIPTION

The following section describes the location and existing environmental conditions at the project site, as well as the surrounding area, and the proposed project components.

Location and Setting

The proposed project is located within the FPASP boundaries of the City of Folsom, California (see Figure 1). The project site is in the southern section of the City of Folsom, south of US 50, with some infrastructure improvements and connections crossing and north of US 50. The project site is generally bounded by Prairie City Road on the west, US 50 on the north, White Rock Road on the south, and the Sacramento County/El Dorado County boundary on the east. Refer to Figure 2, Project Vicinity Map, for the location of the proposed project site.

North of US 50

The proposed project includes three improvements north of US 50. A booster pump will be installed at the Folsom Water Treatment Plant (WTP) located on East Natoma Street and Randall Drive for the initial project demand (two million gallons per day [MGD]). A second booster pump station will eventually be installed at the existing WTP for the ultimate project demand (8.8 MGD). In addition, a water transmission pipeline will eventually be installed from East Bidwell Street to the WTP. The transmission pipeline would extend north along East Bidwell Street, north along Oak Avenue Parkway, and eventually west to the WTP. The proposed water transmission pipeline would be located within existing roadway rights-of-way or in areas that have been previously disturbed by construction. In general, the area proposed for development north of US 50 is developed for commercial and residential uses.

South of US 50

The approximately 3,513.4-acre FPASP area, which contains the majority of the proposed project site, is currently vacant. The project site is generally undeveloped, with the exception of the following: one single-family residence and associated agricultural outbuildings located on the western side of the FPASP area; four active communication towers, associated support facilities, and dirt access roads located in the northeastern portion of the FPASP area; Scott Road; and Placerville Road and the adjacent railroad tracks. The City of Folsom currently provides utility services to the entire city limits. The FPASP is a comprehensive community plan that includes the associated storm drainage, water, sewer, and other infrastructure needed to support the planned development. The proposed project site south of US 50 has relatively poor agricultural soils and has mainly been used for cattle grazing. Alder Creek and associated seasonal tributaries are present, mainly in the western two-thirds of the project site.

Figure 1
Regional Project Location

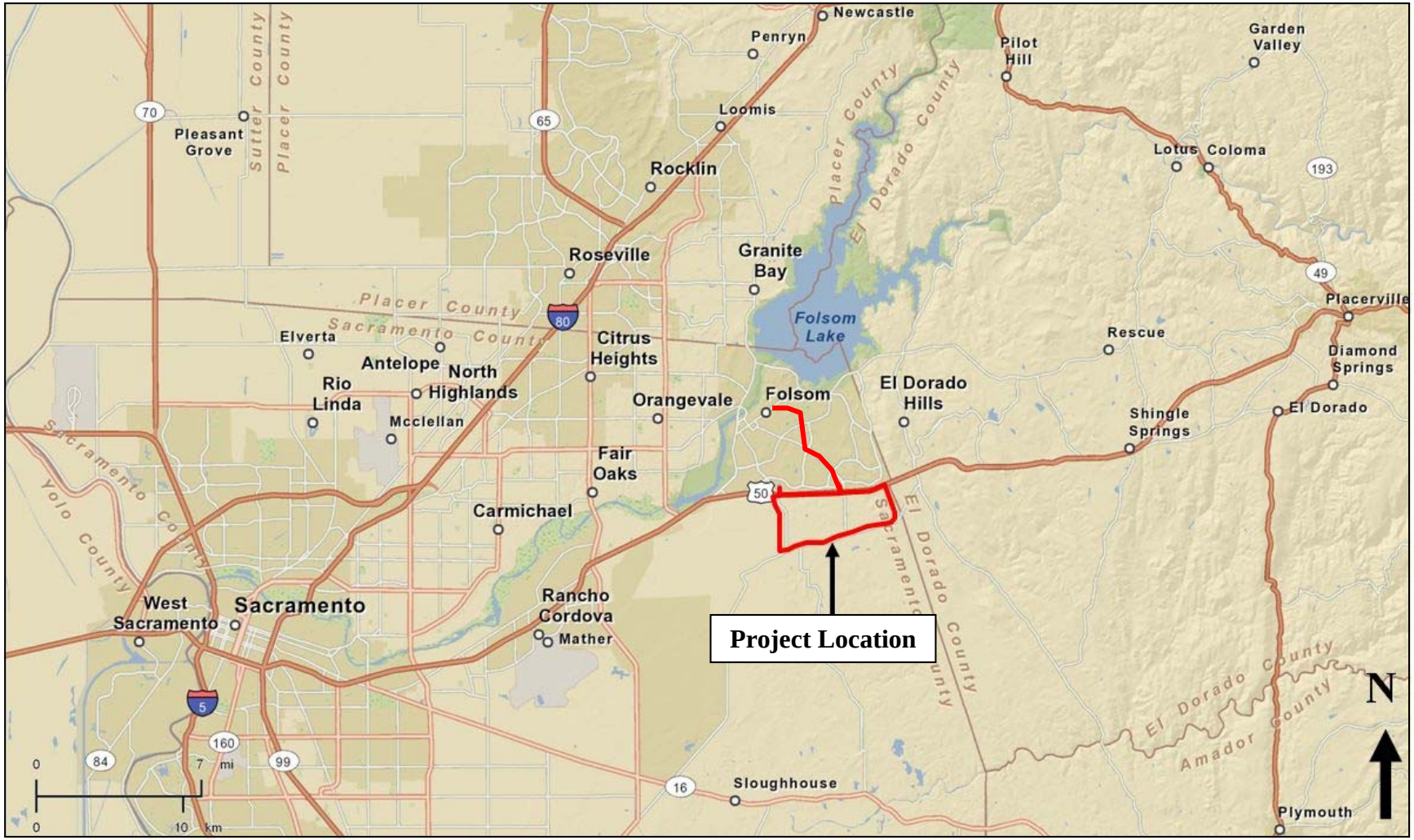
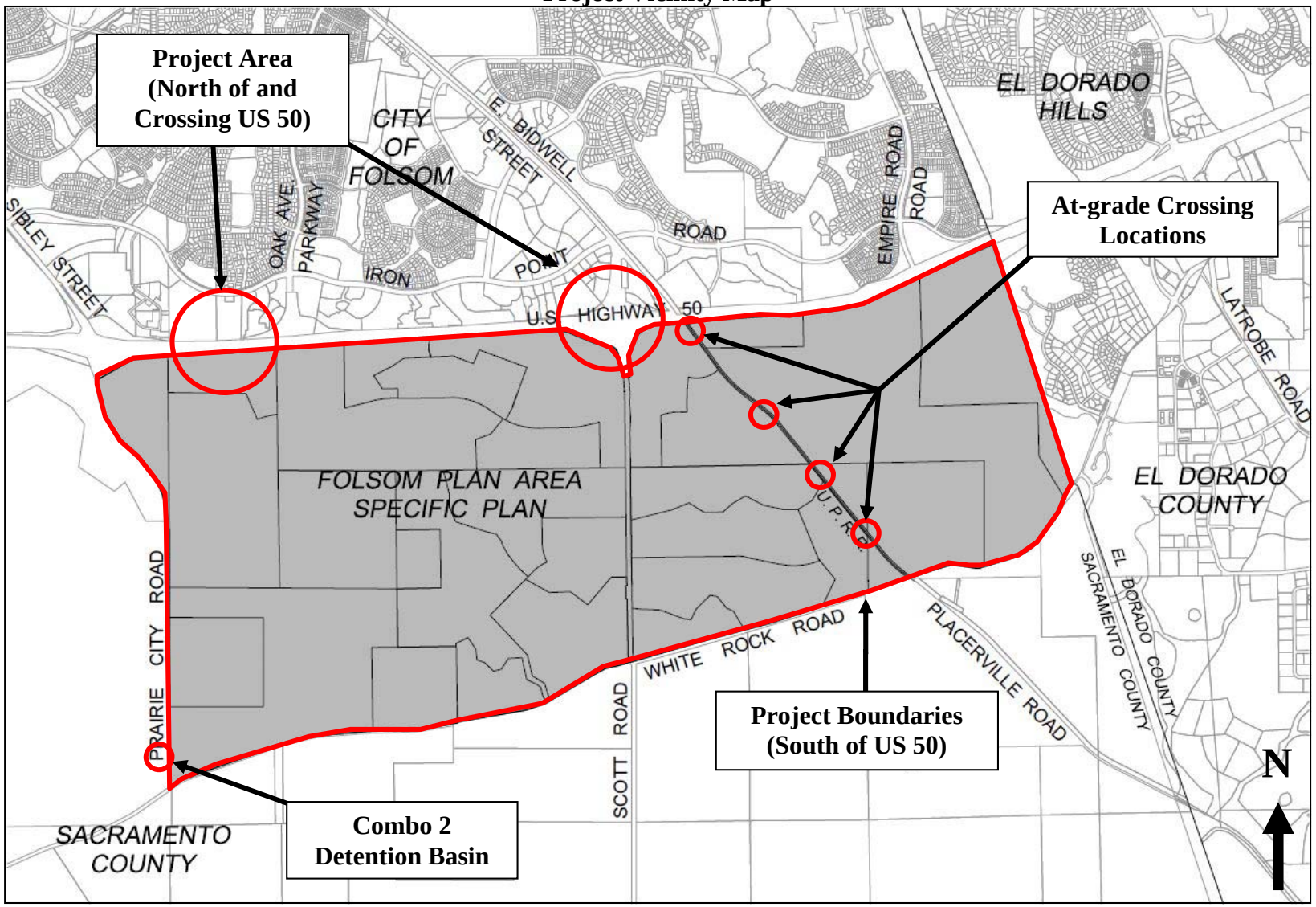


Figure 2
Project Vicinity Map



The proposed project site south of US 50 is located at the eastern edge of the Sacramento Valley and consists of three distinct topographic regions:

1. Hillside Region. The hillside region includes the entire proposed project site east of Placerville Road. The region is dominated by hilly terrain with elevations ranging from 440 to 800 feet above sea level. The hillside slopes range from five percent to 30 percent with a majority of the slopes averaging 15 percent.
2. Valley Floor Region. The valley floor region includes the proposed project site west of Placerville Road not including the Alder Creek region (described below). The valley floor region is dominated by gently rolling hills covered with grasslands and some areas of oak woodlands. Elevations in this region range from 220 to 440 feet above sea level. The majority of the slopes within this region range from zero percent to 15 percent.
3. Alder Creek Region. Alder Creek and the associated seasonal tributaries are present within the project site. The creek corridor includes some isolated steep slopes along the edges of the creek and the associated tributaries and seasonal drainages. In addition, the Alder Creek Region contains extensive native oak woodlands.

US 50 Crossings

The proposed project includes two improvements north of and crossing US 50. As shown in Figure 2, the improvements are proposed to cross US 50 near East Bidwell Street and Prairie City Road. The areas proposed for development north of and crossing US 50 contain existing roadways and existing development. The area proposed for development of the water line crossing near East Bidwell Street and US 50 contains industrial and commercial development north of US 50. The area proposed for development of the sewer line crossing US 50 approximately 0.5 miles east of Prairie City Road contains commercial development north of US 50 and open space south of US 50.

Project Components

The proposed project consists of two main components; including 1) updates to the SDMP, WMP, and SMP prepared for the implementation of the FPASP Project; and 2) South of US 50 Backbone Infrastructure buildout. Figure 3 shows the overall system for which project-level environmental review is sought.

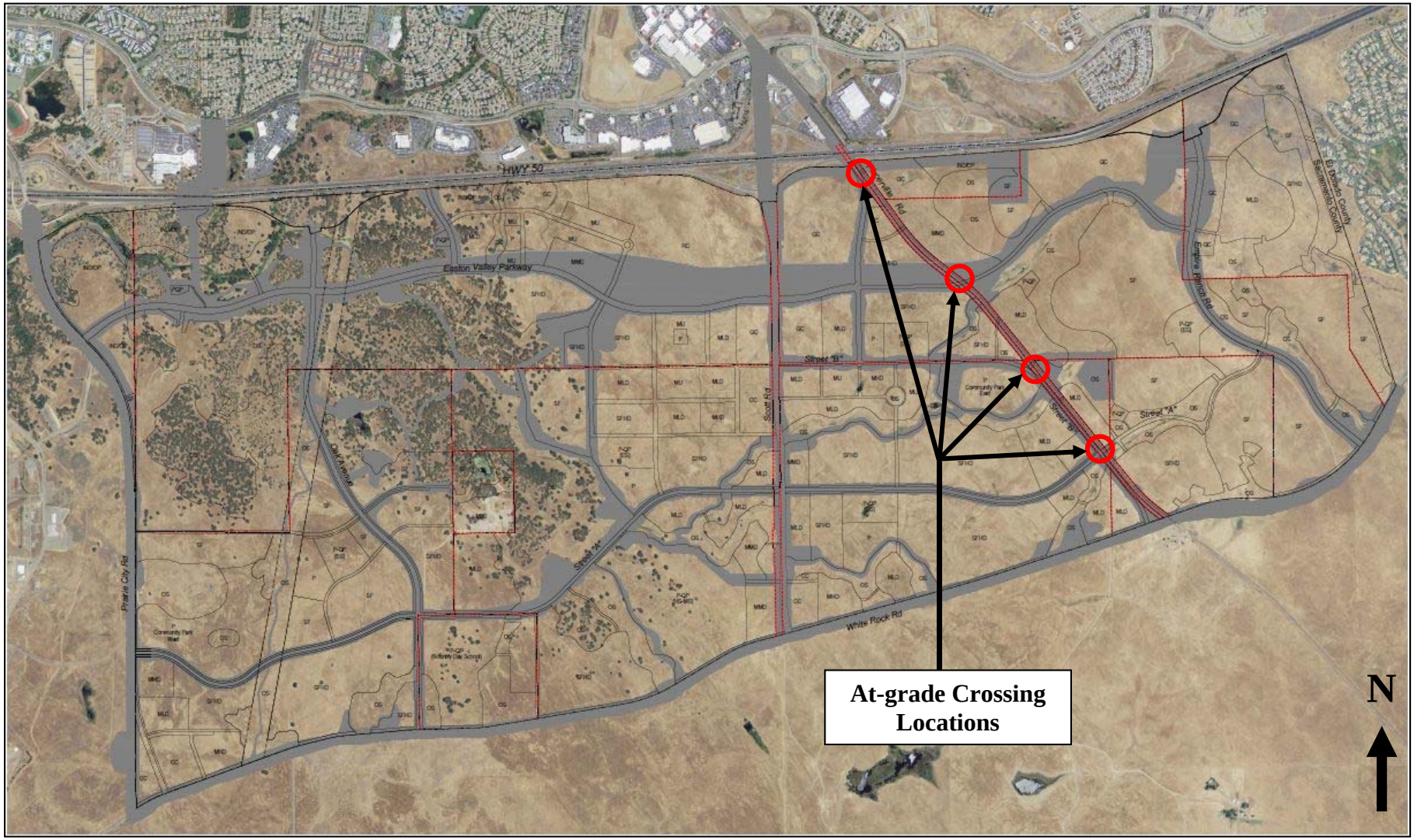
Infrastructure Master Plan Updates

The City of Folsom and the FPASP land ownership group are proposing to modify the existing infrastructure master plans as follows:

Storm Drainage Master Plan

The purpose of the SDMP is to analyze, identify, and document the project site's existing hydrologic characteristics, identify any existing drainage infrastructure deficiencies, and determine the required on-site and off-site drainage facilities needed to accommodate FPASP buildout.

Figure 3
Backbone Infrastructure Exhibit



A SDMP was prepared for the 3,600-acre proposed project area south of US 50 in 2007 and included in the approval of the FPASP. The analysis identified drainage improvements needed to protect property from 100- and 200-year flood events, to detain storm water flows from various storm events equal to or lesser than the pre-development flows, and to provide adequate water quality treatment prior to entering any natural stream course.

An updated SDMP has been prepared dated July 11, 2014. The principal changes, which are incorporated into the analysis, are to address impacts to the natural waterways due to the effects of hydro-modification. The SDMP identifies facilities to detain flows to closely match pre-development flows through a range of storm events to control the erosive effects of increased runoff while maintaining detention of high volume storms to the pre-development levels. A series of excavated earthen basins are proposed which augment the flood control basins contained in the original 2007 Storm Drainage Master Plan.

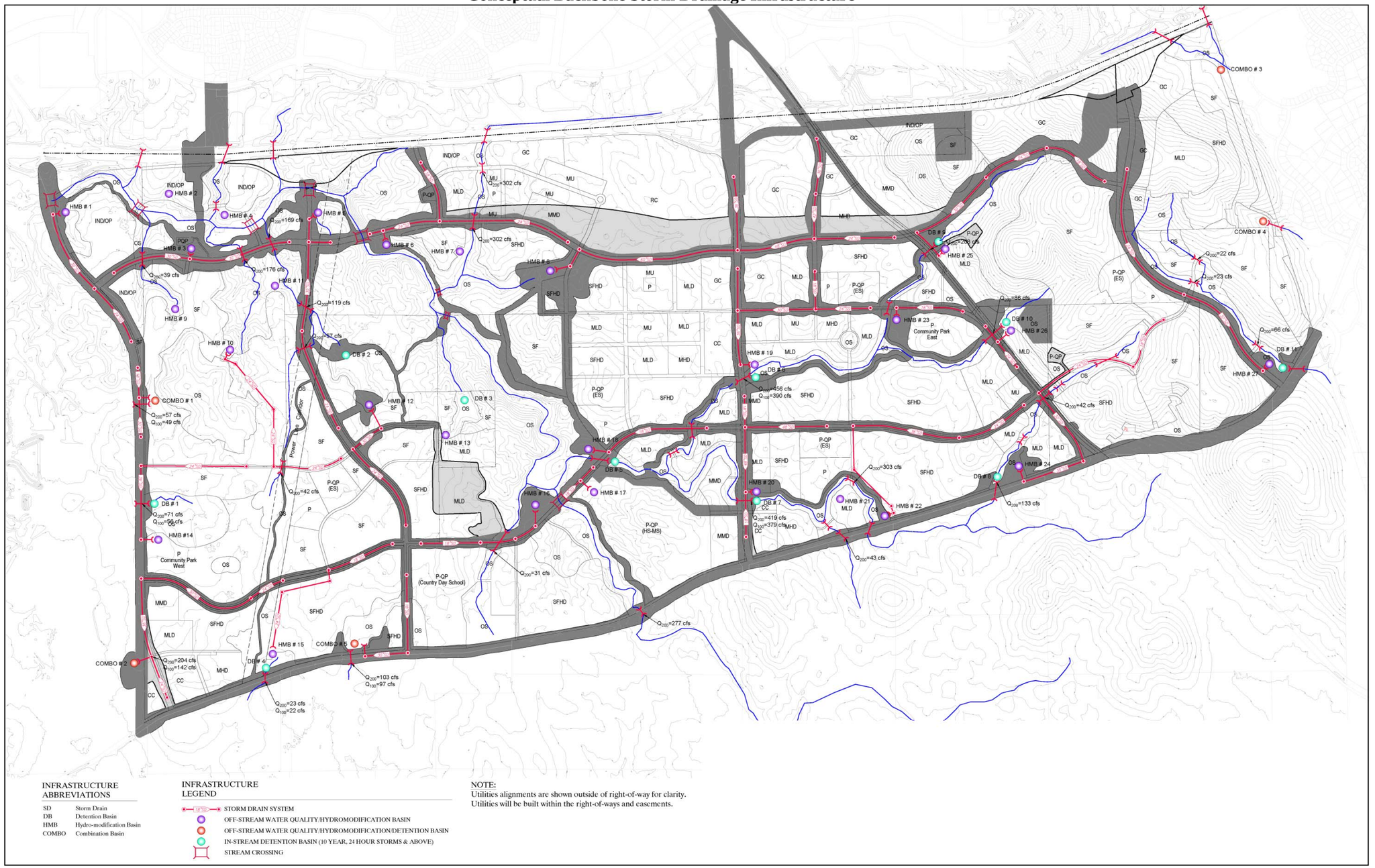
The storm water and water quality features throughout the FPASP area are an integrated management system. The detention facilities will be located at the edge of the drainage corridor where they will intercept run-off from the adjacent development areas before the water enters the main corridor. The basins will provide water quality treatment for urban run-off before such water enters the open space areas. Urban run-off water will first flow through the basin where water quality treatment will occur.

Figure 4 shows the specific details regarding the type and location of the proposed detention basins outlined in the Storm Drainage Master Plan. All improvements associated with buildout of the SDMP would be located south of US 50.

The storm drainage system includes underground pipe conveyances and all of the surface components of the system, including inlets, filters, maintenance access, and outfall structures. The overall drainage system will convey and treat storm runoff from the project site. One proposed hydromodification basin (HMB 19) is located in the middle of the site (see Figure 4 below), and adjacent to detention basin six (DB 6). It should be noted that an off-site detention basin (Combo 2) is proposed just west of Prairie City Road, as shown in Figures 3 and 4.

Off-stream detention basins will be strategically located throughout the project site which will capture the upstream developed watershed storm runoff and provide water quality treatment and mitigate for the hydromodification of the receiving watercourse. Off-stream detention basins will meter the storm outflow out of the basin and into the receiving water, closely matching that watercourse's pre-development runoff flow rates and durations. The project site may also include some in-stream measures for mitigating hydromodification impacts to the receiving watercourse. The in-stream measures to mitigate for hydromodification will typically consist of stream embankment stabilization and flow metering at roadway culvert crossings. Major roadway culverts have been sized to convey the 200-year/24-hour event without overtopping the roadways or flooding the adjacent developable areas within the FPASP area.

Figure 4
Conceptual Backbone Storm Drainage Infrastructure



The off-stream detention basins proposed to be installed within the project site are designed with three separate types of storm water storage components. The separate storm water storage components are stacked on top of each other within the detention basin. The first type of storm water storage is Water Quality Treatment, the second is strictly hydromodification storage, and the third component is storm water storage. The third storage component has the maximum water surface elevation set by the 100-year/24-hour storm or the 100- year/10-day storm, whichever is greater.

All roadway crossings of the main branch of Alder Creek will be bridges that span the ordinary high water mark of the creek. When a roadway crosses over a tributary to the creek, a culvert will be installed and the culverts will be sized to meter the runoff through them, thus impounding some of the runoff upstream of the culvert for a very short time duration and creating an in-stream detention basin. The in-stream detention basin's will be sized based the maximum water surface elevation set by the 100-year/24-hour and the 200-year/24-hour storm events. Each detention basin will have a specifically designed outlet control structure that will attenuate the storm water runoff sufficiently to comply with the hydromodification criteria of the receiving watercourse. Hydromodification is generally defined as changes in channel form associated with changes in flow and sediment due to past or proposed land use alterations. The detention basin outlet control structure detains the storm runoff generated up to a 10-year/24-hour event and slowly releases the runoff through a series of varying orifice sizes set at varying elevations.

In order to attenuate the developed conditions peak flow rates at equal to or less than existing conditions peak flow rates, a series of 16 detention basins are planned throughout the project site. The characteristics of the eleven basins are summarized in Table 1, Proposed Detention Basin Statistics. Eleven of the detention basins will be standalone in-line basins. Additionally, five will be combination, detention and hydromodification basins, either in-line and/or off-line.

According to the SDMP, the detention basins range in surface area and volume from 0.34 to 10.91 acres and 1.76 to 90.07 acre-feet, respectively. All detention basins will operate independently of each other. Basins located along Alder Creek will discharge to the creek after partially mitigating peak flow, and fully mitigating hydromodification and water quality impacts, from their respective watersheds. In some cases water quality basins will be separate and apart from the adjacent hydromodification and detention basins. The remainder of the peak flow attenuation for the basins along Alder Creek will occur in Alder Creek itself, which has significant naturally occurring in-stream and over-bank storage capacity.

The basins that drain to the three other creeks in the area (Buffalo, Coyote, and Carson Creeks) will, likewise, operate independently of each other. The basins will fully mitigate for the peak flow, hydromodification, and water quality impacts from their respective watersheds prior to discharge to the local surface water drainage courses. In some cases, water quality basins will be separate and apart from the adjacent hydromodification and detention basins. The prototypical basin shown in Figure 5 is highly representative of the design of each of the other basins envisioned to be constructed within the project site.

Table 1
Proposed Detention Basin Statistics

Basin Number	Basin Bottom Elevation	Top of Hydro-mod. Riser Elev.	Spillway Elevation	Top of Berm Elevation	Basin Surface Area (acres)	Basin Volume (acre-feet)
Combo 1	306	309.6	309.6	316	1.12	6.69
Combo 2	302	309.2	309.2	314	2.09	15.74
Combo 3	600	604.5	604.5	610	2.66	17.22
Combo 4	608	614.9	614.9	620	0.69	2.58
Combo 5	347	351.6	351.6	357	1.93	11.73
DB1	310	N/A	315	318	2.57	9.49
DB2	312	N/A	315	320	3.95	17.79
DB3	336	N/A	341	344	3.32	15.93
DB4	333	N/A	342	343	2.43	12.96
DB5	334	N/A	N/A	356	10.91	90.07
DB6	376	385.1	385.1	391	3.06	24.36
DB7	360	370.9	370.9	378	6.52	41.65
DB8	432	N/A	N/A	448	1.84	11.52
DB9	480	489.1	489.1	500	1.79	16.76
DB10	490	N/A	497	500	0.34	1.76
DB11	530	541.8	541.8	546	2.73	19.96
					Total:	**316.21**

Source: Storm Drainage Master Plan, Mackay & Somps Civil Engineers, Inc. July 11, 2014.

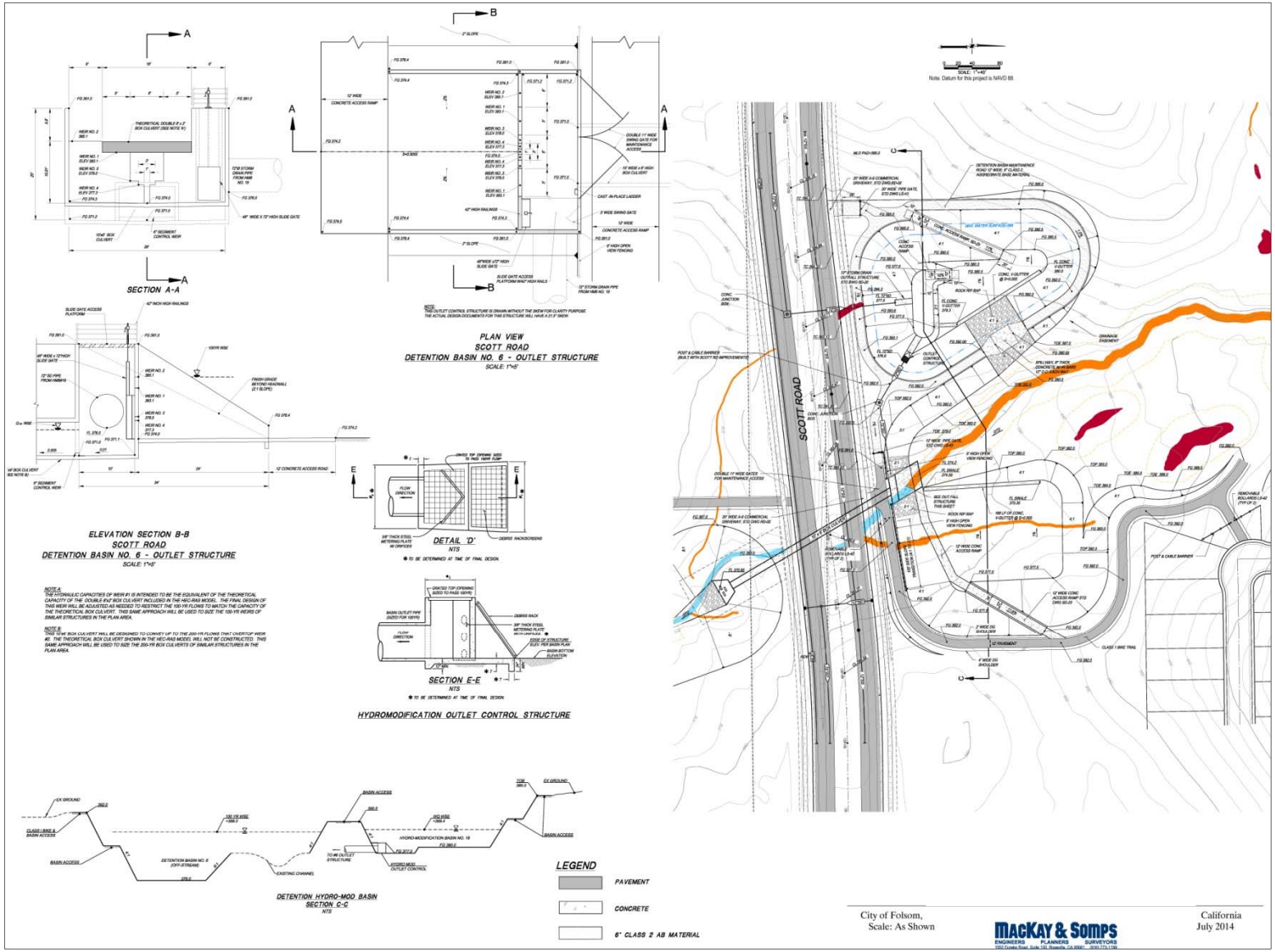
Future development projects will be required to provide details and timing of the flood control, storm drainage detentions basins, and storm drain pipeline systems that are needed for buildout of each project to show consistency with the SDMP during the Tentative Map approval process.

Water Infrastructure Master Plan

In 2004, the City of Folsom's residents voted in favor of Measure W, an amendment to the City Charter regarding local control of the FPASP area. Among others, Measure W required that the City identify and secure the source of water supply to serve the FPASP area. In addition, the new water supply shall not cause a reduction in the water supplies designated to serve the existing water users north of US 50, and the new water supply shall not be paid for by residents north of US 50.

In December 2007, the Natomas Central Mutual Water Company (NCMWC) shareholders approved the sale of 8,000 acre-feet per year of water to serve the FPASP. The water supply would have been diverted from the Sacramento River at the Freeport Regional Water Project and conveyed the water to the FPASP area through new potable water infrastructure. The FPASP Final EIR/EIS analyzed the impacts resulting from the water infrastructure required to supply water from the NCMWC to the FPASP area at the program-level.

Figure 5
Illustrative Detention Basin



Since the passing of the Water Conservation Act of 2009, which requires local water suppliers to increase water supply reliability, the City has undertaken various water management measures, including implementing metered water rates and carrying out the Water Systems Optimization Review (SOR) Program, consisting of conservation, repairs, improvements and replacements of existing water transmission and distribution facilities. Prior to the initiation of the SOR Program, the City identified "unaccounted water" of 25 to 30 percent within its water distribution system. The City's actions through the SOR Program have made available new water supplies that cannot be used by the City's existing water users north of US 50. The City has determined that the SOR Program and implementation of metered rates would recover an estimated amount of 6,450 acre-feet per year (AF), which is surplus to the present and forecasted demands of the City's existing water users.

According to the water supply addendum to the FPASP Final EIR/EIS, dated December 7, 2012, the FPASP's projected water demand would be 5,600 AF; therefore, the City has generated, and would generate, the new water supply for the FPASP area through water management activities that already have been implemented. As a result, the FPASP area would not require connection to the NCMWC in order to serve the FPASP area, as what was originally proposed in the FPASP; and therefore, providing the FPASP area water supply through the SOR Program would be consistent with the requirements of Measure W.

A WMP was prepared in 2007 based on a supply source different than the source identified through the SOR Program. Subsequently, an updated WMP dated October 7, 2014 has been prepared to address the necessary changes in infrastructure to serve the project. The principal changes that have occurred between the two Plans are:

1. New pressure zone elevations.
2. New transmission pipelines to deliver the initial phase of water from the existing City system.
3. Zone 3 east booster pump station at the Folsom WTP on East Natoma Street.
4. Relocation of water storage tanks for pressure Zones 3, 4, and 5.
5. Pressure booster pumps serving Zones 4 and 5 located on the south side of US 50 at Placerville Road and a pressure pump to serve Zone 6 located on the southwest quadrant of future Empire Ranch Road interchange.
6. Addition of a storage tank for recycled water near US 50 and Placerville Road.
7. Additional service improvements to serve the ultimate FPASP demand (8.8 MGD), including a new booster pump station and 30-inch transmission pipeline from the Folsom WTP.

The WMP includes five pressure zones in the FPASP area. Due to the grade variation in all zones, service pressure reducing valves will be required on all service connections throughout the FPASP area. Zone 2 is located in the western most area of the FPASP area, and serves connections at elevations ranging from 280 ft to 385 ft. Zone 3 serves connections at elevations ranging from 350 ft to 450 ft. Zone 4 serves connections at elevations ranging from 425 ft to 550 ft. Zone 5 serves connections at elevations ranging

from 525 ft to 650 ft. Zone 6 serves connections at elevations ranging from 605 ft to 770 ft. See Figure 6 for the location of each zone.

Recycled Water

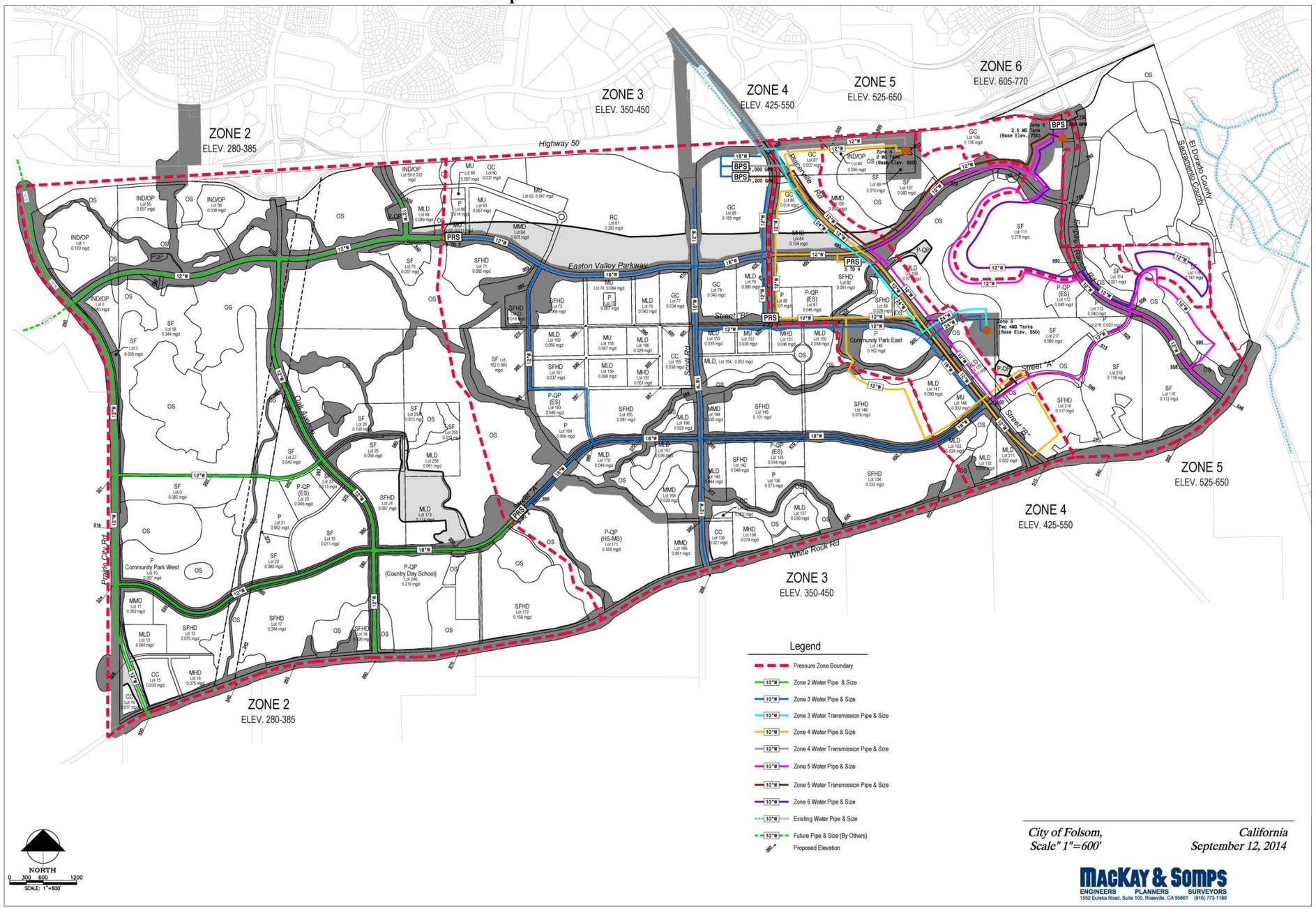
The WMP assumes 100 percent of the FPASP demands are met with a potable source. In the event recycled water develops as a supply source to offset potable demands in the FPASP, the required potable storage volume would decrease. The potential annual recycled water demand of 1,200 acre-feet is assumed to reduce the overall and peak water use due to offsetting otherwise potable peak irrigation demands with recycled water supply. The total potable water demand is shown two ways: (1) assuming no use of recycled water to offset potable demands and (2) assuming FPASP area recycled water demands reduce the total potable demand in the ultimate system.

Storage is needed in the water system to provide peaking or operational flows, emergency storage, and fire flow supply. All water supply for each pressure zone within the FPASP area is delivered to the storage tank for each pressure zone. From the storage tank, all supply is then conveyed to the distribution system. The aforementioned approach is to ensure proper turn-over of water in the storage tanks to reduce water usage in the FPASP area.

The FPASP water system is designed for the normal water supply to enter the FPASP area from the City's existing Zone 3, at Scott Road near US 50. One approach to phasing construction of the Zone 3 potable storage facilities is to construct the potable storage tanks in conjunction with the recycled water tank. In this approach Tank 1 would be a three MG potable tank. Tank 2 would be a recycled water tank that would initially be used as a potable facility until it is needed for the recycled water system or the Tank 2 three MG tank could be used as an interim recycled water tank until the potable demand and development requires additional potable storage. At which point Tank 3, the second potable storage tank, would be constructed. The aforementioned approach would allow the City to delay or possibly avoid construction of the five MG potable storage tank.

The above improvements would be located throughout the FPASP area as well as north of and crossing US 50. Figure 6 and Figure 7 show the WMP infrastructure for potable and non-potable water, respectively. Figure 8 shows planned WMP infrastructure south of and crossing US 50. Figure 8 shows the planned WMP infrastructure north of US 50. Figure 9 shows the planned WMP infrastructure crossing and just north of US 50.

Figure 6
Conceptual Backbone Potable Water Infrastructure



North of US 50 Water Improvements

Water will initially be supplied from the City's existing WTP to the FPASP area through the City's existing water system, Zone 3 East, and entering the FPASP area at a location just south of US 50 near Placerville Road. The initial supply phase to the FPASP area is assumed to be two MGD.

Upon ultimate buildout, improvements will be required within the City's existing water system to deliver water through the existing system to the FPASP area to meet the ultimate demand (8.8 MGD). As illustrated in Figure 8, the improvements required for the ultimate supply phase include two new booster pump stations at the Folsom WTP and 18,000 linear feet of new dedicated 30-inch transmission main pipeline. The new booster pump stations at the WTP and transmission main from the booster pump station to the distribution system will supply maximum demand to the FPASP area. The exact locations of the booster pump stations and the transmission main pipeline are unknown at this time. Because the aforementioned improvements would be completed only when FPASP development warrants additional water demand, any potential impacts related to the additional booster pump station and transmission main pipeline will be evaluated in this document at the program-level. Any mitigation measures that are only applicable to the components north of US 50 will be specifically noted.

US 50 Crossings

As shown in Figure 9, the transmission pipelines would extend from the intersection of East Bidwell Street and Iron Point Road in one of two alignments, or a combination of both. One alignment would extend southeasterly along Placerville Road, under the existing US 50 bridge structure. The second prospective alignment would extend southerly along East Bidwell Street, over US 50 using the existing overpass structure. The proposed pipelines would be placed in the existing roads right-of-way. In addition, the crossing of US 50 may be achieved by jack-and-bore. The two Zone 3 water storage tanks would be mainly buried underground with approximately four feet exposed. The water storage tanks for Zones 4 and 5 would be made of steel and be approximately 108 and 120 feet in diameter, respectively. The maximum height of the water storage tanks would be approximately 35 feet.

Figure 9 shows the proposed location of the booster pump serving Zones 4 and 5, the proposed alignment alternative for the water pipelines, and the proposed water connection point north of US 50. As shown in Figure 9, the proposed 18-inch and 24-inch water pipelines would be extended from an existing connection in a highly developed area. Future development projects would be required to provide details and timing of the water facilities that are needed for buildout of each project to show consistency with the WMP during the Tentative Map approval process.

Figure 7
Conceptual Backbone Non-Potable Water Infrastructure

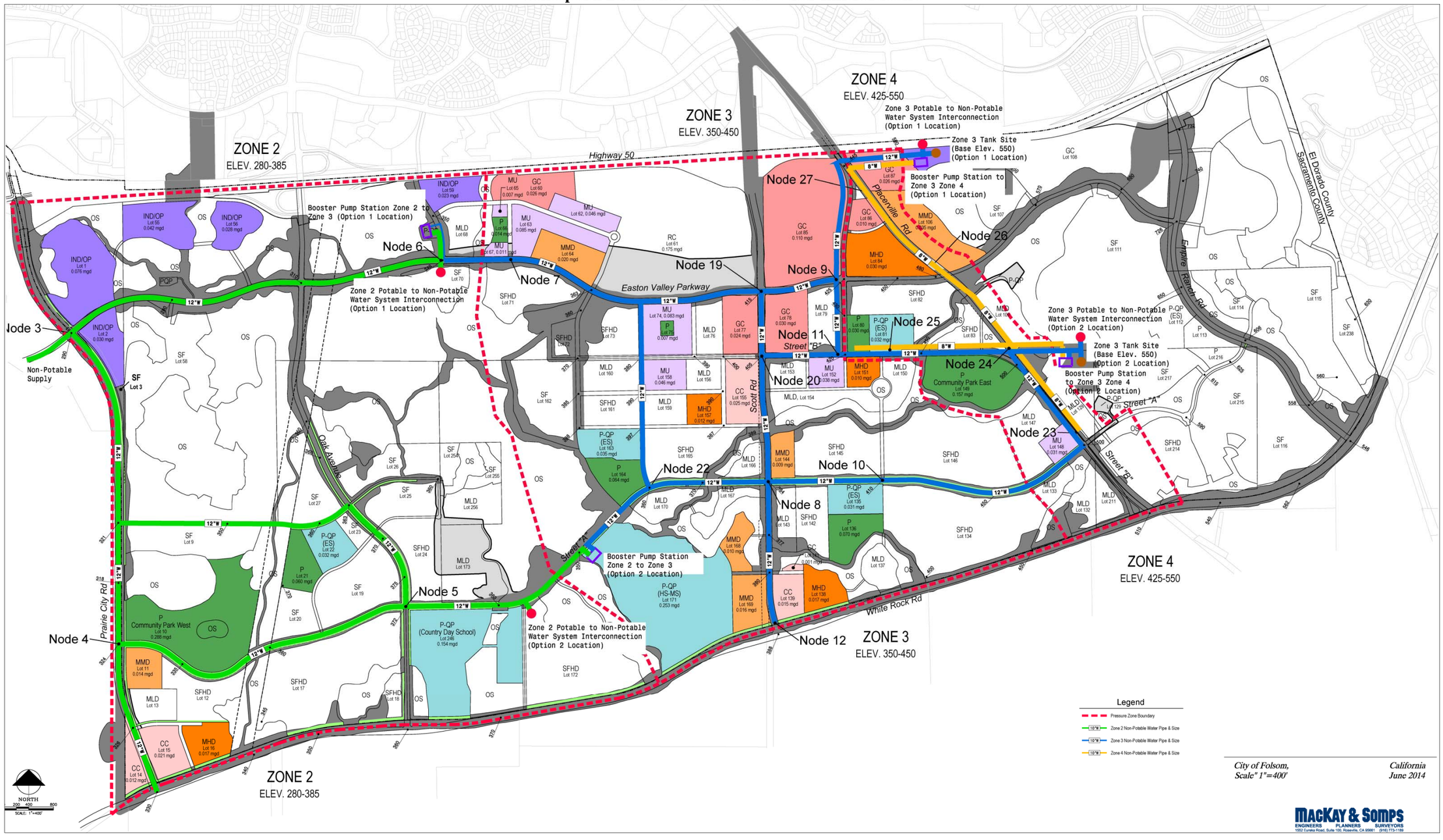


Figure 8
Conceptual Backbone Water Infrastructure North of US 50

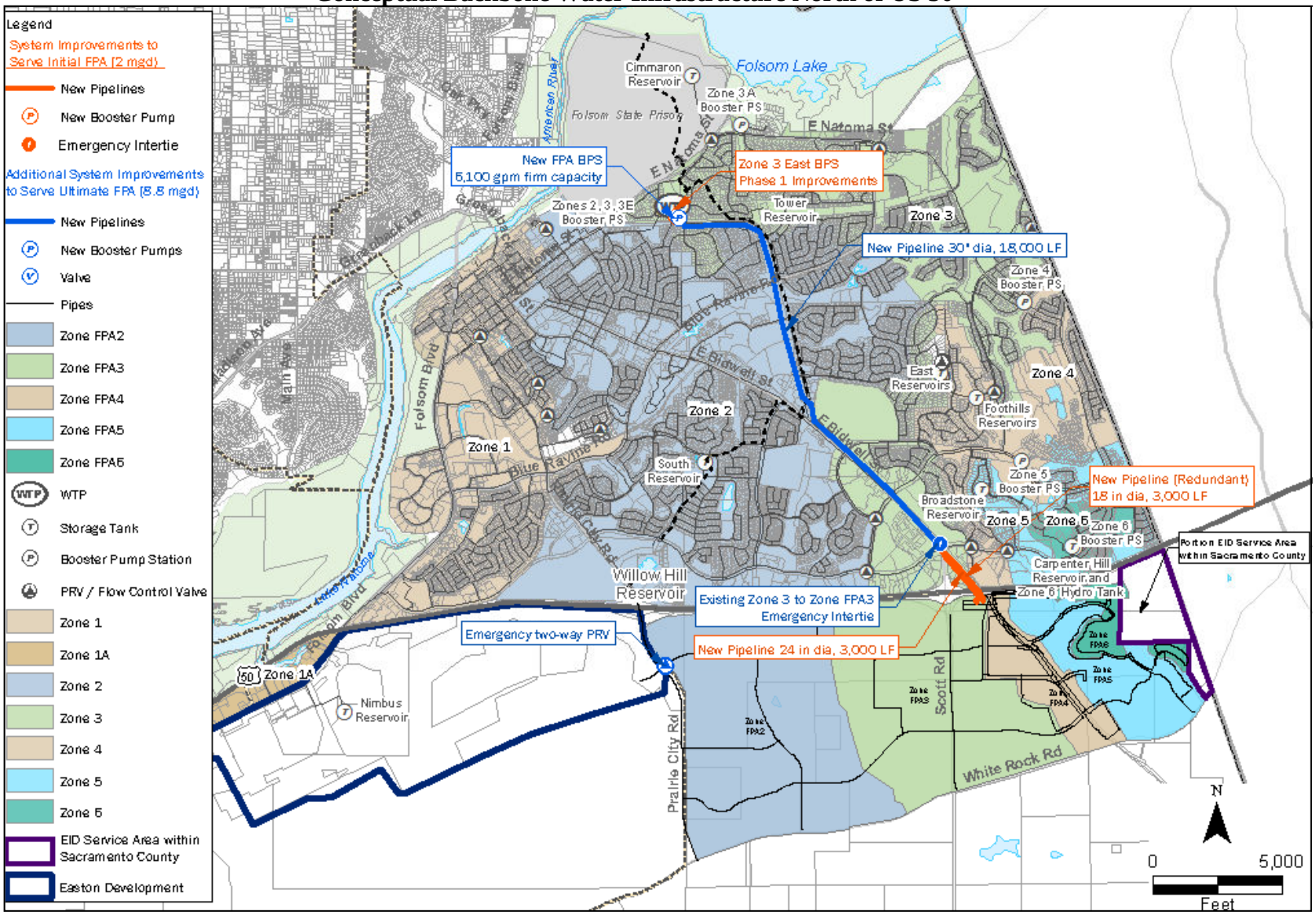
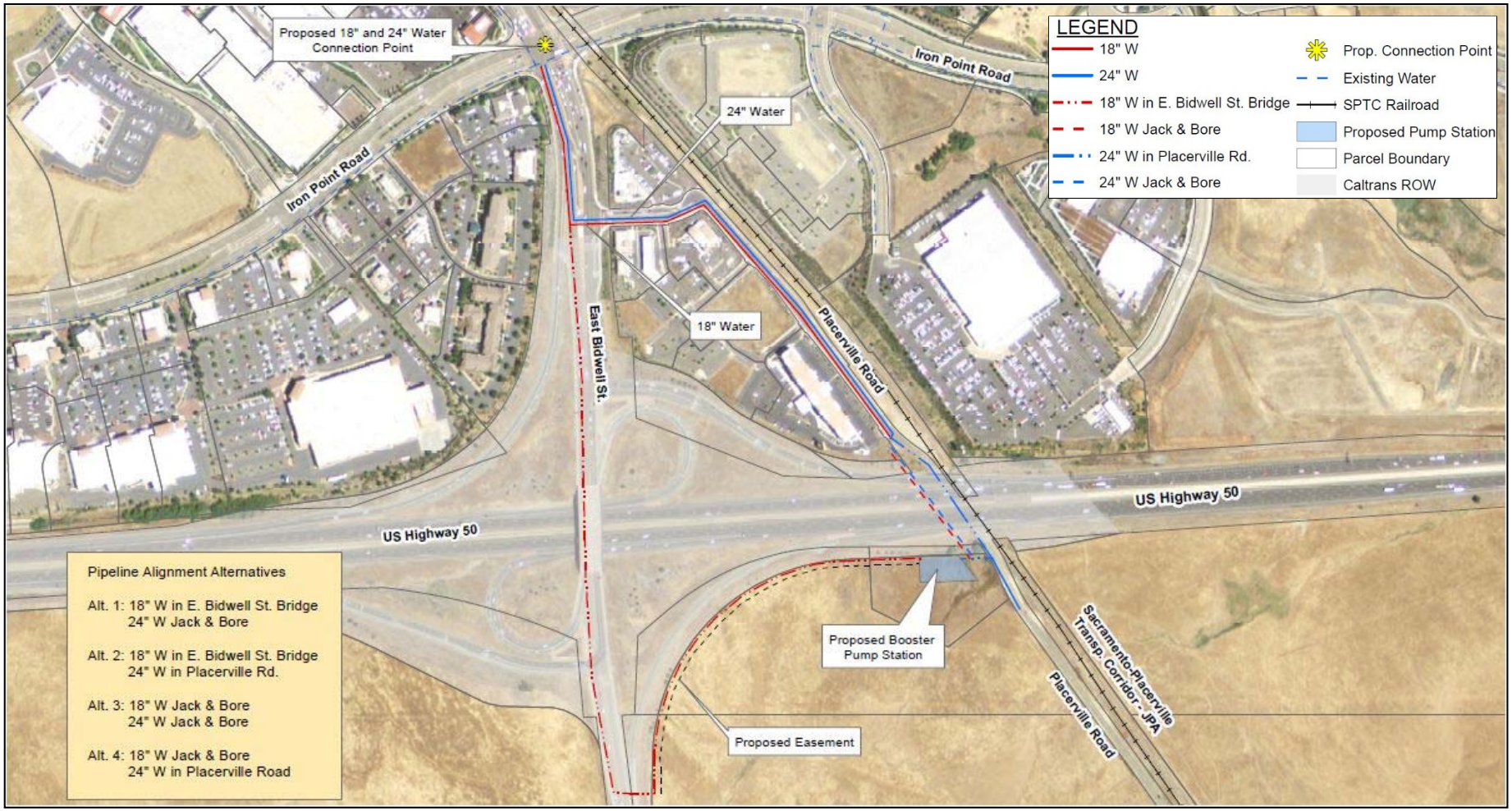


Figure 9
Proposed Water Crossing Pipeline Alignments and Booster Pump Station



South of US 50 Backbone

As shown in Figure 8, the WMP improvements south of US 50 would include the construction of potable storage tanks, 12-, 16-, and 18- inch pipelines, addition of water storage tanks, and installation of pressure booster pumps. Three water storage tanks are proposed to be relocated and one additional recycled water storage tank is proposed near US 50 and Placerville Road.

One approach to phasing construction of the Zone 3 potable storage facilities is to construct the potable storage tanks in conjunction with the recycled water tank. In this approach, Tank 1 would be a three million gallon (MG) potable tank. Tank 2 would be a recycled water tank that would initially be used as a potable facility until it is needed for the recycled water system or the Tank 2 three MG tank could be used as an interim recycled water tank until the potable demand and development requires additional potable storage. At which point Tank 3, the second potable storage tank, would be constructed. The above approach would allow the City to delay or possibly avoid construction of the five MG potable storage tank.

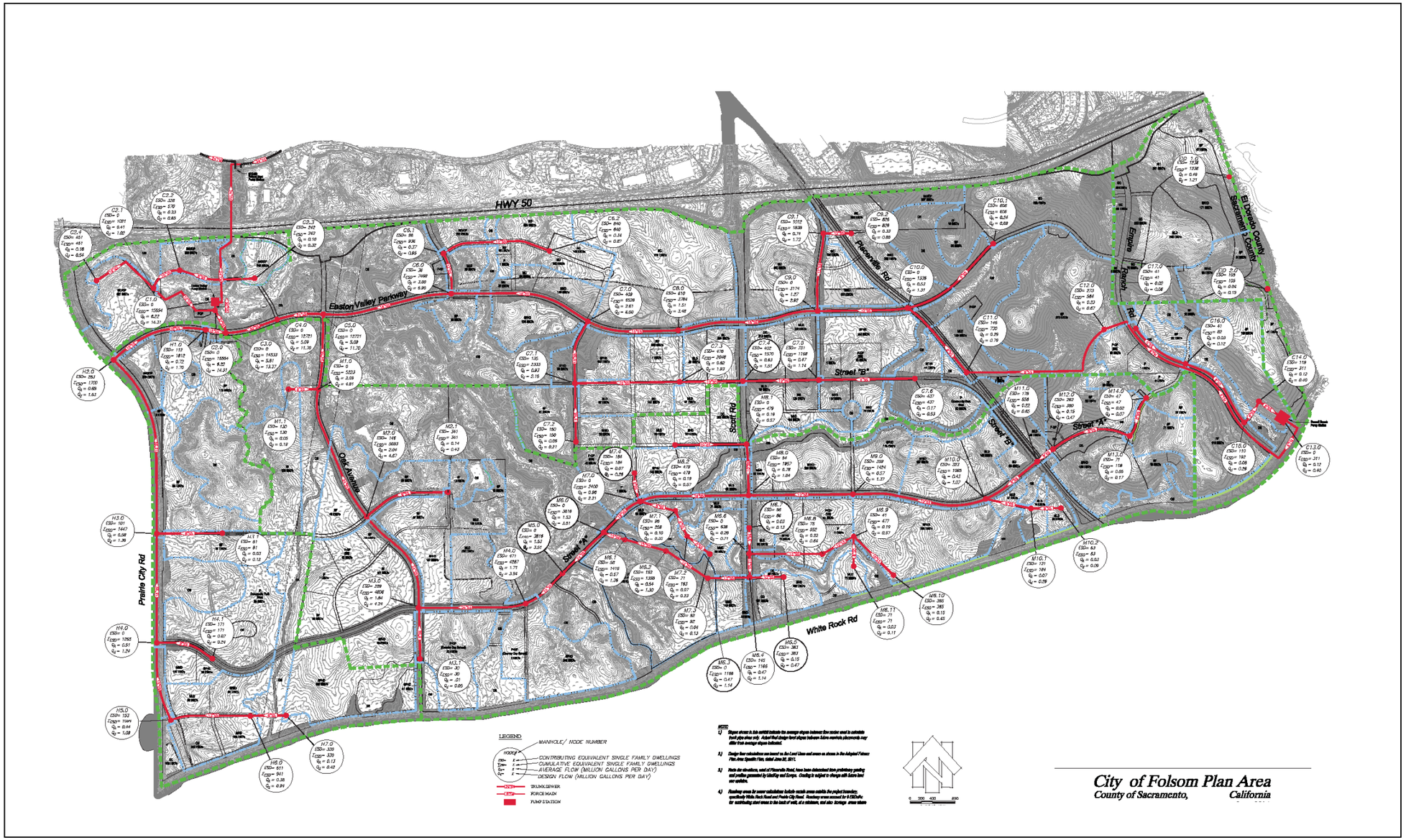
Sewer Master Plan

The City of Folsom's sewer collection system consists of over 267 miles of sanitary sewer pipe and nine pump stations. The City does not own or operate the facilities that treat its wastewater. Instead, through an agreement with the Sacramento Regional County Sanitation District (SRCSD), the City's wastewater is conveyed through the SRCSD's regional sewer pipelines for treatment at SRCSD's Sacramento Regional Wastewater Treatment Plant in Elk Grove.

A SMP was prepared in 2007. To provide more flexible phasing, an updated Master Plan has been prepared dated September 2014. The overall system remains essentially the same with the following changes:

1. A trunk sewer main has been relocated to Street A and Oak Avenue and removed from the Open Space along the east edge of the Alder Creek corridor.
2. To allow more flexible phasing, a new main has been added to Scott Road extending between Easton Valley Parkway and Street B.
3. A sewer lift station has been relocated north of the intersection of Empire Ranch Road and White Rock Road.
4. Various sewer watersheds have been adjusted, which modifies certain sewer pipeline sizes.

Figure 10
Conceptual Backbone Sewer Infrastructure



Development phasing would result in periods of time where the flow through the wastewater infrastructure pipelines is minimal. In addition, the topography of the FPASP area results in a wide range of pipe slopes, including relatively flat pipes in several areas. As such, increased flushing and/or odor control may be necessary during FPASP development. Odor control facilities would be constructed and high-velocity hydraulic cleaning and vacuum cleaning of select sewer lines would be provided, as necessary. Figure 10 shows an overview of the planned SMP infrastructure, both south of and crossing US 50. Figure 11 shows the size of the various pipelines in relation to the land uses in the FPASP. Figure 12 shows an overview of the proposed sewer crossing pipeline alignments. Figure 13 shows the proposed sewer pipeline alignments north of US 50.

US 50 Crossings

Figure 12 shows an overview of the proposed sewer improvements crossing US 50 and north of US 50. An eight-inch, 12-inch, and 24-inch sewer pipeline would extend from the future Easton Valley Parkway north beneath US 50. Once the sewer pipelines reach US 50, the pipelines will continue north to Iron Point Road As shown in Figure 13, the sewer pipeline would extend north from US 50 to Iron Point Road where the SRCSD lift station is located.

South of US 50 Backbone

The SMP improvements south of US 50 include the installation of eight-, 10-, 12-, 15-, and 24-inch pipelines throughout the FPASP area. The pipelines would be located in future roadway rights-of-way.

Future development projects would be required to provide details and timing of sewer facilities that are needed for buildout of each project to show consistency with the SMP during the Tentative Map approval process.

South of US 50 Backbone Infrastructure Buildout

The proposed backbone infrastructure buildout includes four parts: 1) construction of regional connectors, major arterials, and some minor arterials; 2) buildout of the updated SDMP; 3) buildout of the updated WMP; and 4) buildout of the updated SMP. Construction of all infrastructure projects would follow standard procedures to ensure that the flow of traffic on local streets is not impeded. Figure 3 above shows the overall development footprint for which project-level environmental review is sought.

Figure 11
Conceptual Backbone Sewer Infrastructure with Land Uses

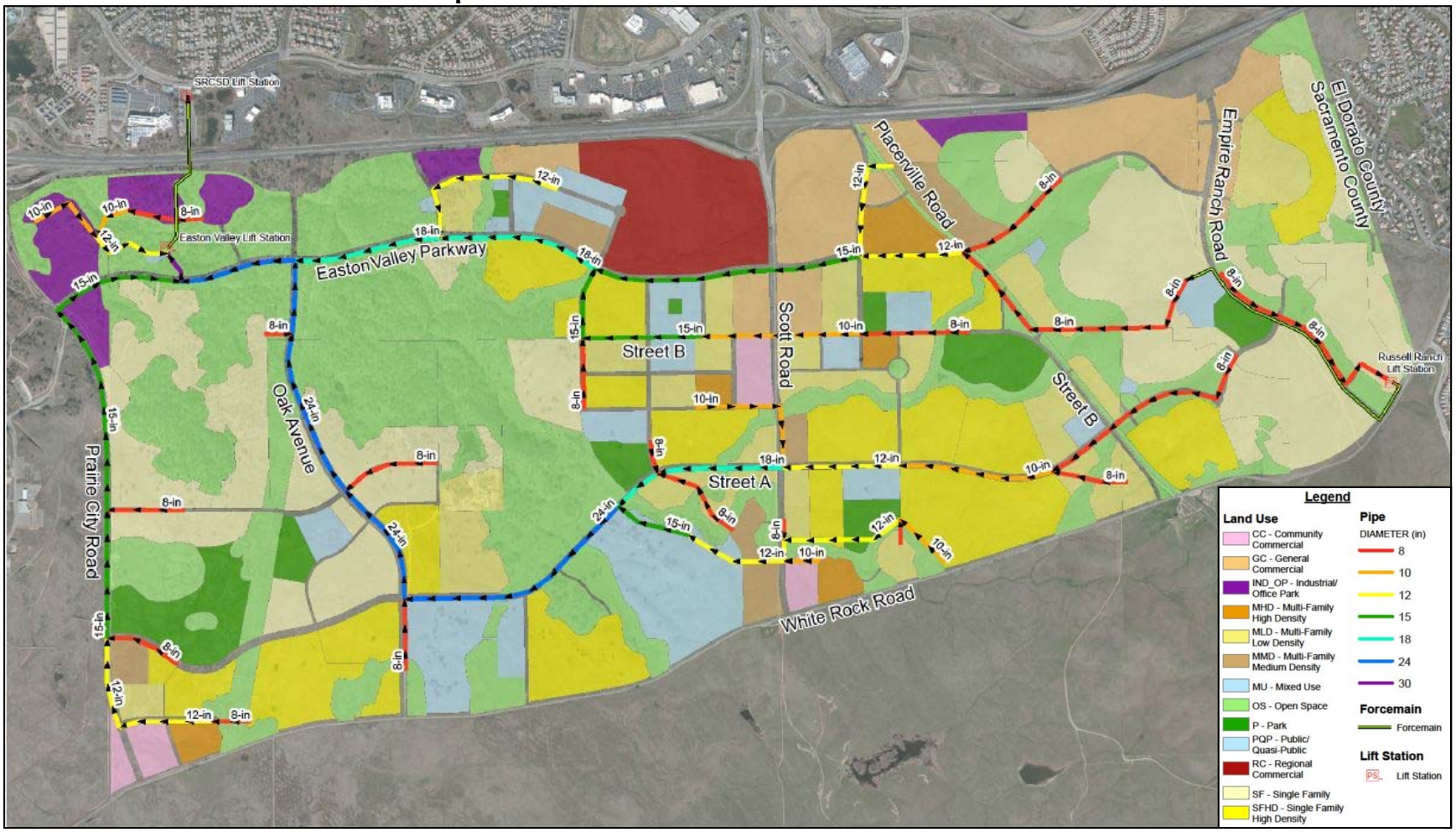


Figure 12
Proposed Sewer Crossing Pipeline Alignments Overview

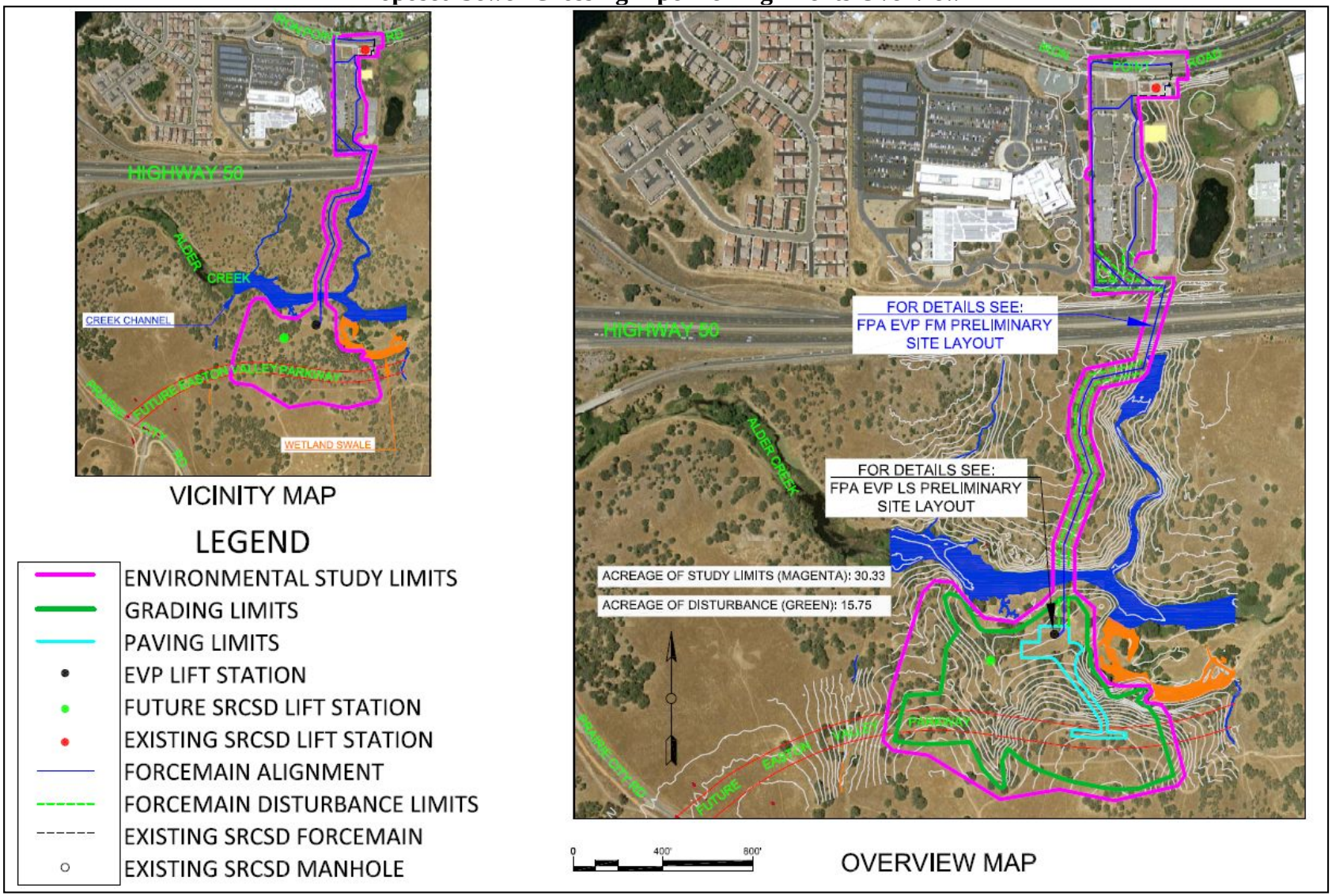
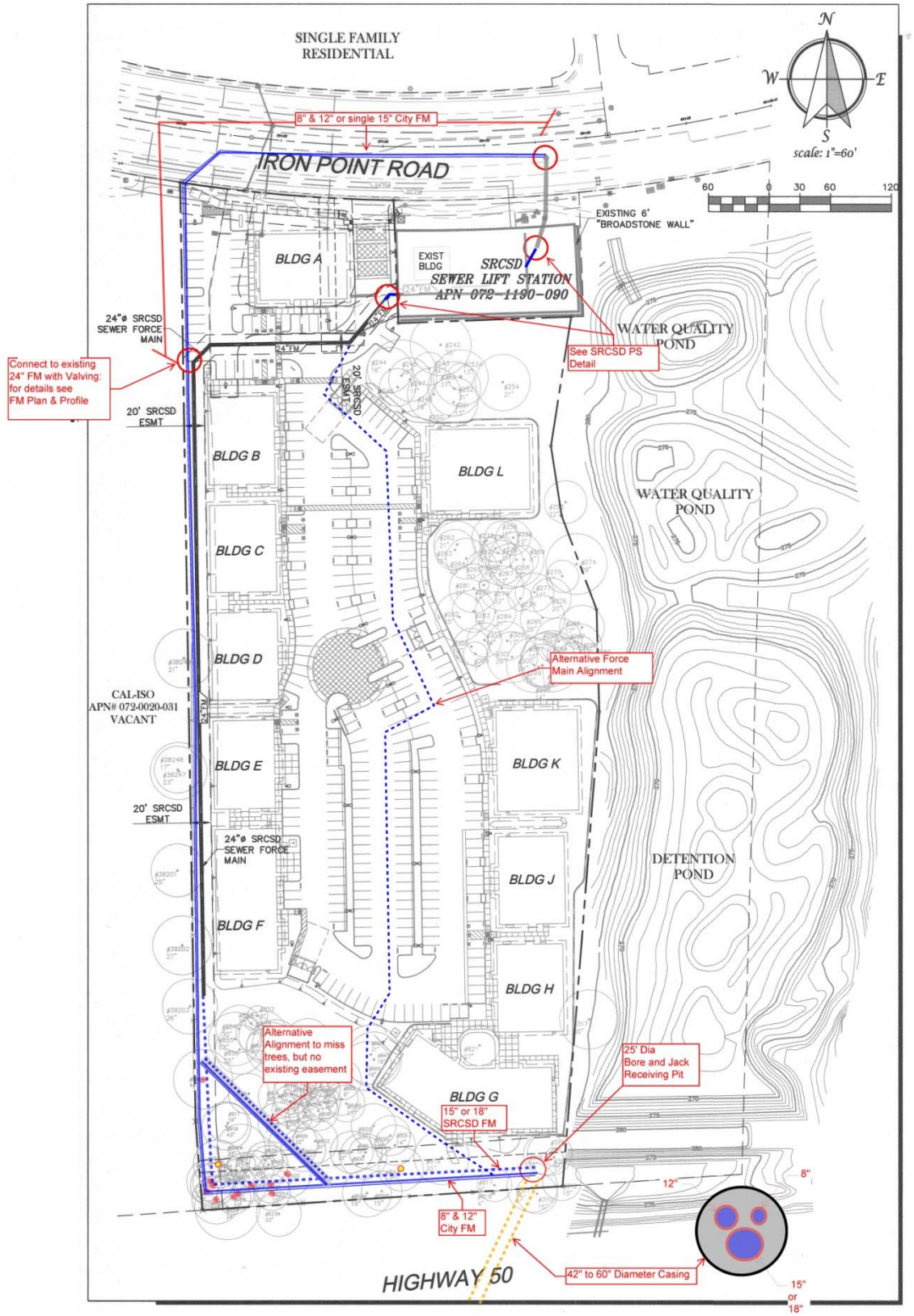


Figure 13
Proposed Sacramento Regional County Sanitation District Connection Pipeline Alignments



Roadway Construction

The street system would be constructed throughout the FPASP area. As outlined in grey in Figure 3 above, the street system would include the regional connectors, major arterials, and some of the minor arterials outlined in Exhibit 2-9 of the FPASP. The street system would include pavement, curbs, gutters, street lighting, sidewalks, landscaping, and striping. All proposed roadways would be rough graded with a maximum width of 158 feet. In total, approximately 10 miles of roadway would be constructed. In addition, the project area includes a rail line, known as the Sacramento-Placerville Transportation Corridor (SPTC). The SPTC has not been in commercial service since the late 1980's; however, the line is currently used for weekend excursion trains and other special events, with train operations ranging from five to 13 excursions per day on Saturdays and Sundays. Therefore, at-grade crossings are proposed on Placerville Road at the following four locations: Easton Valley Parkway, Street "A", Street "C", and New Placerville Road (see Figure 3).

Master Plan Updates

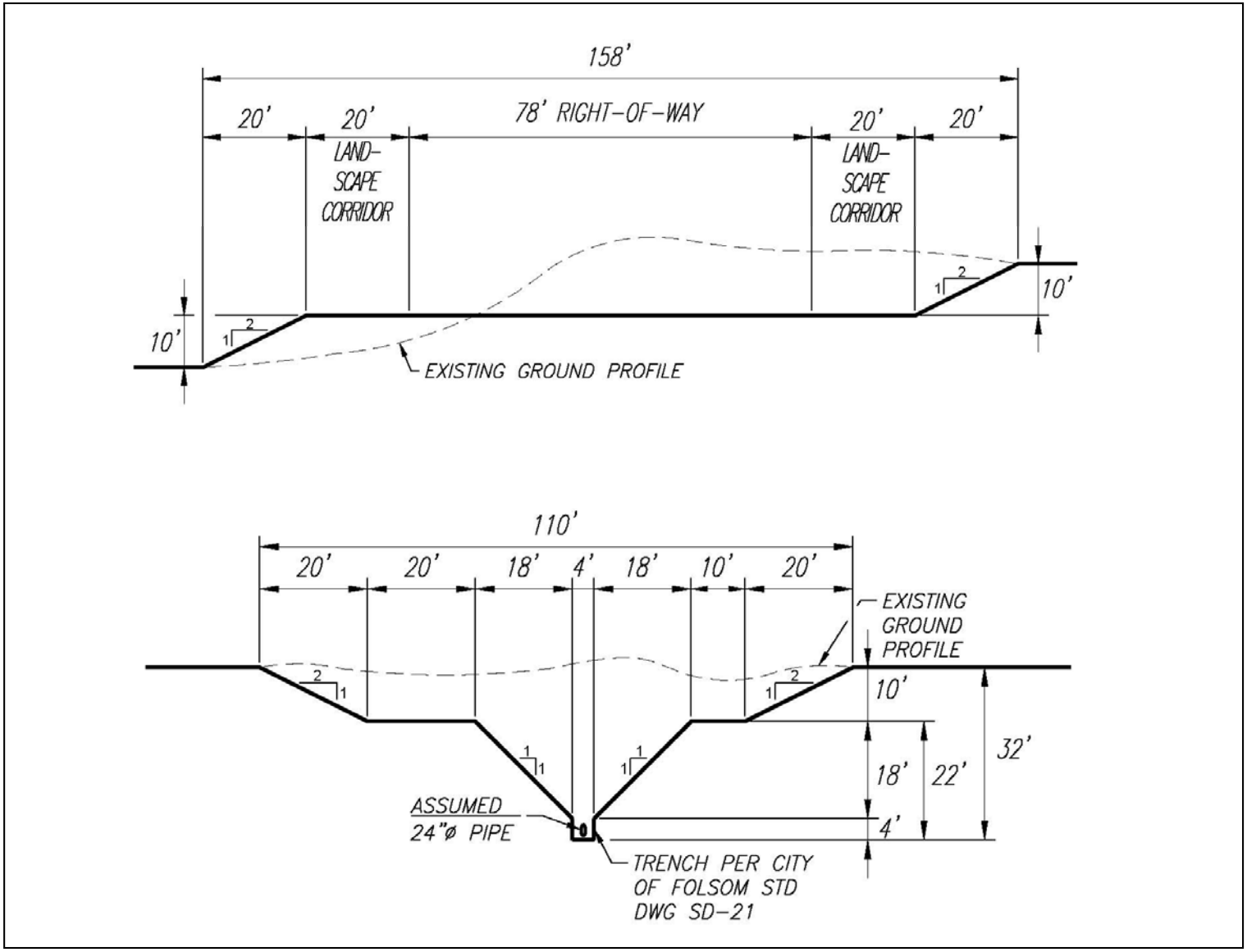
Construction of the infrastructure identified in the aforementioned Master Plans would ultimately result in the installation of infrastructure improvements within areas that are not currently served by the City to serve future anticipated development. A backbone infrastructure phasing plan would be developed for future construction of the necessary infrastructure improvements, including water crossing pipeline as well as tank and pump locations.

Future pipeline alignment locations and other infrastructure improvement projects included in the Utility Master Plans were designed to be within existing or proposed City right-of-ways, where feasible, as identified in the FPASP Circulation Diagram. Trenching for utilities improvements would be a maximum of 32 feet deep and 40 feet wide. In total, 57,300 linear feet of trenching will be required for utility improvements. The majority of the trenching (52,500 linear feet) will occur below the existing and proposed roadways while the remaining trenching (4,800 linear feet) will be required for various water and sewer improvements. It should be noted that an estimated 18,000 linear feet of trenching would be required for the north of US 50 water transmission pipeline required for the ultimate demand. However, the alignment location and length have not been finalized. Construction of the improvements outlined in the updated Master Plans would include the following:

- Site Preparation: mass grading, trenching, and excavation.
- Utility Systems:
    - Sewer – pipelines, manholes, sewer mains, and lift stations.
    - Water – pipelines, manholes, inlets, booster pumps and pump stations, storage tank for recycled water, basins and outfalls, fire hydrants, and appurtenances.
    - Storm Drainage – flood control measures, excavated earthen basins and detentions basins, and pipelines.

Figure 14 shows the trenching and grading proposed for the roadway and utility improvements.

Figure 14
Proposed Roadway and Utility Corridor Grading



G. ENVIRONMENTAL CHECKLIST

The following Checklist contains the environmental checklist form presented in Appendix G of the CEQA Guidelines. The checklist form is used to describe the impacts of the proposed project. A discussion follows each environmental issue identified in the checklist. Included in each discussion are project-specific mitigation measures recommended, as appropriate, as part of the proposed project.

For this checklist, the following designations are used:

Potentially Significant Impact: An impact that could be significant, and for which no mitigation has been identified. If any potentially significant impacts are identified, an EIR must be prepared.

Less Than Significant with Mitigation Incorporated: An impact that requires mitigation to reduce the impact to a less-than-significant level.

Less-Than-Significant Impact: Any impact that would not be considered significant under CEQA relative to existing standards.

No Impact: The project would not have any impact.

I. AESTHETICS. *Would the project:*	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Have a substantial adverse effect on a scenic vista?	☐	✖	☐	☐
b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway?	☐	☐	✖	☐
c. Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	✖	☐	☐
d. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	✖	☐

Discussion

a,c. Typically, a scenic vista is associated with views of an ocean, mountains, hills, lakes, rivers, canyons, open spaces and other natural features. Because the project site contains hills, open spaces, and other natural features, the FPASP Final EIR/EIS states that the site would be considered a scenic vista. In addition, due to the proximity to US 50 where the site is seen by thousands of motorists, viewer sensitivity is considered to be high.

Construction activities and the proposed permanent facilities would be visible from ridgelines and other areas at higher elevations in the vicinity of the project site. Views of the study area would be altered by new above-ground facilities and other site improvements where proposed. However, the above-ground improvements are expected to be partially masked by intervening topography, existing vegetation, and future development within the FPASP area.

North of US 50 Water Improvements

The existing City water facilities have the capacity to serve an initial demand of up to two MGD. The proposed project includes two program-level improvements north of US 50. Booster pumps will eventually be installed at the existing WTP for the ultimate project demand (8.8 MGD). In addition, a water transmission pipeline will eventually be installed from East Bidwell Street to the WTP. The transmission pipeline would extend north along East Bidwell Street, north along Oak Avenue Parkway, and eventually west to the WTP.

The WTP is currently developed with reservoir tanks, drainage ponds, associated buildings, and a parking lot. On-site trees, vegetation, and fencing help shield operations from the adjacent residential development. An existing retaining wall would be extended north to help shield any potential views of the booster pump. The booster pump would blend in with the surrounding infrastructure at the WTP and would be shielded from any potential viewers by fencing and vegetation. As such, the booster pump stations would not

substantially alter the existing visual character of the area or substantially affect a scenic vista.

The proposed water transmission pipeline alignment and ultimate booster pump station location have not been finalized. However, the pipeline is anticipated to run north along East Bidwell Street, north along Oak Avenue Parkway, and then west to the WTP. The pipeline would be located in the roadway rights-of-way and would be buried underground. As such, the pipeline would not substantially alter the existing visual character of the area or substantially affect a scenic vista.

US 50 Crossings

As part of the WMP update, new water transmission pipelines are proposed to extend from the intersection of East Bidwell Street and Iron Point Road in one of two alignments, or a combination of both. One alignment would extend southeasterly along Placerville Road, under the existing US 50 bridge structure. The second prospective alignment would extend southerly along East Bidwell Street, over US 50 using the existing overpass structure. The crossing of US 50 may be achieved by jack-and-bore. In addition, a water booster station, serving water Zones 4 and 5 of the FPASP area, would be located south of US 50, west of Placerville Road.

The proposed water lines would be located beneath roadway rights-of-way in an area surrounded by existing commercial development. The booster pump station would blend in with the surrounding development and would be shielded from any potential viewers north of US 50 by existing vegetation. As such, the WMP improvements would not substantially alter the existing visual character of the area or substantially affect a scenic vista.

As part of the SMP update, new sewer transmission pipelines are proposed to extend from Easton Valley Parkway, which would be located approximately 0.5 miles east of Prairie City Road, crossing US 50 under the existing Highway and north to Iron Point Road.

The sewer transmission pipelines would extend from the proposed Easton Valley Parkway in the northerly direction, beneath US 50, to Iron Point Road. From Easton Valley Parkway to US 50, the sewer lines would be buried underground. Once the sewer line reaches US 50, the sewer lines would be located in a previously developed area associated with the commercial development south of Iron Point Road and north of US 50. As such, the SMP improvements would not substantially alter the existing visual character of the area or substantially affect a scenic vista.

South of US 50 Backbone

The approximately 3,513.4-acre FPASP area, which contains the majority of the proposed project site, is currently predominantly vacant. The project site is generally undeveloped, with the exception of the following: one single-family residence and associated agricultural outbuildings located in the western portion of the FPASP area; four active communication

towers, associated support facilities, and dirt access roads located in the northeastern portion of the FPASP area; Scott Road; and Placerville Road and the adjacent railroad tracks. The following discussion pertains to the proposed improvements located south of US 50 not associated with the US 50 crossings.

Storm Drainage Master Plan

The storm drainage system includes underground pipe conveyances and all of the surface components of the system, including inlets, filters, maintenance access, and outfall structures. The detention facilities would be located at the edge of the drainage corridor where they would intercept run-off from the adjacent development areas before the water enters the main corridor. All roadway crossings of the main branch of Alder Creek would be bridges that span the ordinary high water mark of the creek. When a roadway crosses over a tributary to the creek, a culvert would be installed and sized to meter the runoff through the culverts.

The storm drainage pipe conveyances would be buried underground and thus would not be visible. The surface components, including hydromodification and detention basins, would be located along the proposed roadways and drainage corridors which would be shielded from view by intervening topography and existing vegetation. Two of the sixteen detention basins would have a surface area of less than one acre in size. Four of the remaining basins would have a surface area of less than two acres in size. Many of the basins would be located in low-lying areas that would be shielded by vegetation associated with the creeks in the area. In addition, future development associated with the FPASP would likely shield the surface components from viewers along US 50. Furthermore, as mentioned above, the landscape corridor required by Mitigation Measure 3A.1-1 of the FPASP Final EIR/EIS would eventually shield the proposed improvements from the viewers along US 50.

Water Infrastructure Master Plan

The proposed updates to the WMP include new transmission pipelines, relocation of water storage tanks, and installation of pressure booster pumps. The transmission pipelines would be buried underground and thus would not be visible by the nearby viewers.

The maximum height of the water storage tanks would be approximately 35 feet consisting of 30 feet of water storage, two feet of free board, and three feet for the dome covering the tanks. In Zone 3, two four-million-gallon concrete tanks approximately 150 feet in diameter would be installed. The tanks in Zones 3 and 4 would be buried and only the top three to five feet would be exposed. In Zones 4 and 5, one two-million-gallon tank approximately 108 feet in diameter and one 2.5-million-gallon tank approximately 120 feet in diameter would be installed. The tanks in Zones 4 and 5 would both be steel above ground tanks. Without mitigation, the unburied tanks may be visible from nearby viewers. The pressure booster pumps would mainly be located far from any viewers and would be shielded from view by intervening topography and existing vegetation. In addition, the booster pumps would ultimately blend with the future urban development in the area associated with the FPASP.

Impacts related to full buildout of the FPASP, including installation of the water tanks, was previously analyzed by the FPASP Final EIR/EIS at the program-level. The FPASP Final EIR/EIS determined that impacts to a scenic vista would remain significant and unavoidable even after implementation of Mitigation Measure 3A.1-1 which requires a landscape corridor be maintained adjacent to US 50.[1]

Sewer Master Plan

Trunk sewer mains and transmission pipelines would be buried below ground and sewer lift stations would be located above-ground. The proposed sewer lift station would be shielded by existing and proposed vegetation associated with the open space area in which the lift station will be located. In addition, future development associated with the FPASP would likely shield the surface components from viewers along US 50. Furthermore, the nearest existing receptor to the sewer lift station is located approximately 1,757 feet (or 0.33 miles) to the north. At such a distance, the sewer lift station would not likely be visible to the receptor north of US 50.

Roadway Construction

The backbone street system would be constructed within the FPASP boundaries. The backbone street system would include the regional connectors, major arterials, and some of the minor arterials outlined in Exhibit 2-9 of the FPASP. The street system would include pavement, curbs, gutters, sidewalks, landscaping, and striping. All proposed roadways would be rough graded with a maximum width of 110 feet. In total, approximately 10 miles of roadway would be constructed. As noted above, many of the proposed roadways would be shielded by existing and proposed vegetation associated with the landscape corridor required by the FPASP Final EIR/EIS. In addition, future development associated with the FPASP would likely shield the roadways from viewers along US 50.

Conclusion

The backbone infrastructure would mainly be underground and contained in existing and proposed roadway rights-of-ways. Mitigation Measures 3B.1-2a and 3B.1-2b are included in the FPASP Final EIR/EIS to ensure that the proposed water storage tanks and booster pumps would not substantially degrade the existing visual character of the site. Both mitigation measures, required below, would alleviate potential impacts related to the existing visual character of the area or substantially affecting a scenic vista. In addition, future development of the FPASP area would result in new receptors south of US 50. Development south of US 50 would be required to comply with the relevant City of Folsom policies regarding shielding utilities and directing lighting downward. Nevertheless, without mitigation, the proposed project may have an adverse effect on the existing visual character or a scenic vista, and impacts would be considered ***potentially significant***.

[1] City of Folsom and U.S. Army Corps of Engineers. *Folsom South of U.S. 50 Specific Plan Project Public Draft EIR/EIS.* June 2010. Page 3A.1-25.

Mitigation Measure(s)

Implementation of the following mitigation measures would reduce the proposed project's potential impact to a *less-than-significant* level.

I-1. South of US 50 Backbone and US 50 Crossings

Prior to the approval of improvement plans for the pump stations and storage tank facilities, the project applicant(s) shall show on the improvement plans that the following measures are employed. The external appearance of above-ground facilities, including the choice of color and materials, shall seek to reduce the visual impact of the proposed pump station and above-ground storage tank facilities. Bright reflective materials and colors shall be avoided. As appropriate, the exterior design of these facilities should follow design guidelines provided in applicable land use plans. Minimum exterior design requirements shall include, but are not limited to, the following:

- *Painting (with earth-colored tones) of structural façades to blend with surrounding land uses;*
- *Use of fencing or structural materials similar to those used by nearby land uses;*
- *Installation of berms and/or landscaping around the facility (see Mitigation Measure I-2 for additional detail); and*
- *Clustering of structural facilities to maximize open space buffering.*

The above requirements shall be subject to review and approval by the Folsom Environmental and Water Resources Department and the Community Development Department.

I-2. South of US 50 Backbone and US 50 Crossings

The project applicant(s) shall develop a landscaping plan for each structural facility site that uses a combination of locally derived native vegetation, earthen features (e.g., boulders), and, if appropriate, topographical separations (e.g., berms) to maximize site appearance and shield the new facilities from nearby sensitive receptors to the extent feasible. In addition to complying with local standards, the landscaping plan shall require the following at each site:

- *Vegetation shall be arranged in a hierarchy of plant groupings to enhance the visual and scenic qualities of the site(s). To the extent practical, the design will minimize the need for supplemental irrigation.*

- *New or replacement vegetation shall be compatible with surrounding vegetation and shall be adaptable to the site with regard to rainfall, soil type, exposure, growth rate, erosion control, and energy conservation purposes.*
- *Plant materials chosen shall be species which do not present any safety hazards, which allow native flora to reestablish in the area, and which require minimal maintenance, including watering, pest control, and clean-up of litter from fruit and droppings.*

Prior to the approval of improvement plans for the pump stations and storage tank facilities, the project applicant(s) shall show on the landscaping plan that the above measures are employed. The above requirements shall be subject to review and approval by the Folsom Environmental and Water Resources Department and the Community Development Department.

b. US 50, which is located immediately north of the project site, is not a designated State scenic highway within the vicinity of the project site. According to the FPASP Final EIR/EIS, although the project site does not contain, nor is it visible from, a state-designated scenic highway, Scott Road south of White Rock Road is a designated scenic corridor in Sacramento County because of the location within an especially scenic rural portion of Sacramento County. The project site would be visible from a portion of Scott Road designated as a scenic corridor. However, because the proposed project site has been annexed to the City of Folsom, the project is no longer under the jurisdiction of Sacramento County. The City of Folsom does not designate scenic vistas in the proposed project area. Because a State scenic highway is not located in the vicinity of the site, a ***less-than-significant*** impact would result.

d. Development of the backbone infrastructure would create new permanent sources of light and glare south of US 50. Buildout of the backbone infrastructure may require temporary lighting during construction. However, according to the City of Folsom Municipal Code, construction activities are only permitted during the hours of 7:00 AM to 6:00 PM Monday through Friday, and 8:00 AM to 5:00 PM Saturday and Sunday.

North of US 50 Water Improvements

The nearest sensitive receptors to the proposed components located north of US 50 include residential development in the surrounding area. Specifically, the nearest sensitive receptor to the proposed improvements located at the WTP is within the residential development located approximately 125 feet or further to the west. It should be noted that the WTP currently contains lighting for daily operations and security.

The booster pump station location and water transmission pipeline alignment required for ultimate demand have not been finalized. The lighting required for installation of the booster pump stations at the WTP would be minimal and temporary during construction. Any additional lighting for operation of the booster pump stations would not add to the existing light and glare in the area. The water transmission pipeline would likely be located in roadway rights-of-way which typically contain street lighting and other development. The lighting required for construction of the water pipeline north of US 50 would be minimal as construction would only be permitted during the hours of 7:00 AM to 6:00 PM Monday through Friday, and 8:00 AM to 5:00 PM Saturday and Sunday. Permanent sources of light or glare would not result from the improvements north of US 50.

US 50 Crossings

The nearest sensitive receptors to the proposed components crossing US 50 include residential development in the surrounding area. Specifically, the nearest sensitive receptor to the proposed water line crossing is within the residential development located approximately 800 feet or further from the intersection of East Bidwell Street and Iron Point Road. The nearest sensitive receptor to the proposed sewer line crossing is 155 feet or further from proposed development and is separated from the sewer line crossing by Iron Point Road.

For the proposed improvements crossing US 50, any temporary light necessary for construction would blend in with the surrounding commercial development. The water transmission pipeline would be located in roadway rights-of-ways which typically contain street lighting. Similarly, the sewer transmission pipeline would be separated from any sensitive receptors by Iron Point Road which is lined with street lighting. For the portion of the sewer line just south of US 50, lighting would be minimal and would be shielded by existing vegetation and topography near Alder Creek.

The booster pump station near Placerville Road would be shielded from viewers by the elevated US 50 structure. Lighting required for construction of the sewer line crossing would also blend in with any existing lighting associated with the development just north of US 50.

South of US 50 Backbone

The nearest sensitive receptor to the majority of the proposed backbone infrastructure improvements south of US 50 is within the residential development located near the northeastern boundary of the project site and west of the Sacramento County boundary, approximately 330 feet or further from any areas of the project site that might require grading or paving. It should be noted that the nearest receptor is separated from the project site by an existing noise barrier associated with the residential neighborhood which could also shield potential light required for construction. In addition, as noted above, future development of the FPASP area would result in new receptors south of US 50. Development south of US 50 would be required to comply with the relevant City of Folsom policies regarding directing lighting downward.

Development of the backbone roadways would include street lights. The City of Folsom Municipal Code, Section 14.33.180, contains standards for street lighting to ensure that impacts from light and glare are minimized. The proposed roadways and street lighting would be developed in accordance with the City's Municipal Code. Street lighting would not exceed 30 feet in height and would be directionally shielded to reduce off-site fugitive light and glare. The roadways and street lighting would be subject to design review as outlined in Chapter 17.06 of the Folsom Municipal Code. Construction lighting would be temporary and mainly located in areas a half mile or further from the improvements south of US 50. Existing woodlands in the western portion of the project site south of US 50 would provide additional shielding for much of the construction. As noted above, construction is only permitted during the hours of 7:00 AM to 6:00 PM Monday through Friday, and 8:00 AM to 5:00 PM Saturday and Sunday. It should be noted that the City may authorize work to occur at night after 6:00 PM for short periods of time (approximately one week or less). However, because the nearest receptors are located approximately 330 feet or further from any areas of the site that might require grading or paving, any construction after 6:00 PM would not result in substantial light and glare. As such, the improvements south of US 50 would not significantly increase the amount of light in the area.

Conclusion

Because the proposed project would only be constructed during the daytime hours, the project would not result in substantial sources of lighting in the project vicinity. In addition, as discussed above, the majority of the buildout would occur in vacant areas far from any sensitive receptors. Therefore, the proposed project would have a ***less-than-significant*** impact related to light and glare.

II. AGRICULTURE AND FOREST RESOURCES. *Would the project:*	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	✖
b. Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	✖	☐
c. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	✖
d. Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	✖
e. Involve other changes in the existing environment which, due to their location or nature, could individually or cumulatively result in loss of Farmland to non-agricultural use?	☐	☐	☐	✖

Discussion

a,e. North of US 50 Water Improvements

The existing City water facilities have the capacity to serve an initial demand of up to two MGD. The proposed project includes two program-level improvements north of US 50. Booster pumps will eventually be installed at the existing WTP for the ultimate project demand (8.8 MGD). In addition, a water transmission pipeline will eventually be installed from East Bidwell Street to the WTP. The transmission pipeline would extend north along East Bidwell Street, north along Oak Avenue Parkway, and eventually west to the WTP. The area proposed for construction of the components north of US 50 contains commercial and residential development.

The proposed booster pump station and water transmission pipeline would not be located on a site designated as Farmland pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency. According to the Sacramento County Important Farmland 2010 map prepared by the Department of Conservation, the area proposed for construction of the water pipeline north of US 50 is designated as Urban and Built-Up Land. The Folsom WTP is also designated is Urban and Built-Up land. The Urban and Built-Up Land designation is not considered Important Farmland. As such, the proposed improvements crossing US 50 would not convert Farmland to non-agricultural uses.

US 50 Crossings

The proposed project includes two components north of and crossing US 50. The improvements are proposed to cross US 50 near East Bidwell Street and Prairie City Road. The areas proposed for construction north of and crossing US 50 contain existing roadways and existing development. The water line crossing near East Bidwell Street and US 50 is in an area with industrial and commercial development north of US 50. The area proposed for construction of the sewer line crossing US 50 approximately 0.5 miles east of Prairie City Road is in an area with commercial development north of US 50 and open space south of US 50.

The proposed pipeline crossings would not be located on a site designated as Farmland pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency. According to the Sacramento County Important Farmland 2010 map prepared by the Department of Conservation, the crossing areas are designated as Urban and Built-Up Land. The Urban and Built-Up Land designation is not considered Important Farmland. As such, the proposed improvements crossing US 50 would not convert Farmland to non-agricultural uses.

South of US 50 Backbone

The approximately 3,513.4-acre FPASP area, which contains the majority of the proposed project site, is currently vacant. The project site is generally undeveloped, with the exception of the following: one single-family residence and associated agricultural outbuildings located on the western side of the FPASP area; four active communication towers, associated support facilities, and dirt access roads located in the northeastern portion of the FPASP area; Scott Road; and Placerville Road and the adjacent railroad tracks. The project site south of US 50 is not located on agricultural lands designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. The project site south of US 50 is designated as "Grazing Land" on the Sacramento County Important Farmland 2010 map. The Grazing Land designation is not considered Important Farmland.

In addition, impacts related to the conversion of Important Farmland to non-agricultural uses were determined to have no impact by the FPASP Final EIR/EIS. The proposed Master Plans would not significantly alter the conclusion of the FPASP Final EIR/EIS. As such, the proposed improvements south of US 50 would not convert Farmland to non-agricultural uses.

Conclusion

The Sacramento County Important Farmland map designates the project site as Grazing Land and Urban and Built-Up Land and the areas of the crossings are in developed areas. The aforementioned farmland designations are not considered Important Farmland. Thus, ***no impact*** related to the conversion of Important Farmland or changes which result in the conversion of Important Farmland would occur as a result of the proposed project.

b. North of US 50 Water Improvements

The existing City water facilities have the capacity to serve an initial demand of up to two MGD. The proposed project includes two program-level improvements north of US 50. Booster pumps will eventually be installed at the existing WTP for the ultimate project demand (8.8 MGD). In addition, a water transmission pipeline will eventually be installed from East Bidwell Street to the WTP. The transmission pipeline would extend north along East Bidwell Street, north along Oak Avenue Parkway, and eventually west to the WTP. The areas proposed for construction of the improvements north of US 50 is not under a Williamson Act contract.

US 50 Crossings

The proposed project includes two pipeline crossings of US 50 as well as pipeline extensions north beneath existing roadways rights-of-way. The areas south of US 50 near the proposed water and sewer improvements crossing US 50 are under a Williamson Act contract. A notice of nonrenewal was filed for the parcel under a Williamson Act contract in 2006; as a result, the existing contract will expire in 2016. Specifically, Williamson Act contract number 74-AP-029 would expire one year after the expected construction start date of 2015. However, public improvements and other special exemptions can take place on land for which a Williamson Act contract has been filed for non-renewal. The special exemptions are outlined below.

South of US 50 Backbone

According to the FPASP Final EIR/EIS, approximately 1,530 acres of the project site south of US 50 consist of agricultural lands under existing Williamson Act contracts that are in the process of nonrenewal. Notices of nonrenewal were filed for the aforementioned parcels in 2004 and 2006; as a result, the existing contracts will expire in 2014 and 2016, respectively. The notices of nonrenewal were filed five to seven years prior to FPASP approval in 2011; therefore, the intent to cancel the contract was shown prior to approval of the FPASP.

According to California Government Code Section 51292, a public agency shall not locate a public improvement within an agricultural preserve unless the following findings are made:

> (a) The location is not based primarily on a consideration of the lower cost of acquiring land in an agricultural preserve.
> (b) If the land is agricultural land covered under a contract pursuant to this chapter for any public improvement, that there is no other land within or outside the preserve on which it is reasonably feasible to locate the public improvement.

The proposed backbone infrastructure would support the future development of the FPASP. The locations of the proposed improvements are not based primarily on a consideration of the lower cost of acquiring land in an agricultural preserve. Instead, the locations of the proposed improvements are best suited for the land in question as the

FPASP area has been planned for future urban development. In addition, other land within or outside the land under contract 74-AP-029, on which it is reasonably feasible to locate the proposed public improvements does not exist. As such, the proposed project would comply with the conditions outlined in Section 51292.

According to California Government Code Section 51293, special exemptions can take place on land for which a Williamson Act contract has been filed for nonrenewal. The proposed backbone infrastructure would fall under criteria (c) because the locations of the public utility improvements have been approved by the Public Utilities Commission. Therefore, the proposed improvements can take place on land for which a Williamson Act contract has been filed for nonrenewal but would not take place until 2016 when the contract is expired.

Conclusion

Because buildout of the proposed project would not conflict with a Williamson Act contract pursuant to Section 51293 and the property has filed for nonrenewal, the project would result in a ***less-than-significant*** impact.

c,d. North of US 50 Water Improvements

The areas proposed for construction of the improvements north of US 50 is not zoned for timberland. The zoning for the pipeline alignment and WTP includes residential, open space, and commercial uses. As such, the proposed improvements north of US 50 would not result in the loss of forest land or conversion of forest land to non-forest use or conflict with existing zoning for, or cause rezoning of, forest land.

US 50 Crossings

The area at the two US 50 crossing locations include US 50 and the US 50 overpass at East Bidwell and Scott Road. Both locations area not zoned for timberland per Public Resources Code Section 4526. As such, the proposed improvements crossing US 50 would not result in the loss of forest land or conversion of forest land to non-forest use or conflict with existing zoning for, or cause rezoning of, forest land.

South of US 50 Backbone

According to the Zoning Map for the FPASP, the project site south of US 50 is zoned Specific Plan District. The FPASP created zoning categories that are unique and only apply to the FPASP area. The categories include residential and non-residential uses. Neither timberland nor forestland are included in the FPASP zoning categories. As such, the area south of US 50 proposed for improvements is not designated, zoned, or prezoned as timberland or forest land. Therefore, the proposed improvements south of US 50 would not result in the loss of forest land or conversion of forest land to non-forest use or conflict with existing zoning for, or cause rezoning of, forest land.

Conclusion

The proposed project site is not considered forest land (as defined in Public Resources Code section 12220[g]), timberland (as defined by Public Resources Code Section 4526), and is not zoned Timberland Production (as defined by Government Code Section 51104[g]). Therefore, the proposed project would have ***no impact*** with regard to conversion of forest land or any potential conflict with forest land, timberland, or Timberland Production zoning.

III. AIR QUALITY. *Would the project:*	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Conflict with or obstruct implementation of the applicable air quality plan?	☐	✖	☐	☐
b. Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	✖	☐	☐
c. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☐	✖	☐
d. Expose sensitive receptors to substantial pollutant concentrations?	☐	✖	☐	☐
e. Create objectionable odors affecting a substantial number of people?	☐	☐	✖	☐

Discussion

a,b. The City of Folsom is within the jurisdictional area of the Sacramento Metropolitan Air Quality Management District (SMAQMD), which regulates air quality in the Sacramento Metropolitan Area, and is located in the Sacramento Valley Air Basin (SVAB). The Folsom area is currently designated as a nonattainment area for State and federal ozone, State and federal particulate matter 2.5 microns in diameter ($PM_{2.5}$), and State particulate matter 10 microns in diameter (PM_{10}) standards. Due to the nonattainment designations, the SMAQMD, along with the other air districts in the SVAB region, is required to develop plans to attain the federal and State standards for ozone and particulate matter. The SMAQMD currently has the following air quality plans in place: the *2013 Revisions to the Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan* (2013 Ozone Attainment Plan); the *$PM_{2.5}$ Implementation/Maintenance Plan and Re-designation Request for Sacramento $PM_{2.5}$ Nonattainment Area* ($PM_{2.5}$ Implementation/Maintenance Plan); and the *2009 Triennial Report and Plan Revision*. The air quality plans include emissions inventories to measure the sources of air pollutants, to evaluate how well different control measures have worked, and show how air pollution will be reduced. In addition, the plans include the estimated future levels of pollution to ensure that the area will meet air quality goals.

In order to help public agencies evaluate air quality impacts, the SMAQMD has developed the *Guide to Air Quality Assessment in Sacramento County* (CEQA Guide). The SMAQMD's CEQA Guide includes recommended thresholds of significance, including mass emission thresholds for construction-related and operational ozone precursors, as well as screening criteria. The SMAQMD thresholds of significance, as well as the rules and regulations, are consistent with the air quality plans. According to the SMAQMD CEQA Guide, projects that exceed the SMAQMD's mass emission thresholds for operational emissions of ROG or NO_X would be considered to conflict with or obstruct implementation of the SMAQMD's air quality planning efforts.

The SMAQMD's significance thresholds associated with development projects for ozone precursor emissions of reactive organic gases (ROG) and nitrogen oxide (NO_X) are presented in Table 2 and are expressed in pounds per day (lbs/day).

Table 2
SMAQMD Thresholds of Significance

Pollutant	Construction (lbs/day)	Operational (lbs/day)
ROG	-	65
NO_x	85	65
Source: SMAQMD, May 2011.		

In addition to ozone precursors, the SMAQMD considers PM_{10} emissions to be significant if they exceed the concentration-based thresholds of significance of 50 micrograms per cubic meter ($\mu g/m^3$) (24-hour standard) or 20 $\mu g/m^3$ (annual arithmetic mean) at an off-site receptor location. Because $PM_{2.5}$ is a subset of PM_{10}, the SMAQMD assumes that construction projects that do not generate concentrations of PM_{10} that exceed the concentration-based threshold of significance would also be considered less-than-significant for $PM_{2.5}$ impacts. The SMAQMD has developed screening level thresholds based on preliminary modeling performed by the SMAQMD using default values. For construction-related PM emissions, projects that meet the following two conditions would not have the potential to exceed or contribute to the concentration-based threshold of significance for PM_{10} (and, therefore, $PM_{2.5}$) at an off-site location:

- The project would implement all Basic Construction Emission Control Practices; and
- The maximum daily disturbed area (i.e., grading, excavation, cut and fill) would not exceed 15 acres. (If the maximum daily disturbed area is not known at the time of the analysis, SMAQMD guidance states that users shall assume that up to 25 percent of the total project area would be disturbed in a single day.)

It should be noted that all projects involving construction activities, regardless of screening level, are required to implement the SMAQMD's Basic Construction Emission Control Practices.

Construction Emissions

During construction of the project, various types of equipment and vehicles would temporarily operate on the project site. Construction exhaust emissions would be generated from construction equipment, vegetation clearing and earth movement activities, construction workers' commute, and construction material hauling for the entire construction period. The aforementioned activities would involve the use of diesel- and gasoline-powered equipment that would generate emissions of criteria pollutants. Project construction activities also represent sources of fugitive dust, which includes PM emissions. As construction of the proposed project would generate air pollutant emissions intermittently within the site, and in the vicinity of the site, until all construction has been

completed, construction is a potential concern because the proposed project is in a nonattainment area for ozone and PM.

In accordance with the SMAQMD CEQA Guide, the SMAQMD's Road Construction Emissions Model, version 7.1.5.1 (RoadMod) was utilized to estimate the proposed project's construction-related emissions. Utilizing RoadMod, the proposed project's construction-related NO_X emissions for each phase of construction were estimated and the resultant maximum estimated emissions are presented in Table 3 below. As shown in the table, the proposed project's maximum unmitigated construction-related emissions would exceed the applicable threshold of significance for NO_X.

Table 3
Maximum Unmitigated Project Construction Emissions

Pollutant	Project Emissions (lbs/day)	SMAQMD Significance Threshold (lbs/day)
NO_X	253.8	85

Source: RoadMod, October 2014 (See Appendix A).

Impacts related to the generation of construction emissions of NO_X and PM_{10} associated with buildout of the entire FPASP, including the backbone infrastructure, were analyzed in Impact 3.A.2-1 of the FPASP Final EIR/EIS. The proposed project would be required to comply with all applicable mitigation measures set forth in the FPASP Final EIR/EIS, which include Mitigation Measures 3A.2-1a through 3A.2-1c of the FPASP Final EIR/EIS. The mitigation measures include the following: implementation of SMAQMD's Basic Construction Emission Control Practices, Enhanced Fugitive PM Dust Control Practices, Enhanced Exhaust Control Practices, compliance with all applicable SMAQMD rules and regulations; payment of an off-site mitigation fee to SMAQMD to offset construction-related NO_X emissions; and project-level analysis for construction-related PM_{10} emissions.

According to the FPASP Final EIR/EIS, implementation of the mitigation measures presented above would reduce the impacts from buildout of the entire FPASP area, including the project site, associated with construction-related NO_X emissions to a less-than-significant level. The proposed project's construction-related emissions of NO_X have already been anticipated and accounted for in the FPASP Final EIR/EIS, and implementation of the proposed project would not result in any new impacts or an increase in the severity of any previously identified air quality impacts per the FPASP Final EIR/EIS. In addition, the proposed project is required to comply with all applicable SMAQMD rules and regulations for construction. Compliance with SMAQMD rules and regulations and the FPASP Final EIR/EIS mitigation measures would minimize emissions generated during construction activities. Because construction NO_X emissions would be minimized with compliance with SMAQMD rules and regulations and the FPASP Final EIR/EIS mitigation measures, and the proposed project's NO_X emissions would not result in any additional impacts beyond those already anticipated in the FPASP Final EIR/EIS, in accordance with CEQA Guidelines, section 15162, construction-related NO_X emissions associated with development of the proposed project would be considered to result in a less-than-significant change to the impact identified in the FPASP Final EIR/EIS. Nonetheless, because the proposed project would result in NO_X emissions in excess of the

applicable threshold of significance, the project would still be contributing towards the region's nonattainment status of ozone and could violate air quality standards and/or conflict with or obstruct implementation of the applicable air quality plan.

Based on the anticipated construction schedule for the proposed project, construction activities would not result in ground disturbance in excess of 15 acres per day. In addition, as noted above, all projects involving construction activities, including the proposed project, are required to implement Basic Construction Emission Control Practices. Therefore, in accordance with the SMAQMD CEQA Guide, the proposed project would not have the potential to exceed or contribute to the concentration-based threshold of significance for PM_{10} (and, therefore, $PM_{2.5}$) at an off-site location. Nonetheless, the proposed project would be required to comply with all applicable SMAQMD rules and regulations, as well as the FPASP Final EIR/EIS mitigation measures presented above. Accordingly, the proposed project's impacts related to PM emissions would be considered less than significant.

Because the locations and other project-specific construction details for the booster pump stations at the WTP located north of US 50 and the associated pipeline have not yet been finalized, the construction-related emissions of such could not be estimated at this time. At the time such project-specific information is available, a detailed, project-level air quality analysis would be required.

Operational Emissions

Operational emissions of criteria air pollutants are generated by mobile and stationary sources, including day-to-day activities such as vehicle trips to and from a project site, natural gas combustion from heating mechanisms, landscape maintenance equipment exhaust, and consumer products (e.g., deodorants, cleaning products, spray paint, etc.). The proposed project consists of construction of backbone infrastructure for buildout of the FPASP, including roadway construction of the street system and utilities infrastructure such as pipelines, manholes, sewer mains, lift stations, booster pumps, pump stations, storage tanks, and basins. The backbone infrastructure would support the future buildout of the FPASP and would become operational as necessary in conjunction with future land use development in the area.

It should be noted that because the because development of the FPASP was not included in any of the existing air quality plans, the associated emissions from development were not accounted for in the emissions inventories of the plans. As a result, an Operational Air Quality Mitigation Plan (OAQMP) was required to be prepared for the FPASP (per Mitigation Measure 3A.2-2 of the FPASP Final EIR/EIS) in order to ensure that emissions of ROG and NO_X associated with development of the FPASP area would be reduced by 35 percent in accordance with SMAQMD and County requirements. According to the FPASP Final EIR/EIS, although implementation of the OAQMP mitigation measures would reduce the ROG and NO_X emissions by 35 percent, the levels from buildout of the entire FPASP would still exceed the SMAQMD threshold of significance of 65 lbs/day. Thus, a significant and unavoidable impact was identified for buildout of the FPASP.

The proposed project is merely placing the necessary infrastructure to accommodate future planned development projects in the area. The proposed project would not involve new long-term operational mobile or area sources, and would not introduce any new population to the area. For example, although the project would involve the placement of roadways, the project does not propose any land uses that would generate vehicle trips. The only operational emissions associated with the proposed project would involve emissions from fuel combustion necessary to operate the booster pump and sewer lift stations, which would be subject to stationary source permits from SMAQMD. Future buildout of the FPASP area would directly induce population growth in the area, which would result in a direct increase in mobile, area, and stationary source emissions, such as increases in vehicle trips, combustion of fuels for energy, heating and cooling mechanisms, generator usage, etc. It should be noted that each future development within the FPASP area would be required to undergo individual project-level environmental review, including analysis of the associated operational emissions.

Accordingly, implementation of the proposed project would not generate any substantial long-term emissions of NO_X, ROG, or any other criteria pollutant and would not substantially degrade the region's air quality during operations. In addition, the proposed project's operational emissions have already been anticipated and analyzed in the FPASP Final EIR/EIS, and the project would not result in any additional impacts beyond those already anticipated in the FPASP Final EIR/EIS. Furthermore, the proposed project would be required to comply with any applicable SMAQMD rules and regulations, as well as any applicable mitigation measures set forth in the FPASP Final EIR/EIS and OAQMP. Therefore, the proposed project's operational emissions would not result in any impacts beyond those already anticipated in the FPASP Final EIR/EIS, and operational impacts would be considered less-than-significant.

Conclusion

Based on the above discussions, the proposed project's impacts related to PM emissions would be considered less than significant. Although the proposed project would not result in construction-related NO_X emissions that would result in additional impacts beyond what has been anticipated per the FPASP Final EIR/EIS, because the project's NO_X emissions would exceed the applicable threshold of significance, the project would contribute to the region's nonattainment status of ozone. In addition, because project-specific details for the booster pump stations located north of US 50 and the associated pipeline have not yet been finalized, the emissions related to such could not be analyzed at this time. Therefore, the proposed project could violate air quality standards and/or conflict with or obstruct implementation of the applicable air quality plan, and impacts would be considered ***potentially significant***.

Mitigation Measure(s)

Implementation of Mitigation Measure III-1 would reduce the proposed project's construction NO_X emissions from 253.8 lbs/day to 203.04 lbs/day, which would still exceed the applicable SMAQMD threshold of significance. Implementation of Mitigation Measure III-2 would further reduce the proposed project's construction NO_X emissions to 85 lbs/day via payment of an off-site fee. Therefore, implementation of the following mitigation measures would reduce the above impact to a *less-than-significant* level.

South of US 50 Backbone and US 50 Crossings

III-1. Prior to initiation of construction, the project contractor shall provide a plan for approval by SMAQMD demonstrating that the heavy-duty (50 horsepower [hp] or more) off-road vehicles to be used during construction of the project, including owned, leased, and subcontractor vehicles, will achieve a project-wide fleet-average 20 percent NO_X reduction compared to the most recent CARB fleet average. Acceptable options for reducing emissions may include use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, and/or other options as they become available. The SMAQMD's Construction Mitigation Calculator (available at: http://www.airquality.org/ceqa/mitigation.shtml) can be used to identify an equipment fleet that achieves this reduction.

III-2. Prior to the approval of grading plans, the applicant shall pay SMAQMD an off-site mitigation fee for implementation of the proposed project for the purpose of reducing NO_X emissions to a less-than-significant level (i.e., less than 85 lb/day). The mitigation fee is used by SMAQMD to purchase off-site emissions reductions. Such purchases are made through SMAQMD's Heavy Duty Incentive Program, through which select owners of heavy-duty equipment in Sacramento County can repower or retrofit their old engines with cleaner engines or technologies. The applicant shall calculate the project's off-site mitigation fee amount in accordance with SMAQMD's recommended guidance and the current mitigation fee rate. The fee amount shall be subject to review and approval by SMAQMD. Verification of payment shall be provided to the Folsom Community Development Department.

North of US 50 Water Improvements

III-3. Prior to the approval of grading plans for the booster pump station at the WTP and associated water transmission pipeline to be located north of US 50, the project applicant shall perform a detailed site- and project-specific air quality analysis for review by SMAQMD and the Folsom Community Development Department and approval by the City. The analysis shall be conducted consistent with the SMAQMD CEQA Guide and shall show that the resulting emissions are below the SMAQMD thresholds. If necessary,

the analysis shall include mitigation measures to reduce the emissions below the SMAQMD thresholds. Mitigation could include, but is not limited to, the payment of off-site mitigation fees for reducing NO_x emissions, the use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, and/or other options as they become available.

c. A cumulative impact analysis considers a project over time in conjunction with other past, present, and reasonably foreseeable future projects whose impacts might compound those of the project being assessed. Air pollution is largely a cumulative impact. The nonattainment status of regional pollutants, including ozone and PM, is a result of past and present development, and, thus, cumulative impacts related to these pollutants could be considered cumulatively significant. Future attainment of ambient air quality standards is a function of successful implementation of SMAQMD attainment plans. Consequently, the SMAQMD's approach to cumulative thresholds of significance is relevant to whether a project's individual emissions would result in a cumulatively considerable contribution to the SVAB's existing cumulative impacts related to air quality conditions. If a project's emissions would be less than SMAQMD thresholds, the project would not be expected to result in a cumulatively considerable contribution to a significant cumulative impact. However, that exceedance of the project-level thresholds would not necessarily constitute a significant cumulative impact.

The FPASP Final EIR/EIS concluded that buildout of the entire FPASP, including the proposed project, would result in a cumulatively considerable incremental contribution to a significant cumulative impact associated with temporary, short-term construction and long-term operational air quality impacts. However, as discussed above, the proposed project would not result in the generation of any long-term operational emissions of NOx, ROG, or any other criteria pollutant and would not result in additional impacts beyond what has been anticipated per the FPASP Final EIR/EIS. In addition, the proposed project would be required to comply with all applicable SMAQMD rules and regulations and applicable FPASP Final EIR/EIS mitigation measures. Therefore, the proposed project's incremental contribution towards the significant and unavoidable impact identified for buildout of the entire FPASP would be would not be considered cumulatively considerable, and impacts would be ***less than significant***.

d. Sensitive receptors are typically defined as facilities where sensitive receptor population groups (children, the elderly, the acutely ill, and the chronically ill) are likely to be located. Land uses typically associated with sensitive receptor groups, include residences, schools, playgrounds, childcare centers, retirement homes, convalescent homes, hospitals, and medical clinics. The proposed project consists of construction of backbone infrastructure for buildout of the FPASP, including roadway construction of the street system and utilities infrastructure such as pipelines, manholes, sewer mains, lift stations, booster pumps, pump stations, storage tanks, and basins. As such, the proposed project would not introduce any new sensitive receptors to the area.

The majority of the proposed improvements would occur within the FPASP boundaries, which is predominantly vacant and undeveloped land. The nearest sensitive receptors to the US 50 crossings are located approximately 800 feet or further from the proposed improvements. The nearest sensitive receptors to the proposed south of US 50 backbone infrastructure improvements are located approximately 330 feet or further from any areas of the project site that might require grading or paving. The nearest residences to the proposed pumps at the WTP north of US 50, which are located approximately 125 feet from the improvements, would be the nearest sensitive receptors. The alignment of the associated pipeline has not yet been finalized; thus, the nearest sensitive receptor to the improvement is currently unknown.

The major pollutant concentrations of concern are localized carbon monoxide (CO) emissions and toxic air contaminants (TAC) emissions. Localized concentrations of CO are related to the levels of traffic and congestion along streets and at intersections. Due to the predominantly construction-related nature of the proposed project, implementation of the project would not increase traffic volumes; therefore, the project would not result in an increase in local CO concentrations.

TACs are present in many types of emissions with varying degrees of toxicity. Sources of TACs include industrial processes such as petroleum refining and chrome plating operations, commercial operations such as gasoline stations and dry cleaners, and motor vehicle exhaust. Health risks from TACs are a function of both the concentration of emissions and the duration of exposure, which typically are associated with long-term exposure and the associated risk of contracting cancer. The California Air Resources Board (CARB) *Air Quality and Land Use Handbook: A Community Health Perspective* (Handbook) provides recommendations for siting new sensitive land uses near sources typically associated with significant levels of TAC emissions, including, but not limited to, freeways and high traffic roads, distribution centers, and rail yards. The CARB has identified diesel particulate matter (DPM) from diesel-fueled engines as a TAC; thus, high volume freeways, stationary diesel engines, and facilities attracting heavy and constant diesel vehicle traffic are identified as having the highest associated health risks from DPM. The proposed project does not involve long-term operation of any stationary diesel engine or other major on-site stationary source of TACs.

Construction activities have the potential to generate DPM emissions related to the number and types of equipment typically associated with construction. Off-road heavy-duty diesel equipment used for site grading, paving, and other construction activities result in the generation of DPM. However, construction is temporary and occurs over a relatively short duration in comparison to the operational lifetime of the proposed project. In addition, buildout of the proposed project would occur in phases, where only portions of the improvements would be constructed at a time; thus, only portions of total project area would be disturbed at a time with operation of construction equipment occurring intermittently throughout the course of a day. The federal government and SMAQMD have established regulations governing the emissions of off-road construction vehicles with the intent of reducing emissions over time. All construction vehicles would be required to comply with all applicable regulations. Furthermore, the nearest existing sensitive receptor

to any of the proposed improvements would be located approximately 125 feet from the improvement area. As a result, the likelihood that any one sensitive receptor would be exposed to high concentrations of DPM for any extended period of time would be very low. Because health risks associated with exposure to DPM or any TAC are correlated with high concentrations over a long period of exposure (e.g., over a 70-year lifetime), the temporary, intermittent construction-related DPM emissions would not be expected to cause any health risks to any nearby sensitive receptors. As such, construction of the proposed project would not expose any nearby existing sensitive receptors to substantial concentrations of TACs.

Naturally-Occurring Asbestos (NOA)

Naturally occurring asbestos (NOA) was identified as a TAC in 1986 by CARB. Earth disturbance activity could result in the release of NOA to the air. NOA is located in many parts of California. At the request of SMAQMD, the California Geological Survey (formerly the California Division of Mines and Geology) prepared a report called the *Relative Likelihood for the Presence of Naturally Occurring Asbestos in Eastern Sacramento County, California*. The map in the aforementioned report displays "areas moderately likely to contain NOA." According to the map, the proposed project is located in an area moderately likely to contain NOA. Although geologic conditions are more likely for asbestos formation in particular areas identified by the map, the presence thereof is not certain.

According to the FPASP Final EIR/EIS, impacts related to construction-generated emissions of NOA would be less-than-significant with implementation of Mitigation Measure 3A.2-5, which requires a site investigation to determine the presence of NOA. Mitigation Measure 3A.2-5 is included below as Mitigation Measure III-4. Because a potential exists for NOA to occur on the project site, NOA could become released to the air during construction activities, potentially exposing sensitive receptors.

Conclusion

As discussed above, the proposed project would not cause or be exposed to substantial pollutant concentrations, including localized CO or TAC emissions. However, the potential exists for NOA-containing minerals to be located on site. If such minerals are encountered at the site, construction activities could result in the release of NOA into the air. In order to ensure that workers and any existing sensitive receptors would not be exposed to NOA, control measures would be required during construction activities. Therefore, exposure of sensitive receptors to NOA could result and a ***potentially significant*** short-term impact would occur.

Mitigation Measure(s)
Implementation of the following mitigation measure would reduce the proposed project's potential impact a *less-than-significant* level.

South of US 50 Backbone, US 50 Crossings, and North of US 50 Water Improvements

III-4. Prior to the commencement of any site-disturbing activities, the applicant shall obtain the services of a California Certified Geologist to conduct a thorough site investigation of the development area per the protocol outlined in the California Geological Survey Special Report 124[2] to determine whether and where NOA is present in the soil and rock on the project site and/or areas that would be disturbed by the project, except for those areas previously explored and sampled for NOA as part of the Geotechnical Engineering Study for Russell Ranch South prepared by Youngdahl Consulting Group, Inc. in December 2013. The site investigation shall include the collection of three soil and rock samples per acre to be analyzed via the CARB 435 Method. If the investigation determines that NOA is not present on the project site, then the project applicant shall submit a Geologic Exemption to SMAQMD as allowed under Title 17, Section 93105, Asbestos Airborne Toxic Control Measure for Construction, Grading, Quarrying, and Surface Mining (Asbestos ATCM). The project applicant shall submit proof of compliance with the above to the Folsom Community Development Department.

If the site investigation determines that NOA is present on the project site, then, prior to commencement of any ground disturbance activity, the project applicant shall submit to the SMAQMD for review and approval an Asbestos Dust Mitigation Plan, including, but not limited to, control measures required by the Asbestos ATCM, such as vehicle speed limitations, application of water prior to and during ground disturbance, keeping storage piles wet or covered, and track-out prevention and removal.[3] The project applicant shall submit proof of compliance with the above to the Folsom Community Development Department. Upon approval of the Asbestos Dust Control Plan by the SMAQMD, the applicant shall ensure that construction contractors implement the terms of the plan throughout the construction period.

If NOA is determined to be located on the surface of the project site, all surface soil containing NOA shall be replaced with clean soil or capped with another material (e.g., cinder or rubber), as necessary, subject to review and approval by the City Engineer.

e. While offensive odors rarely cause physical harm, they can be unpleasant, leading to considerable annoyance and distress among the public and can generate citizen complaints

[2] California Department of Conservation. *Special Publication 124: Guidelines for Geologic Investigations of Naturally Occurring Asbestos in California*. 2002. Available at: http://www.conservation.ca.gov/cgs/minerals/hazardous_minerals/asbestos/Documents/Asbestos_Guidelines_SP124.pdf. Accessed October 13, 2014.

[3] California Air Resources Board. *Asbestos Airborne Toxic Control Measure for Construction, Grading, Quarrying, and Surface Mining Operations*. July 29, 2002. Available at: http://www.arb.ca.gov/toxics/atcm/asb2atcm.htm. Accessed October 13, 2014.

to local governments and air districts. Due to the subjective nature of odor impacts, the number of variables that can influence the potential for an odor impact, and the variety of odor sources, quantitative or formulaic methodologies to determine the presence of a significant odor impact do not exist. Adverse effects of odors on residential areas and other sensitive receptors warrant the closest scrutiny; but consideration should also be given to other land use types where people congregate, such as recreational facilities, worksites, and commercial areas.

The potential for an odor impact is dependent on a number of variables including the nature of the odor source, distance between a receptor and an odor source, and local meteorological conditions. One of the most important factors influencing the potential for an odor impact to occur is the distance between the odor source and receptors. The greater the distance between an odor source and receptor, the less concentrated the odor emission would be when reaching the receptor. Examples of common land use types that typically generate significant odor impacts include, but are not limited to, the following: wastewater treatment plants; sanitary landfills; composting/green waste facilities; recycling facilities; petroleum refineries; chemical manufacturing plants; painting/coating operations; rendering plants; and food packaging plants.

The proposed project would not involve any of the aforementioned examples of land uses typically associated with objectionable odors. In addition, the proposed project would not introduce any new sensitive receptors to the area. While the proposed project does not involve wastewater treatment plants, the proposed project does, however, involve infrastructure associated with the sewer system, including pipelines and lift stations. It should be noted that occasional odor associated with the sewer pipelines may occur. However, odor control facilities would be constructed as part of the proposed project, and high-velocity hydraulic cleaning and vacuum cleaning of select sewer lines would be provided, as necessary. The flushing program would ensure that effluent does not sit in the pipe for extended periods, thereby reducing the potential for operational odors associated with the sewer pipeline.

Diesel fumes from construction equipment are often found to be objectionable; however, construction is temporary and associated diesel emissions would be regulated. In addition, as mentioned above, the nearest existing sensitive receptor to any of the proposed improvements would be located approximately 125 feet from the improvement area. Furthermore, the proposed project would be required to implement all applicable mitigation measures required for the area per the FPASP Final EIR/EIS. According to the FPASP EIR, implementation of Mitigation Measure 3A.2-1a of the FPASP Final EIR/EIS related to construction emission control would reduce the exposure of sensitive receptors to construction-related odorous emissions. Therefore, construction of the proposed project would not be expected to create objectionable odors affecting a substantial number of people.

The SMAQMD regulates objectionable odors through Rule 402 (Nuisance), which prohibits any person or source from emitting air contaminants that cause detriment, nuisance, or annoyance to a considerable number of persons or the public. Rule 402 is

enforced based on complaints. If complaints are received, the SMAQMD is required to investigate the complaint, as well as determine and ensure a solution for the source of the complaint, which could include operational modifications. Thus, although not anticipated, if odor complaints are made after the proposed project is developed, the SMAQMD would ensure that such odors are addressed and any potential odor effects reduced to less than significant.

For the aforementioned reasons, the proposed project would not create objectionable odors, and potential impacts related to objectionable odors would be ***less than significant***.

IV. BIOLOGICAL RESOURCES. *Would the project:*	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	✖	☐	☐
b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	☐	✖	☐	☐
c. Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	✖	☐	☐
d. Interfere substantially with the movement of any resident or migratory fish or wildlife species or with established resident or migratory wildlife corridors, or impede the use of wildlife nursery sites?	☐	☐	✖	☐
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	✖	☐	☐
f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Conservation Community Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	✖

Discussion

The following discussion is based on the biological resources report prepared for the proposed project by ECORP Consulting, Inc.

Special-Status Plants

Based on the habitat and elevation range of the project area, 12 special-status plants have at least some potential to be present within the project area (see Table 4). Focused surveys for special-status plant species have been conducted on all portions of the project site south of US 50 except for two properties. One property that has not been surveyed for special-status plant species is located in the western FPASP area between Scott Road and Prairie City Road and between US 50 and White Rock Road (known as the Javanifard and Sarghami property). The second property is located east of Placerville Road along the Sacramento County/El Dorado County boundary (known

as the Folsom Heights property). See Figure 15 in the wetlands discussion below for the exact location of the Javanifard and Sarghami and the Folsom Heights properties (outlined in red). Special-status plant species were not found to occur during any of the focused surveys.

Table 4
Special-Status Plants having Potential to Occur within Project Area

Common Name	Scientific Name	Habitat Description	Approximate Survey Dates
Big scale balsamroot	*Balsamorhiza macrolepis* var. *macrolepis*	Chaparral, cismontane woodland and valley and foothill grassland. Sometimes on serpentine.	March to June
Hispid bird's beak	*Cordylanthus mollis* ssp. *hispidus*	Alkaline meadows, seeps, and playas (0 to 500 inches).	June to September
Dwarf downingia	*Downingia pusilla*	Vernal pools or other seasonal wetlands in annual grasslands (0 to 1,500 feet).	March to May
Tuolumne button-celery	*Eryngium pinnaisectum*	Chaparral, cismontane woodland and valley and foothill grassland. Sometimes on serpentine.	March to June
Bogg's Lake hedge hyssop	*Gratiola heterosepala*	Alkaline meadows, seeps, and playas (0 to 500 inches).	June to September
Ahart's dwarf rush	*Juncus leiospermus* var. *ahartii*	Vernal pools or other seasonal wetlands in annual grasslands (0 to 1,500 feet).	March to May
Red Bluff dwarf rush	*Juncus leiospermus var. leiospermus*	Vernal pools or other seasonal wetlands in cisomtane woodland and lower montane coniferous forest (200 to 3,000 feet).	June to August
Legenere	*Legenere limosa*	Lake marine marshes and swamps, vernal pools, and other seasonal wetlands, primarily in clay soils (30 to 8,000 feet).	April to August
Pincushion navarretia	*Navarretia meyersii* ssp. *meyersii*	Vernal pools and swales in areas of low cover of competing vegetation; most often on gopher turnings along margins of pools (95 to 750 feet).	March to May
Sanford's arrowhead	*Sagitarria sanfordii*	Vernal pools, meadows and seeps, and other seasonally wet habitats (115 to 3,500 feet).	March to May
Slender Orcut grass	*Orcuttia tenuis*	Relatively deep and wet vernal pools (0 to 3,000 feet).	April to June
Sacramento Orcutt grass	*Orcuttia viscida*	Vernal pools (65 to 750 feet).	May

Source: ECORP Consulting, Inc. Biological Resources, Prepared for the Folsom Specific Plan Backbone Infrastructure Project Area. August 2014.

Special-Status Wildlife

Several special-status wildlife species have potential to occur within the project area. The wildlife species include four special-status invertebrates, three special-status amphibians, two special-status reptiles, 13 special-status birds, and six special-status mammals. Table 5 summarizes each type of special-status wildlife in relation to the proposed project.

Table 5
Special-Status Wildlife having Potential to Occur within Project Area

Common Name	Scientific Name	Habitat Description	Approximate Survey Dates
Invertebrates			
Valley elderberry longhorn beetle	*Desmocerus californicus dimorphus*	Elderberry shrubs, typically in riparian habitats (0 feet to 3,000 feet).	-
Vernal pool fairy shrimp	*Branchinecta lynchi*	Vernal pools and other seasonal wetlands in valley and foothill grasslands.	-
Vernal pool tadpole shrimp	*Lepidurus packardi*	Vernal pools and other seasonal wetlands in valley and foothill grasslands.	-
Conservancy fairy shrimp	*Branchinecta conservatio*	Vernal pools and other seasonal wetlands in valley and foothill grasslands.	-
Amphibians			
California tiger salamander	*Ambystoma californiense*	Uses vernal pools, wetlands and adjacent grassland or oak woodland; needs underground refuge, usually ground squirrel or gopher burrows. Uses vernal pools, ponds, and seasonal wetlands for breeding. Largely terrestrial as adults.	March to May
Western spadefoot	*Spea hammondii*	Vernal pools and other seasonal ponds with a minimum 3-week inundation period in valley and foothill grasslands.	March to May
California red-legged frog	*Rana draytonii*	Currently occurs in lowlands or foothills at waters with dense shrubby or emergent riparian vegetation. Larvae require 11 to 20 weeks to transform, sometimes overwintering. Adults must have aestivation habitat to endure summer dry down.	May to November
Reptiles			
Western pond turtle	*Actinemys marmorata*	Forage in ponds, marshes, slow-moving streams, sloughs, and irrigation/drainage ditches; nest in nearby uplands with low, sparse vegetation.	April to October
Giant garter snake	*Thamnophis gigas*	Slow-moving streams, sloughs, ponds, marshes, inundated floodplains, rice fields, and irrigation/drainage ditches on the Central Valley floor with mud bottoms, earthen banks, emergent vegetation, abundant small aquatic prey and absence of low numbers of large predatory fish. Also require upland refugia not subject to flooding during the snake's inactive season.	-
Birds			
White-tailed kite (nesting)	*Elanus leucurus*	Woodland, grassland	March to June
Northern harrier (nesting)	*Circus cyaneus*	Marsh, grassland	April to September

(Continued on next page)

Table 5
Special-Status Wildlife having Potential to Occur within Project Area

Common Name	Scientific Name	Habitat Description	Approximate Survey Dates
Golden eagle	*Aquila chrysaetos*	Forages in large open areas of foothill shrub and grassland habitats and occasionally croplands. Does not nest in the Central Valley.	Nests: February to August Winter: October to February
Swainson's hawk (nesting)	*Buteo swainsoni*	Forages in grasslands and agricultural lands; nests in riparian and isolated trees.	March to August
Southern bald eagle (nesting and wintering)	*Haliaeetus leucocephalus leucocephalus*	Forage primarily in large inland fish-bearing waters with adjacent large trees or snags; occasionally in uplands with abundant rabbits, other small mammals, or carrion. Often roosts communally in winter.	-
California black rail	*Laterallis jamaicensis conturniculus*	Freshwater marshes, wet meadows, and shallow margins of saltwater marshes. Requires consistent water depth of 1 inch and dense vegetation to nest.	Year-round
Modesto song sparrow	*Melospiza melodia*	Nests and forages primarily in emergent marsh, riparian scrub, and early successional riparian forest habitats in the north-central portion of the Central Valley; infrequently in mature riparian forest and sparsely vegetated ditches and levees.	Year Round
Burrowing owl (burrow sites)	*Athene cunicularia*	Grassland	March to August
Purple martin (nesting)	*Progne subis*	Nests in tree cavities, bridges, utility poles, lava tubes, and buildings. Forages in foothill and low mountain oak and riparian woodlands; less frequently in coniferous forests and open or developed habitats.	September to April
Loggerhead shrike	*Lanius ludovicianus*	Grassland, woodland	March to July
Bank swallow (nesting)	*Riparia riparia*	Stream banks	May to July
Grasshopper sparrow	*Ammodramus savannarum*	Grassland	May to July
Tricolored blackbird (nesting)	*Agelaius tricolor*	Marsh, grassland	April to June
Mammals			
Pallid bat	*Anthrozous pallidus*	Deserts, grasslands, shrublands, woodlands, and forests. Most common in open, dry habitats. Roosts in rock crevices, oak hollows, bridges, or buildings.	April to September
Ringtail	*Bassariscus astutus*	Large acreages of oak woodland, riparian and other dense brush habitats with rock recesses or hollow snags for cover.	-

(Continued on next page)

Table 5
Special-Status Wildlife having Potential to Occur within Project Area

Common Name	Scientific Name	Habitat Description	Approximate Survey Dates
Townsend's big-eared bat	*Corymorhinus townsendii*	Typically roosts in caves; however, colonies of more than 100 individuals occasionally nest in buildings or bridges. Forages in all habitats except alpine and subalpine, though most commonly in mesic forests and woodlands.	April to September
Western mastiff bat	*Eumops perotis californicus*	Typically roost in high cliffs and rock creviced in small colonies of more than 100 individuals. Forages in a variety of grassland, shrub and wooded habitats including riparian and urban areas, though most commonly in open, arid lands.	-
Western red bat	*Lasiurus blossevilli*	Roosts primarily in tree foliage, especially in cottonwood, sycamore, and other riparian trees or orchards. Prefers habitat edges and mosaics with trees that are protected from above and open below with open areas for foraging, including grasslands, shrublands, and open woodlands.	April to September
American badger	*Taxidea taxus*	Inhabits open uncultivated annual grasslands and in drier open shrub, forest and herbaceous habitats with friable soils.	Any season

Source: ECORP Consulting, Inc. Biological Resources, Prepared for the Folsom Specific Plan Backbone Infrastructure Project Area. August 2014.

Special-status fish species are not known or do not have potential to occur within the Alder Creek watershed. Anadromous Chinook salmon (*Oncorhynchus tshawytscha*) and steelhead (*Oncorhynchus mykiss*) use the lower American River below Nimbus Dam for spawning and rearing. Both of the aforementioned special-status fish species may have historically used Alder Creek prior to the construction of Nimbus Dam; however, the natural pre-development flow patterns that were more ephemeral and intermittent likely limited habitat values for these species.

Special-Status Invertebrates

The four special-status invertebrates with potential to occur within the project area include valley elderberry longhorn beetle, vernal pool fairy shrimp, vernal pool tadpole shrimp, and conservancy fairy shrimp.

Six elderberry shrubs with 26 stems greater than one inch in diameter at ground level, which provide potential habitat for valley elderberry longhorn beetle, have been documented throughout the project area south of US 50. A beetle exit hole was identified on one of the 26 shrubs. In addition, the project site crossing US 50 has not been surveyed for elderberry shrubs, and the shrubs may occur in the unsurveyed areas. It should be noted that VELB is federally listed as threatened.

The project site south of US 50 contains vernal pools, seasonal wetlands, and seasonal wetland swales that are considered potential habitat for vernal pool fairy shrimp, conservancy fairy shrimp, and vernal pool tadpole shrimp. Vernal pool tadpole shrimp and conservancy fairy shrimp are federally-listed as endangered. Vernal pool fairy shrimp is federally-listed as threatened.

Protocol-level surveys (two wet-seasons or consecutive wet- and dry-season surveys) have been conducted for all properties within the project site south of US 50 except for the Javanifard and Sarghami and Folsom Heights properties; however, the U.S. Fish and Wildlife Service (USFWS) determined in the Biological Opinion for the FPASP area that the Folsom Heights property did not contain suitable habitat for the aforementioned species. Vernal pool tadpole shrimp, vernal pool fairy shrimp, and vernal pool crustaceans (federally listed) may occur on the Javanifard and Sarghami properties.

Special-Status Amphibians

California tiger salamander is not expected to occur within the project area south of US 50. Although potentially suitable breeding habitat exists in some vernal pools, seasonal wetlands, ponds, and upland grasses on site, California tiger salamander have not been detected in Sacramento County north of the Cosumnes River. In a survey transect that extended along the west side of Sacramento Valley from Shasta County to Solano County, California tiger salamanders were recorded only at the Jepson Prairie in Solano County. Surveys of vernal pool habitats on and near the project area have not incidentally detected California tiger salamander. Given that the closest known population is 15 miles south of the project site and the lack of known populations in the region, the likelihood of California tiger salamander occurring within the project area is low.

The project site south of US 50 contains vernal pools, seasonal wetlands, and seasonal wetland swales that are considered potential habitat for western spadefoot toad. Western spadefoot toad is a California species of special concern. Western spadefoot toad surveys have not been conducted throughout the entire project site south of US 50. The western spadefoot toad are known to occur in Mather Regional Park, more than five miles from the project site. Focused surveys for western spadefoot toad were conducted in April 2006 on approximately 40 percent of the project site and were not detected. The aquatic habitats surveyed were determined to be unsuitable for western spadefoot toad due to the abundance of predatory bullfrogs. Although habitat conditions may not be suitable for successful reproduction of western spadefoot toad, the species may be present in vernal pools or other seasonal wetlands within the project site.

California red-legged frogs currently occur in lowlands or foothills near waters with dense shrubby or emergent riparian vegetation. California red-legged frog larvae require 11 to 20 weeks to transform and adults must have aestivation habitat to endure dry summers. The nearest reproducing population of California red-legged frogs is 30 miles east near Pollock Pines. California red-legged frogs have low potential to occur on the project site south of US 50 and are presumed extirpated from the valley floor.

Special-Status Reptiles

Suitable habitat for western pond turtle occurs in two large ponds within the oak woodland community in the west-central portion of the project site and in perennial portions of Alder Creek and tributaries. Implementation of the project would fill approximately 0.9 acres of US Army Corps of Engineers (USACE) jurisdictional ponds and 0.2 acres of non-jurisdictional ponds within the project area.

Giant garter snake occur in low-moving streams, sloughs, ponds, marshes, inundated floodplains, rice fields, and irrigation/drainage ditches on the Central Valley floor with mud bottoms. In addition, giant garter snakes require upland refugia not subject to flooding during the snake's inactive season. According to ECORP, the project site does not contain suitable habitat for giant garter snake.

Special-Status Raptors and other Raptors and Migratory Birds

Swainson's hawk, a species state-listed as threatened, is one of several raptors that may nest and/or forage within the project area. All raptors and their nests are protected under Section 3503.5 of the California Fish and Game Code. Common raptors that could nest within the project area include Cooper's hawk, American kestrel, red-tailed hawk, red-shouldered hawk, western screech-owl, great horned owl, and barn owl.

Implementation of the south of US 50 improvements could have an adverse effect on nesting and foraging habitat for raptors. Tall trees within open woodlands, isolated trees, and trees within riparian corridors are generally considered potential nesting habitat. Approximately 102.78 acres of existing oak woodland on-site that is considered potential nesting habitat for Swainson's hawk and other tree-nesting raptors would be removed (Figure 4.3-2 Oak Woodland Impacts). Blue oak woodland within the off-site elements has not been quantified; however, there is potential for blue oak woodland to occur within these areas. Project implementation (e.g. tree removal, construction grading) could result in impacts to active nests.

The 563.252 acres of grassland habitat present within the south of US 50 Backbone area are considered foraging habitat for Swainson's hawk, and potential nesting habitat for burrowing owl and northern harrier. The grading, paving, and other ground disturbances in the project footprint could indirectly affect nesting and foraging raptors by reducing the population of the small mammal prey base of many raptors over the entire project area through conversion of natural vegetation cover. Large raptors generally require large areas of suitable foraging habitat. Implementation of the project would result in permanent impacts (installation of roads and other infrastructure) and temporary impacts (grading around roads and infrastructure) to grassland habitat present within the on-site elements of the project area. Of the 563.252 acres of habitat present in the on-site areas, only a portion would be permanently impacted. A determination of permanent versus temporary impacts will be calculated once grading plans are finalized.

As a consequence of direct loss of nesting and foraging habitat and indirect effects to nest success and foraging habitat quality, implementation of the project could eventually lead to the permanent displacement of some raptors from the project area.

Nesting habitat for tricolored blackbird is found in riparian habitat and blackberry brambles along Alder Creek and adjacent to several ponds within the project site south of US 50. Tricolored blackbirds nest in colonies of 100s to 10,000s of individuals. Nesting colonies will often occur in the same location over many years, but colonies may also shift locations if nest failure occurs. An abundant insect source near the nesting colony is an important habitat component and nesting colonies are often associated with dairies, feedlots, or wastewater treatment ponds. Although tricolored blackbirds are not known to nest on the project area and suitable nesting and foraging habitat is limited, several tricolored blackbird colonies are known to exist within five miles of the project area.

The project area also provides potential nesting habitat for other migratory birds and special-status species such as loggerhead shrike, grasshopper sparrow, and Modesto song sparrow. Individuals of these special-status species, and some additional migratory birds, may nest in open woodland, grassland, or riparian habitats within the project area.

Special-Status Mammals

Six special-status mammals have the potential to occur within the project area, including pallid bat, ringtail, Townsend's big-eared bat, western mastiff bat, western red bat, and American badger. The aforementioned bat species may forage over open grassland and woodland areas, as well as riparian areas. Roosting habitat is typically a limiting factor to bat distribution.

American badger is a wide-ranging species that uses grassland and oak woodland habitats. American badger has been documented adjacent to the project area, and nearly the entire project site provides suitable habitat. As such, American badger may exist within the project area south of US 50.

Ringtail is a fully protected species under the CDFW Code. Ringtail is a wide-ranging species that prefers large acreages of oak woodland, riparian, and other dense brush habitats with rock recesses or hollow snags for cover. The project site provides marginal habitat quality due to the open understory, proximity to urban Folsom, and lack of connectivity to other riparian forest or oak woodland habitats.

a. <u>North of US 50 Water Improvements</u>

The existing City water facilities have the capacity to serve an initial demand of up to two MGD. The proposed project includes two program-level improvements north of US 50. A new booster pump station will eventually be installed at the existing WTP for the ultimate project demand (8.8 MGD). In addition, a water transmission pipeline will eventually be installed from East Bidwell Street to the WTP.

The locations of the transmission pipeline and the booster pump station have not been finalized. Based upon preliminary engineering, the following conceptual details have been provided. The proposed booster pump station would tentatively be located west of the existing reservoir tanks in the southern portion of the WTP property, which is a developed area. With respect to the proposed water transmission line from the WTP to Iron Point

Road/East Bidwell Street, the preliminary pipeline alignment is anticipated to extend northwest along East Bidwell Street, then north along Oak Avenue Parkway, and eventually west to the WTP (see Figure 8). More specifically, the portion of the alignment from Iron Point Road northwest to Oak Avenue Parkway would be located within the existing disturbed road rights-of-way. Similarly, the portion of the alignment from Oak Avenue Parkway north to Willow Creek Drive would be located within the existing disturbed road right-of-way. From Willow Creek Drive to the WTP, the pipeline would tentatively be located within an existing powerline utility easement. This powerline easement runs through an existing residential community, and includes a paved bike trail with scattered oak trees and other vegetation.

Due to the disturbed nature of the majority of improvement areas, the potential for impacts to biological resources is low. However, because the proposed improvement areas north of US 50 have not been surveyed, this low potential cannot be dismissed until further evaluation is conducted at such a time when precise engineering details are available.

US 50 Crossings

The proposed booster pump station would be located adjacent to Placerville Road and US 50 which is currently undisturbed and adjacent to existing development. Minor vegetation clearance would be required for the pump station. The proposed water lines would be located within roadway rights-of-way in areas surrounded by existing commercial development. Blue oak woodland at the US 50 crossings has not been quantified; however, the potential for blue oak woodland to occur within the sewer line crossing area exists.

The area proposed for development of the sewer line crossing US 50 approximately 0.5 miles east of Prairie City Road contains commercial development north of US 50 and open space south of US 50. The sewer line portion south of US 50 would cross Alder Creek.

Alder Creek is an intermittent to perennial stream that transects the FPASP area from the south-central portion at White Rock Road to the northwest corner at Prairie City Road, flowing generally in a northwesterly direction. Portions of Alder Creek support surface flow all year because flows are supplemented by runoff from adjacent developed areas, but upstream segments of the creek within the project area are intermittent. Intermittent stream channels support flowing water through winter and spring, but dry up by summer.

Nesting and other habitat for tricolored blackbird and other species is found in riparian habitat and blackberry brambles along Alder Creek. Special-status plant and animal species could be present in near Alder Creek.

Implementation of the project, including the US 50 crossing components, would permanently remove approximately 9.2 acres of potential habitat for special-status vernal pool crustaceans and western spadefoot toad, which includes approximately 1.05 acres of vernal pools, 1.3 acres of seasonal wetland, and 6.9 acres of seasonal wetland swale. However, acreage within the elements crossing US 50 is considered assessment level only and has not been verified by the USACE.

South of US 50 Backbone

The backbone system south of US 50 includes four water booster pump stations located throughout the FPASP; three sewer lift stations (the Easton Valley Parkway Lift Station, the Russell Ranch Lift Station, and the Mangini Temporary Lift Station); detention ponds; sewer, water, and drainage pipes; and a roadway network. The Easton Valley lift station would be located in the northwest corner of the FPASP area, and would require installation of an 8-inch sewer line under US 50 via jack-and-bore for purposes of connecting to the existing SRCSD lift station, south of Iron Point Road. The Mangini Temporary Lift Station alternative allows for the development of the upper reaches of the Street A/Oak Avenue sewer shed, independent of the development west of the Alder Creek crossing on Street A. The Mangini Temporary Lift Station would be located in the western portion of the FPASP area, and would require the construction of a temporary lift station at the eastern side of the Alder Creek crossing on Street A in the vicinity of the future high school site. The Mangini alternative would also include multiple forcemains generally aligned north along the eastern edge of the Alder Creek open space to Easton Valley Parkway and then west along Easton Valley Parkway to the Easton Valley Lift Station (or directly to the SRCSD lift station).

Special-Status Plants

Determinate-level presence/absence surveys for special-status plant species have been conducted on all properties within the South of US 50 Backbone except for the Javanifard and Zarghami and Folsom Heights portions. The south of US 50 Backbone infrastructure were surveyed over two seasons per U.S. Fish and Wildlife Guidelines (USFWS 2000). In addition, surveys have been conducted in the off-site elements with the exception of three areas: two north of US 50 and one area just north of the Prairie City Road and White Rock Road intersection in the southwestern corner of the SPA. No special-status plant species were found during any of the focused surveys. The potential occurrence of special-status plant species remains on properties that have not been surveyed, to date.

If special-status plants are found on any of the remaining unsurveyed properties, project development could result in take of individual plants and/or populations. Project development could indirectly affect special-status plants including an increase in pollutants transported by urban runoff and other means, changes to the vegetation composition as a result of changes in land use and management practices, altered hydrology from the construction of adjacent development and roadways, habitat fragmentation, and increased competition with invasive plant species or noxious weeds resulting from habitat fragmentation. Thus, the impacts on special-status plant species are considered potentially significant.

Vernal Pool Invertebrates

Protocol-level surveys (two wet-seasons or consecutive wet- and dry-season surveys) have been conducted for all properties within the south of US 50 Backbone except for the Javanifard and Zarghami and Folsom Heights portions. The USFWS in its Biological

Opinion for the SPA determined that the Folsom Heights property did not contain suitable habitat for these species (USFWS 2014). Vernal pool fairy shrimp have been documented in two locations within the Prairie City Road Business Park property at the northwest corner of the project area during wet-season surveys in 2008-2009. In addition, vernal pool tadpole shrimp have been documented in one vernal pool near White Rock Road. Federally-listed vernal pool crustaceans may also occur in areas of the project area (both on-site and off-site) that have not yet been surveyed.

Implementation of the project, including off-site elements, would permanently impact approximately 9.247 acres of potential habitat for special-status vernal pool crustaceans, which includes approximately 1.05 acres of vernal pools, 1.265 acres of seasonal wetland, and 6.932 acres of seasonal wetland swale. However, wetland types and acreage within the off-site elements is considered assessment-level only and have not been verified by the USACE.

In addition to the direct effects to on-site habitat, suitable habitat off-site may be indirectly affected by project activities. Indirect effects include habitat degradation that could result from degradation of water quality caused by urban runoff, erosion, or siltation; intrusion of humans and domestic animals; and introduction of invasive plant species. In addition, the hydrology of the wetland habitats for vernal pool crustaceans and western spadefoot toad could be altered by grading of the site. All portions of the project area would be subject to contour grading, which could affect wetland hydrology and water quality. Overall site topography would be substantially altered to achieve level ground for development. Construction of new roadways and roadway improvements associated with development of the backbone infrastructure could disrupt or eliminate hydrologic and biological connectivity that is important to support wetlands and associated wildlife species.

Valley Elderberry Longhorn Beetle

The valley elderberry longhorn beetle (VELB) is federally-listed as threatened. Six elderberry shrubs with 26 stems greater than 1.0 inch in diameter at ground level, which provide potential habitat for valley elderberry longhorn beetle have been documented throughout the project area. Stems of 1.0 inch or greater in diameter are considered potential VELB habitat (USFWS 2014). A beetle exit hole was identified on one of these shrubs. In addition, off-site elements have not been surveyed for elderberry shrubs, and they may occur in these unsurveyed areas. Implementation of the project, including off-site elements, could result in the direct or indirect loss of valley elderberry longhorn beetles or their habitat. All six elderberry shrubs will be impacted by project implementation. Removal of elderberry shrubs containing VELB larvae would result in a direct take of a federally threatened species, which would result in a potentially significant impact.

Special-Status Amphibians and Reptiles

Focused surveys for western spadefoot toad were conducted in April 2006 on approximately 40 percent of the SPA and were not detected within these areas (MJM Properties 2006d). The aquatic habitats surveyed were determined to be unsuitable for

western spadefoot toad due to the abundance of predatory bullfrogs. Although habitat conditions may not be suitable for successful reproduction of western spadefoot toad within the survey areas, this species has been documented in Mather Regional Park, approximately 5 miles from the project area. In addition surveys for this species have not been conducted throughout the entire Backbone. Therefore this species has the potential to occur in areas that have not been surveyed within the project area.

Suitable habitat for western pond turtle occurs in two large ponds within the oak woodland community in the west-central portion of the SPA and in perennial portions of Alder Creek and tributaries. Implementation of the project would fill approximately 0.852 acres of USACE jurisdictional ponds and 0.119 of non-jurisdictional ponds within the south of US 50 backbone project area. The majority of the ponds, however, in the western-central portion of the SPA and the perennial portions of Alder Creek and its tributaries, and upland habitats suitable for western pond turtle nesting habitat would not be impacted by the backbone infrastructure.

Special-Status Birds

Although tricolored blackbirds are not known to nest on the project area and suitable nesting and foraging habitat is limited, several tricolored blackbird colonies are known from within 5 miles of the project area (Folsom and USACE 2010). Disturbance during construction could result in nest abandonment and loss of eggs or young if an active tricolored blackbird nesting colony were to be present during ground-disturbing activities.

The project area provides potential nesting habitat for other raptors, migratory birds, and special-status birds such as nesting birds, such as loggerhead shrike, grasshopper sparrow, and Modesto song sparrow. The project's impacts on the aforementioned species are considered potentially significant because construction would require the removal of trees.

Special-Status Mammals

Several special-status bat species have potential to occur within the project area, including pallid bat, Townsend's big-eared bat, western mastiff bat, and western red bat. These species may forage over open grassland and woodland areas, as well as riparian areas. Roosting habitat is typically a limiting factor to bat distribution. Western mastiff bat is unlikely to roost on-site due to habitat preference to use tall cliffs and rocks, which are absent from the site. Western red bat roosts in tree foliage, especially in cottonwoods, sycamore, and other broad-leaved deciduous riparian trees (Folsom and USACE 2010); suitable roosting habitat for western red bat is lacking from the site, as the riparian habitat along Alder Creek mostly consists of willow and blackberry scrub. Several abandoned mine shafts are present throughout the SPA and would be impacted by the backbone infrastructure. It is unknown if the mine shafts provide suitable thermal or structural conditions for roosting bats. However, if the mine shafts are used as a day roost, hibernation roost, or maternity colony roost, implementation of the project could result in injury and mortality of pallid bat, Townsend's big-eared bat, or other common bat species. Day roosts are used throughout the spring and summer and maternity colony roosts can be active from

approximately early April until mid-October. Hibernation roosts may be used from approximately November to early March.

American badger has been documented adjacent to the project area by Matus (Folsom and USACE 2010), and nearly the entire south of US 50 Backbone area provides suitable habitat. It is unknown if the species currently occurs within the project area. Although implementation of the project would result in loss of habitat for American badger, suitable foraging and denning habitat exists in the areas adjacent to the project. Notwithstanding this, should badger burrow on-site within proposed improvement areas prior to construction, individuals could be impacted as a result of the project.

Conclusion

Special-status plant and animal species could be present in the areas discussed above that have not been surveyed. As a result, the proposed project could have a ***potentially significant*** impact to several special-status species and migratory birds, their eggs, and/or young.

Mitigation Measure(s)
The following mitigation measures will reduce the above-identified impacts to a *less-than-significant* level for the reasons set forth below.

Special-Status Plants
Implementation of the below mitigation measure would reduce the proposed project's potential impact during construction to special-status plant species to a *less-than-significant* level by requiring a pre-construction special-status plant survey and consultation with CDFW and USFWS (if required depending on species status) and preparation of a mitigation and monitoring plan if special-status plant species are found on-site.

IV-1. Conduct Special-Status Plant Surveys; Implement Avoidance and Mitigation Measures or Compensatory Mitigation

Determinate-level presence/absence plant surveys have not been conducted for all of the properties within the Backbone and the off-site areas. These areas may support suitable habitat for special status plants. The following measures are should be implemented to mitigate for impacts to special status plant to less-than-significant:

- *The project applicant(s) shall retain a qualified botanist to conduct protocol level special-status plant surveys for the remaining unsurveyed areas within the Backbone and off-site areas. If no special-status plants are found during focused surveys, the botanist shall document the findings in a letter report to USFWS, CDFW and, the City of Folsom, and no further mitigation shall be required.*

- *If special-status plant populations are found, the project applicant(s) shall consult with CDFW and USFWS, as appropriate depending on species status, to determine the appropriate mitigation measures for direct and indirect impacts on any special-status plant population that could occur as a result of project implementation. Mitigation measures may include preserving and enhancing existing populations, creation of off-site populations on project mitigation sites through seed collection or transplantation, and/or restoring or creating suitable habitat in sufficient quantities to achieve no net loss of occupied habitat or individuals.*
- *If potential impacts on special-status plant species are likely, a mitigation and monitoring plan shall be developed before the approval of grading plans or any ground-breaking activity within 250 feet of a special-status plant population. The mitigation plan shall be submitted to the City of Folsom for review and approval. It shall be submitted concurrently to CDFW or USFWS, as appropriate depending on species status, for review and comment. For Federally-listed species, the plan shall require maintaining viable plant populations on-site and shall identify avoidance measures for any existing population(s) to be retained and compensatory measures for any populations directly affected. Possible avoidance measures include fencing populations before construction and exclusion of project activities from the fenced-off areas, and construction monitoring by a qualified botanist to keep construction crews away from the population. The mitigation plan shall also include monitoring and reporting requirements for populations to be preserved on site or protected or enhanced off-site.*
- *If relocation efforts are part of the mitigation plan, the plan shall include details on the methods to be used, including collection, storage, propagation, receptor site preparation, installation, long-term protection and management, monitoring and reporting requirements, and remedial action responsibilities should the initial effort fail to meet long-term monitoring requirements.*
- *If off-site mitigation includes dedication of conservation easements, purchase of mitigation credits or other off-site conservation measures, the details of these measures shall be included in the mitigation plan, including information on responsible parties for long-term management, conservation easement holders, long-term management requirements, and other details, as appropriate to target the preservation on long term viable populations.*

Vernal Pool Invertebrates

Implementation of the below mitigation measure would reduce the proposed project's potential impact during construction to special-status species associated with vernal pools to a *less-than-significant* level by requiring appropriate conservation minimization

measures to be implanted to minimize impacts to special-status species associated with vernal pools.

IV-2. Implement Conditions of the Biological Opinion (BO) for Federally Listed Vernal Pool Invertebrates.

A Biological Opinion (BO) [#81420-2010-F-0620-1] was issued by USFWS for the Folsom Area Specific Plan Project, which includes the proposed backbone infrastructure project. Project construction shall not proceed in areas supporting potential habitat for Federally listed vernal pool invertebrates, or within adequate buffer areas (250 feet or lesser distance deemed sufficiently protective by a qualified biologist with approval from USFWS), until the project applicant(s) have abided by the conditions of the BO (including conservation and minimization measures) intended to be completed before on-site construction.

Valley Elderberry Longhorn Beetle

Implementation of the below mitigation measure would reduce the proposed project's potential impact during construction to valley elderberry longhorn beetle to a *less-than-significant* level by requiring compensation for loss of habitat and implementation of conservation and minimization measures during project implementation.

IV-3. Implement Conditions of the Biological Opinion for Impacts on Valley Elderberry Longhorn Beetle.

A biological opinion [#81420-2010-F-0620-1(BO)] has been issued by USFWS that identifies impacts to 6 elderberry shrubs with 26 stems measuring one inch or larger in diameter at ground level with project implementation. Prior to project implementation, the project applicant(s) shall abide by all pertinent conditions in the BO relating to the proposed construction, including conservation and minimization measures, intended to be completed before on-site construction. As identified in the BO, all impacted shrubs will be removed and transplanted in accordance with the Service's 1999 Conservation Guidelines for the Valley Elderberry Longhorn Beetle to a Service approved conservation bank within the service area of the project or another location approved by the service. In addition, compensatory mitigation for elderberry shrubs that would be removed and transplanted from their current locations shall include purchasing beetle conservation credits at a Service-approved conservation bank within the service area encompassing the project area. Credits will be determined in the amended BO through consultation with USFWS.

The population of valley elderberry longhorn beetles, the general condition of the conservation area, and the condition of the elderberry and associated native plantings in the conservation area must be monitored over a period of either ten consecutive years or for seven years over a 15-year period. A

minimum survival rate of at least 60 percent of the elderberry plants and 60 percent of the associated native plants must be maintained throughout the monitoring period. Within one year of discovering that survival has dropped below 60 percent, the project proponent shall replace failed plantings to bring survival above this level. Detailed information on monitoring success of relocated and planted shrubs and measures to compensate (should success criteria not be met) would be required in the amended BO.

Western Spadefoot Toad

Implementation of the below mitigation measure would reduce the proposed project's potential impact during construction to western spadefoot toad to a *less-than-significant* level.

IV-4. Determinate-level presence/absence western spadefoot toad surveys have not been conducted for all of the properties within the Backbone and the off-site areas. These areas may support suitable habitat for western spadefoot toad. The following measures should be implemented to mitigate the potential impacts to western spadefoot toad to less than significant:

- *The project applicant(s), shall retain a qualified biologist to conduct protocol-level western spadefoot toad surveys for the remaining unsurveyed areas within the Backbone and off-site areas. If no western spadefoot toad are found during focused surveys, the biologist shall document the findings in a letter report to CDFW and the City of Folsom, and no further mitigation shall be required.*
- *If western spadefoot toad populations are found, the project applicant(s) shall consult with CDFW, to determine the appropriate mitigation measures for direct impacts to the western spadefoot toad population that could occur as a result of project implementation. Mitigation measures may include relocation of aquatic larvae, construction monitoring, or preserving and enhancing existing populations.*

Western Pond Turtle

The vast majority of suitable western pond turtle habitat within the project will not be impacted. However, a small portion of the aquatic habitat that may support pond turtles is proposed to be impacted by the project. Therefore, the following measure will be implemented to mitigate the impacts to western pond turtles to *less than significant*.

IV-5. The project applicant(s), shall retain a qualified biologist to conduct preconstruction western pond turtle survey within 48 hours of the initiation of construction activity within the ponds. If no western pond turtles are found during the preconstruction survey, the biologist shall document the findings in a letter report to CDFW and the City of Folsom, and no further mitigation shall be required. If western pond turtles are found, the qualified

biologist shall capture and relocate the turtles to a suitable preserved location in the vicinity of the project.

Swainson's Hawk

The following mitigation measures will mitigate the impacts to Swainson's hawk foraging and nesting habitat to a *less-than-significant* level.

IV-6(a). Swainson's Hawk Nesting Habitat

To mitigate impacts on Swainson's hawk a qualified biologist shall be retained to conduct preconstruction surveys and to identify active nests on and within 0.5 mile of the project area. The surveys shall be conducted before the approval of grading and/or improvement plans (as applicable) and no less than 14 days and no more than 30 days before the beginning of construction. To the extent feasible, guidelines provided in Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in the Central Valley (Swainson's Hawk Technical Advisory Committee 2000) shall be followed for surveys for Swainson's hawk. If no nests are found, no further mitigation is required.

If active nests are found, impacts on nesting Swainson's hawks shall be avoided by establishing appropriate buffers around the nests. No project activity shall commence within the buffer area until the young have fledged, the nest is no longer active, or until a qualified biologist has determined in coordination with CDFW that reducing the buffer would not result in nest abandonment. CDFW guidelines recommend implementation of 0.25- or 0.5-mile-wide buffers, but the size of the buffer may be adjusted if a qualified biologist and the City, in consultation with CDFW, determine that such an adjustment would not be likely to adversely affect the nest. Monitoring of the nest by a qualified biologist during and after construction activities will be required if the activity has potential to adversely affect the nest.

IV-6(b). Swainson's Hawk Foraging Habitat

To mitigate for the loss of Swainson's hawk foraging habitat, the project applicant(s) shall identify permanent impacts to foraging habitat and prepare and implement a Swainson's hawk mitigation plan including, but not limited to the requirements described below.

Before the approval of grading and improvement plans or before any ground-disturbing activities, whichever occurs first, the project applicant(s) shall preserve, to the satisfaction of the City, suitable Swainson's hawk foraging habitat to ensure 1:1 mitigation of habitat value for Swainson's hawk foraging habitat that is permanently lost as a result of the project, as determined by the City after consultation with CDFW and a qualified biologist.

The 1:1 habitat value shall be based on Swainson's hawk nesting distribution and an assessment of habitat quality, availability, and use within the City's planning area, or Sacramento County jurisdiction. The mitigation ratio shall be consistent with the 1994 DFG Swainson's Hawk Guidelines included in the Staff Report Regarding Mitigation for Impacts to Swainson's Hawks (Buteo swainsoni) in the Central Valley of California. Such mitigation shall be accomplished through either the transfer of fee title or perpetual conservation easement. The mitigation land shall be located within the known foraging area and within Sacramento County. The City after consultation with CDFW, will determine the appropriateness of the mitigation land.

The project applicant(s) shall transfer said Swainson's hawk mitigation land, through either conservation easement or fee title, to a third-party, nonprofit conservation organization (Conservation Operator), with the City and CDFW named as third-party beneficiaries. The Conservation Operator shall be a qualified conservation easement land manager that manages land as its primary function. Additionally, the Conservation Operator shall be a tax-exempt nonprofit conservation organization that meets the criteria of Civil Code Section 815.3(a) and shall be selected or approved by the City or County, after consultation with CDFW. The City, or County, after consultation with CDFW and the Conservation Operator, shall approve the content and form of the conservation easement. The City, or County, CDFW, and the Conservation Operator shall each have the power to enforce the terms of the conservation easement. The Conservation Operator shall monitor the easement in perpetuity to assure compliance with the terms of the easement.

The project applicant(s), after consultation with the City, CDFW, and the Conservation Operator, shall establish an endowment or some other financial mechanism that is sufficient to fund in perpetuity the operation, maintenance, management, and enforcement of the conservation easement. If an endowment is used, either the endowment funds shall be submitted to the City for impacts on lands within the City's jurisdiction to an appropriate third-party nonprofit conservation agency, or they shall be submitted directly to the third-party nonprofit conservation agency in exchange for an agreement to manage and maintain the lands in perpetuity. The Conservation Operator shall not sell, lease, or transfer any interest of any conservation easement or mitigation land it acquires without prior written approval of the City and CDFW. Mitigation lands established or acquired for impacts incurred at the off-site elements shall require approval from Sacramento County prior to sale or transfer of mitigation lands or conservation easement.

If the Conservation Operator ceases to exist, the duty to hold, administer, manage, maintain, and enforce the interest shall be transferred to another

entity acceptable to the City and CDFW. The City Planning Department shall ensure that mitigation habitat established for impacts on habitat within the City's planning area is properly established and is functioning as habitat by conducting regular monitoring of the mitigation site(s) for the first 10 years after establishment of the easement. Sacramento County shall monitor habitat and ensure success for impacts on habitat at the off-site detention basin.

Tricolored Blackbird

The following measure will mitigate the impacts to tricolored blackbirds to a *less-than-significant* level.

IV-7. *A qualified biologist shall conduct a preconstruction survey for any project activity that would occur during the tricolored blackbird's nesting season (March 1–August 31). The preconstruction survey shall be conducted before any activity occurring within 500 feet of suitable nesting habitat, including freshwater marsh and areas of riparian scrub vegetation. The survey shall be conducted within 14 days before project activity begins.*

If no tricolored blackbird colony is present, no further mitigation is required. If a colony is found, the qualified biologist shall establish a buffer around the nesting colony. No project activity shall commence within the buffer area until a qualified biologist confirms that the colony is no longer active. The size of the buffer shall be determined in consultation with CDFW. Buffer size is anticipated to range from 100 to 500 feet, depending on the nature of the project activity, the extent of existing disturbance in the area, and other relevant circumstances.

Nesting Raptors

The following measure will mitigate the impacts to nesting raptors to a *less-than-significant* level.

IV-8. *To mitigate impacts on nesting raptors a qualified biologist shall be retained to conduct preconstruction surveys and to identify active nests and occupied burrows on and within 0.5 mile of the project area. The surveys shall be conducted before the approval of grading and/or improvement plans (as applicable) and no less than 14 days and no more than 30 days before the beginning of construction.*

If active nests are found, impacts on nesting raptors shall be avoided by establishing appropriate buffers around the nests. No project activity shall commence within the buffer area until the young have fledged, the nest is no longer active, or until a qualified biologist has determined in coordination with CDFW that reducing the buffer would not result in nest abandonment. The buffer may be adjusted if a qualified biologist and the City, in consultation with CDFW, determine that such an adjustment would

not be likely to adversely affect the nest. Monitoring of the nest by a qualified biologist during and after construction activities will be required if the activity has potential to adversely affect the nest.

If active burrowing owl burrows are found, a mitigation plan shall be submitted to the City for review and approval before any ground-disturbing activities. The City shall consult with CDFW. The mitigation plan may consist of installation of one-way doors on all burrows to allow owls to exit, but not reenter, and construction of artificial burrows within the project vicinity, as needed; however, burrow owl exclusions may only be used if a qualified biologist verifies that the burrow does not contain eggs or dependent young. If active burrows contain eggs and/or young, no construction shall occur within 200-500 meters (depending on level of disturbance (CDFW 2012)) of the burrow until young have fledged. Once it is confirmed that there are no owls inside burrows, these burrows may be collapsed.

Other Nesting Special Status Birds and Migratory Birds

The following measure will be implemented to mitigate the impacts to nesting special-status birds to a *less-than-significant* level.

IV-9. *A qualified biologist shall conduct a preconstruction survey for any project activity that would occur in suitable nesting habitat during the avian nesting season (approximately March 1–August 31). The preconstruction survey shall be conducted before any activity occurring within 100 feet of suitable nesting habitat. The survey shall be conducted within 14 days before project activity begins.*

If no active special-status or other migratory bird nests are present, no further mitigation is required. If an active nest is found, the qualified biologist shall establish a buffer around the nest. No project activity shall commence within the buffer area until a qualified biologist confirms that the nest is no longer active. The size of the buffer shall be determined in consultation with CDFW. Buffer size is anticipated to range from 50 to 100 feet, depending on the nature of the project activity, the extent of existing disturbance in the area, and other relevant circumstances.

Special-Status Bats

Implementation of the following mitigation measure would reduce the proposed project's potential impact during construction to special-status bat species to a *less-than-significant* level by avoiding impacts during roosting through surveys and exclusion efforts.

IV-10. *The project applicant(s) shall retain a qualified biologist to conduct surveys for roosting bats. Surveys shall be conducted in the fall to determine if the mine shafts are used as a hibernaculum and in spring and/or summer to determine if it is used as a maternity or day roost. Surveys shall consist of evening emergence surveys to note the presence or absence of bats and*

could consist of visual surveys at the time of emergence. If evidence of bat use is observed, the number and species of bats using the roost shall be determined. Bat detectors may be used to supplement survey efforts. If no bat roosts are found, then no further study shall be required.

If roosts of pallid bat or Townsend's big-eared bats are determined to be present and must be removed, the bats shall be excluded from the roosting site before the mine shaft is removed. A mitigation program addressing compensation, exclusion methods, and roost removal procedures shall be developed in consultation with CDFW before implementation. Exclusion methods may include use of one-way doors at roost entrances (bats may leave but not reenter), or sealing roost entrances when the site can be confirmed to contain no bats. Exclusion efforts may be restricted during periods of sensitive activity (e.g., during hibernation or while females in maternity colonies are nursing young). The loss of each roost (if any) will be replaced in consultation with CDFW and may include construction and installation of bat boxes suitable to the bat species and colony size excluded from the original roosting site. Roost replacement will be implemented before bats are excluded from the original roost sites. Once the replacement roosts are constructed and it is confirmed that bats are not present in the original roost site, the mine shaft may be removed.

American Badger

Implementation of the following mitigation measure would reduce the proposed project's potential impact during construction to American badger to a *less-than-significant* level.

IV-11. The project applicant(s) shall retain a qualified biologist to conduct preconstruction American badger burrow surveys within 48 hours of the initiation of construction activity. If no American badger burrows are found during the preconstruction survey, the biologist shall document the findings in a letter report to CDFW and the City of Folsom, and no further mitigation shall be required. If potential American badger burrows are found, the qualified biologist shall consult with CDFW to determine appropriate measures.

b. Riparian vegetation functions to control water temperature, regulate nutrient supply, stabilize banks, control the rate of runoff, provide wildlife habitat, control the release of organic material into streams from surrounding land, control the release of woody debris which functions as habitat and slow nutrient release, and provide protection for aquatic organisms.

North of US 50 Water Improvements

The proposed project includes two program-level improvements north of US 50. A new booster pump station will eventually be installed at the existing WTP for the ultimate project demand (8.8 MGD). In addition, a water transmission pipeline will eventually be

installed from East Bidwell Street to the WTP. The transmission pipeline would extend north along East Bidwell Street, north along Oak Avenue Parkway, and eventually west to the WTP.

The proposed booster pump station would be located west of the existing reservoir tanks in the southern portion of the WTP property. The booster pump would be located in a highly disturbed area that has been previously disturbed by development of the WTP. Trees are not anticipated to be disturbed for the booster pump station.

The location of the transmission pipeline to be constructed for ultimate demand has not been finalized. However, the pipeline would likely be located beneath roadway rights-of-way in areas surrounded by existing development. Due to the developed nature of the project site north of US 50, the potential to result in a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the CDFW or USFWS, is highly unlikely.

US 50 Crossings

The proposed booster pump station would be located adjacent to Placerville Road and US 50. The proposed water lines would be located beneath roadway rights-of-way in an area surrounded by existing commercial development. Riparian habitat does not exist near the proposed water line crossing. Other sensitive natural communities are unlikely to be inhabited by special-status species due to the proximity to US 50 and Placerville Road and the surrounding commercial development north of US 50. Due to the developed nature of the water line crossing, the potential to result in a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the CDFW or USFWS, is highly unlikely.

The area proposed for development of the sewer line crossing US 50 approximately 0.5 miles east of Prairie City Road contains commercial development north of US 50 and open space south of US 50. The sewer line portion south of US 50 would cross Alder Creek. Oak woodland and potential riparian habitat exists near the proposed sewer crossing south of US 50. Due to the habitat types found in the sewer line area just south of US 50, the impact to on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the CDFW or USFWS, is potentially significant.

South of US 50 Backbone

Riparian habitat exists on the proposed project site south of US 50 and is mainly characterized by dense monocultures of Himalayan blackberry (*Rubus discolor*) and scattered patches of riparian woodland. Hydrophytic plant species (i.e., plants adapted to grow in water), such as cattail (*Typha* sp.), dense sedge (*Carex densa*), slender rush (*Juncus tenuis*), hardstem bulrush (*Schoenoplectus acutus*), and dallis grass, occur within the Ordinary High Water Mark (OHWM) of the drainage channels within the project area. Vegetation cover becomes denser in flatter portions of the drainages where the channels

are wide and relatively shallow. Riparian vegetation occurs within the OHWM and along the banks of Alder Creek. Much of the riparian habitat is characterized by dense monocultures of Himalayan blackberry (*Rubus armeniacus*) and would best be described as blackberry scrub. Scattered patches of riparian woodland exist on-site that include typical riparian species such as black willow (*Salix goodingii*), arroyo willow (*Salix lasiolepis*), purpletop vervain (*Verbena bonariensis*), and tall flatsedge (*Cyperus eragrostis*).

The project area may also support valley needlegrass grassland, a community identified as sensitive by CDFW and tracked in the California Natural Diversity Database (CNDDB). Although plant communities in the project area were mapped by ECORP Consulting, valley needlegrass grassland blends in with annual grassland and often occurs as small patches in large expanses of annual grassland. As such, needlegrass grassland is easily overlooked unless someone is specifically searching for the grass. Valley needlegrass grassland has been identified on several properties within the FPASP area, but has not been quantified within the project area. If present, valley needlegrass grassland could be removed as a result of project implementation. The loss and degradation of valley needlegrass grassland that would occur with project implementation constitutes an adverse effect on a sensitive natural community regulated by CDFW under Section 1602 of the CDFW Code.

Conclusion

The US 50 crossings could result in potentially significant impacts to riparian or other sensitive natural communities. The loss of valley needlegrass grassland would be an adverse effect on a sensitive natural community. As a result, the project could result in a ***potentially significant*** impact related to riparian habitat and sensitive communities.

Mitigation Measure(s)

Implementation of the following mitigation measures would reduce impacts to riparian habitat and valley needlegrass grassland habitat associated with project construction to a *less-than-significant* level by requiring appropriate compensation for riparian habitat, and if necessary, valley needlegrass grassland habitat.

IV-12. Implement Section 1602 Master Streambed Alteration Agreement

The project applicant(s) shall amend, if necessary, and implement the original Section 1602 Master Streambed Alteration Agreement received from CDFW for all construction activities that would occur in the bed and bank of Alder Creek and other drainage channels and ponds within SPA. As outlined in the Master agreement, the project applicant(s) shall submit a Subnotification Form (SNF) to CDFW 60 days prior to the commencement of construction to notify CDFW of the project.

Any conditions of issuance of the Master Streambed Alteration Agreement shall be implemented as part of project construction activities that

adversely affect the bed and bank and riparian habitat associated with Alder Creek and other drainage channels and ponds that are within the project area that is subject to CDFW jurisdiction. The agreement shall be executed by the project applicant(s) and CDFW before the approval of any grading or improvement plans or any construction activities in any project phase that could potentially affect the bed and bank of Alder Creek and other on-site or off-site drainage channels under CDFW jurisdiction and their associated freshwater marsh and riparian habitat.

IV-13. Conduct Surveys to Identify and Map Valley Needlegrass Grassland; Implement Avoidance and Minimization Measures or Compensatory Mitigation, if necessary

The project applicant(s) shall retain a qualified botanist to conduct preconstruction surveys to determine if valley needlegrass grassland is present within the project area. This could be done concurrently with any special-status plant surveys conducted on-site as special-status plant surveys are floristic in nature, i.e. require that all species encountered be identified. If valley needlegrass grassland is not found within the project area, the botanist shall document the findings in a letter report to the City of Folsom, and no further mitigation shall be required.

If valley needlegrass grassland is found within the project area, the location and extent of the community shall be mapped and the acreage of this community type, if any, that would be removed by project implementation shall be calculated. The project applicant(s) shall consult with CDFW and the City of Folsom to determine appropriate mitigation for removal of valley needlegrass grassland resulting from project implementation. Mitigation measures may include establishment of valley needlegrass grassland within project's open space areas currently characterized by annual grassland, establishment of valley needlegrass grassland off-site, or preservation and enhancement of existing valley needlegrass grassland either on or off the project area.

c. Wetlands or seasonal wetlands generally denote areas where the soil is seasonally saturated and/or inundated by fresh water for a significant portion of the wet season, and then seasonally dry during the dry season. To be classified as "wetland," the duration of saturation and/or inundation must be long enough to cause the soils and vegetation to become altered and adapted to the wetland conditions. Varying degrees of pooling or ponding, and saturation produce different soil and vegetative responses. Such soil and vegetative clues, as well as hydrological features, are used to define the wetland type. Seasonal wetlands typically take the form of shallow depressions and swales that may be intermixed with a variety of upland habitat types. Seasonal wetlands fall under the jurisdiction of the USACE.

North of US 50 Water Improvements

The proposed project includes two program-level improvements north of US 50. A new booster pump will eventually be installed at the existing WTP for the ultimate project demand (8.8 MGD). In addition, a water transmission pipeline will eventually be installed from East Bidwell Street to the WTP. The transmission pipeline would extend north along East Bidwell Street, north along Oak Avenue Parkway, and eventually west to the WTP.

The proposed booster pump station would tentatively be located west of the existing reservoir tanks in the southern portion of the WTP property. The booster pump station would be located in a highly disturbed area that has been previously disturbed by development of the WTP.

The location of the transmission pipeline to be constructed for ultimate demand has not been finalized. However, the pipeline would likely be located beneath roadway rights-of-way in areas surrounded by existing development. Wetlands do not exist in the area proposed for development north of US 50. As such, the potential to result in a substantial adverse effect on federally protected wetlands is highly unlikely.

US 50 Crossings

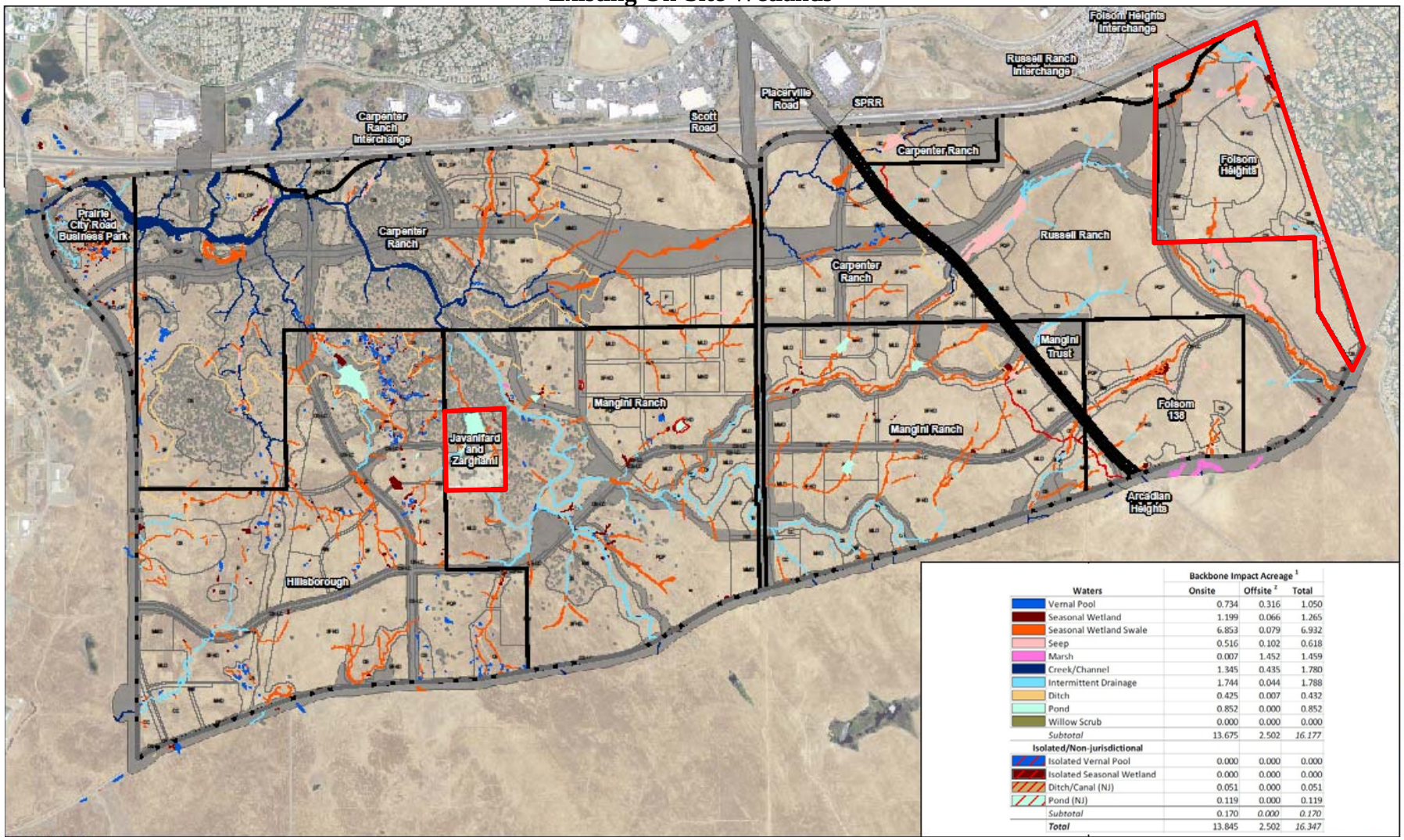
The area proposed for development of the water line crossing near East Bidwell Street and US 50 contains industrial and commercial development north of US 50. The proposed water lines would be located in existing roadway rights-of-way and would not impact wetlands. The proposed booster pump station would be located adjacent to US 50 just west of Placerville Road. Wetlands do not exist near the proposed booster pump location.

The area proposed for installation of the sewer line crossing US 50, approximately 0.5 miles east of Prairie City Road, contains commercial development north of US 50 and open space south of US 50. The proposed sewer line near the future Easton Valley Parkway, south of US 50, would cross a small portion of Alder Creek, the construction of which could result in adverse impacts to jurisdictional waters.

South of US 50 Backbone

Implementation of the south of US 50 backbone improvements would result in direct impacts from the loss of waters of the U.S. resulting from the placement of fill material into approximately 13.675 acres of federally jurisdictional waters of the U.S. on-site and approximately 2.502 acres off-site, including wetlands (see Figure 15 below for an overview of the waters found south of US 50). Waters of the U.S. (both verified and assessed) that would be filled consist of 1.050 acres of vernal pools, 1.265 acres of seasonal wetland, 6.932 acres of seasonal wetland swale, 1.459 acre of freshwater marsh, 0.618 acres of freshwater seep, 0.852 acres of pond, 1.780 acres of creek/channel, 1.788 acres of intermittent drainage channel, and 0.432 acres of ditches. In addition, 0.17-acre of waters that USACE determined to be non-jurisdictional would also be filled by the project. The non-jurisdictional waters impacted consist of 0.051-acre of ditch and 0.119-acre of pond.

Figure 15
Existing On-Site Wetlands



Waters	Backbone Impact Acreage [1] Onsite	Offsite [2]	Total
Vernal Pool	0.734	0.316	1.050
Seasonal Wetland	1.199	0.066	1.265
Seasonal Wetland Swale	6.853	0.079	6.932
Seep	0.516	0.102	0.618
Marsh	0.007	1.452	1.459
Creek/Channel	1.345	0.435	1.780
Intermittent Drainage	1.744	0.044	1.788
Ditch	0.425	0.007	0.432
Pond	0.852	0.000	0.852
Willow Scrub	0.000	0.000	0.000
Subtotal	13.675	2.502	*16.177*
Isolated/Non-jurisdictional			
Isolated Vernal Pool	0.000	0.000	0.000
Isolated Seasonal Wetland	0.000	0.000	0.000
Ditch/Canal (NJ)	0.051	0.000	0.051
Pond (NJ)	0.119	0.000	0.119
Subtotal	0.170	*0.000*	*0.170*
Total	13.845	2.502	*16.347*

Notes:
Impact calculations are approximate and are based on the best available information to date. The acreage value for each feature has been rounded to the nearest 1/1000 decimal.
[1] All features in the Southern Pacific Railroad (SPRR), Scott Road, and Placerville Road boundaries are calculated as part of the backbone.
[2] Based on assessment level data only.

Though the placement of fill material into these waters does not require a permit from USACE under Section 404 of the CWA, they are considered waters of the State subject to the jurisdiction of the Central Valley RWQCB under the Porter-Cologne Act. The conversion of these waters of the State to uplands from the placement of fill material would result in a complete loss of the functions of the waters of the State.

The loss and degradation of USACE jurisdictional vernal pools and other wetland habitats and other waters of the U.S. (e.g., ponds and drainage channels) that would occur with project implementation constitutes a substantial adverse effect on federally jurisdictional waters of the U.S., including wetlands, as defined by Section 404 of the CWA. Removal of 0.17 acres non USACE jurisdictional wetlands in the project area constitutes an adverse effect on waters of the State subject to Central Valley RWQCB jurisdiction.

Conclusion

For the aforementioned reasons, implementation of the proposed project would have a ***potentially significant*** impact on federally-protected wetlands and waters of the U.S., as defined by Section 404 of the CWA.

Mitigation Measure(s)
Implementation of the following mitigation measure would reduce the proposed project's potential impact to a *less-than-significant* level.

IV-14. *Secure Amended Clean Water Act Section 404 Permit and Section 401 Permit and Implement All Permit Conditions; Ensure No Net Loss of Functions of Wetlands, Other Waters of the U.S., and Waters of the State:*

Before the approval of grading and improvement plans and before any groundbreaking activity associated with each distinct project phase, the project applicant(s) shall amend all necessary permits obtained under Sections 401 and 404 of the CWA or the state's Porter-Cologne Act for the original backbone infrastructure, if necessary. All amended and/or revised permits, regulatory approvals, and permit conditions for effects on wetland habitats shall be secured before implementation of any grading activities within 250 feet of waters of the U.S. or wetland habitats, including waters of the state, that potentially support Federally listed species, or within 100 feet of any other waters of the U.S. or wetland habitats, including waters of the state. The project applicant shall adhere to all conditions outlined in the amended and/or revised permits. The project applicant shall commit to replace, restore, or enhance on a "no net loss" basis (in accordance with USACE and the Central Valley RWQCB) the acreage of all wetlands and other waters of the U.S. that would be removed, lost, and/or degraded with implementation of project plan. Wetland habitat shall be restored, enhanced, and/or replaced at an acreage and location and by methods agreeable to USACE, the Central Valley RWQCB, and the City, as appropriate, depending on agency jurisdiction, and as determined during the Section 401 and Section 404 permitting processes.

As identified in the original Section 404 permit, compensation for the loss of waters of the U.S. shall occur through the purchase of mitigation credits from the Cosumnes Floodplain Mitigation Bank and/or the Toad Hill Mitigation bank at the following compensation to impact ratios for aquatic resources, unless otherwise revised in the amended section 404 permit:

- *For loss of jurisdictional ditches, ponds, and marshes, purchase floodplain mosaic re-establishment credits from the Cosumnes Floodplain Mitigation Bank at a ratio of 1:1;*
- *For loss of creeks/channels and intermittent drainages located in the Lower American River watershed (018020111), purchase floodplain riparian re-establishment credits from the Cosumnes Floodplain Mitigation Bank at a ratio of 2:1;*
- *For loss of creeks/channels and intermittent drainages located in the Upper Cosumnes River (18040013), purchase floodplain riparian re-establishment credits from the Cosumnes Floodplain Mitigation Bank at a ratio of 1:1;*
- *For loss of seasonal wetlands and seasonal wetland swales located in the Lower American River watershed (018020111), purchase floodplain mosaic re-establishment credits from the Cosumnes Floodplain Mitigation Bank at a ratio of 1.3:1;*
- *For loss of seasonal wetlands and seasonal wetland swales located in the Upper Cosumnes River (18040013), purchase floodplain mosaic re-establishment credits from the Cosumnes Floodplain Mitigation Bank at a ratio of 1:1;*
- *For loss of seasonal wetlands and seasonal wetland swales located in the Lower American River watershed (018020111), purchase floodplain mosaic re-establishment credits from the Cosumnes Floodplain Mitigation Bank at a ratio of 4:1;*
- *For loss of seeps located in the Upper Cosumnes River (18040013), purchase floodplain mosaic re-establishment credits from the Cosumnes Floodplain Mitigation Bank at a ratio of 3:1;*
- *For the loss of vernal pools, purchase creation credits from the Toad Hill Mitigation Bank at a ratio of 1:1.*

All mitigation requirements to satisfy the requirements of the City and the Central Valley RWQCB, for impacts on the non-jurisdictional wetlands beyond the jurisdiction of USACE, shall be determined and implemented before grading plans are approved.

An amended Water quality certification pursuant to Section 401 of the CWA will be required before issuance of the record of decision and before issuance of the amended Section 404 permit. Before construction in any areas containing wetland features, the project applicant(s) shall obtain water quality certification for the project. Any measures required as part of the issuance of water quality certification shall be implemented.

d. Migratory corridors are natural areas interspersed with developed areas and are important for animal movement, increasing genetic variation in plant and animal populations, reduction of population fluctuations, and retention of predators of agricultural pests, and for movement of wildlife and plant populations. Wildlife corridors are features that provide connections between two or more areas of habitat that would otherwise be isolated and unusable. Often drainages, creeks, or riparian areas are used by wildlife as movement corridors as these features can provide cover and access across a landscape.

North of US 50 Water Improvements

The proposed booster pump station would likely be located in the southern portion of the WTP property. The booster pumps would be located in a highly disturbed area that has been previously disturbed by development of the WTP.

The location of the transmission pipeline to be constructed for ultimate demand has not been finalized. However, the pipeline would likely be located beneath roadway rights-of-way in areas surrounded by existing development. The area north of US 50 is not a migratory corridor. The WTP is fully enclosed by fencing. The pipeline improvement north of US 50 would be located underground and thus would not prohibit species from crossing the pipeline alignment once completed.

Migratory or wildlife corridors are highly unlikely to exist on the project site north of US 50 due to the developed nature of the site. The aforementioned improvements would not disconnect two or more areas of habitat that would otherwise be isolated and unusable.

US 50 Crossings

As discussed above, the proposed project includes two improvements crossing US 50 near Prairie City Road and East Bidwell Street.

The proposed booster pump station would be relocated adjacent to Placerville Road and US 50. The improvements are proposed to cross US 50 near East Bidwell Street and Prairie City Road. The areas proposed for development north of and crossing US 50 contain existing roadways and existing development. The area proposed for development of the water line crossing near East Bidwell Street and US 50 contains industrial and commercial development north of 50. The area proposed for development of the sewer line crossing US 50 approximately 0.5 miles east of Prairie City Road contains commercial development north of US 50 and open space south of US 50.

Migratory or wildlife corridors are highly unlikely to exist on the project site crossing US 50 due to the developed nature of the site. The aforementioned improvements would not disconnect two or more areas of habitat that would otherwise be isolated and unusable.

South of US 50 Backbone

Alder Creek flows northwesterly from White Rock Road to Prairie City Road within the project site south of US 50. The extent to which the creek corridor is used by wildlife in the area for movement is unknown. However, most of the Alder Creek corridor is not included in the project area. Other drainage features within the project area do not support riparian vegetation cover and therefore do not provide valuable movement corridors. Annual grassland habitat present to the south of the project site south of White Rock Road is currently used as rangeland and would remain undeveloped in the foreseeable future based on zoning under the Sacramento County General Plan. The adjacent open space provides opportunities for wildlife to move around developed areas to preserved open spaces within the FPASP area and to use the Alder Creek corridor to move across the project area.

Areas to the north and east of the project site are already developed and do not provide natural habitat areas for wildlife. Regionally common wildlife species, such as coyote, fox, raccoon, skunk, and possum, are expected to continue to use the Alder Creek corridor after project implementation. Established migratory routes through the project area that are vital for the movement of any resident or migratory fish or wildlife species or population do not exist.

Conclusion

The project site is surrounded by open space, which allows ample room for any migratory species to go around the project site. Native habitat, plant, or animal populations would not be significantly reduced with implementation of the project. Therefore, the project would not interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites, and impacts would be ***less than significant***.

e. According to the City of Folsom Municipal Code Ordinance 2012-03, Tree Protection 17.96.070, protected trees are defined as any native tree with a single perennial stem of 12 inches or larger in circumference measured four and a half feet above the natural grade

North of US 50 Water Improvements

The proposed project includes two program-level improvements north of US 50. A new booster pump station will eventually be installed at the existing WTP for the ultimate project demand (8.8 MGD). In addition, a water transmission pipeline will eventually be installed from East Bidwell Street to the WTP.

The locations of the transmission pipeline and the booster pump station have not been finalized. Based upon preliminary engineering, the following conceptual details have been provided. The proposed booster pump station would tentatively be located west of the existing reservoir tanks in the southern portion of the WTP property, which is a developed area. The preliminary water pipeline alignment is anticipated to extend northwest along

East Bidwell Street, then north along Oak Avenue Parkway, and eventually west to the WTP (see Figure 8). More specifically, the portion of the alignment from Iron Point Road northwest to Oak Avenue Parkway would be located within the existing disturbed road rights-of-way, which are primarily bordered by retail and office uses. The portion of the alignment from Oak Avenue Parkway north to Willow Creek Drive would be located within the existing disturbed road right-of-way, which is bordered by commercial and office uses, a church, and residences. From Willow Creek Drive to the WTP, the pipeline would tentatively be located within an existing powerline utility easement. This powerline easement runs through an existing residential community, and includes a paved bike trail with scattered oak trees and other vegetation.

US 50 Crossings

The proposed booster pump station would be relocated adjacent to Placerville Road and US 50. Oak woodland within the project site crossing US 50 has not been quantified. However, the booster pump station would not require the removal of any trees.

The proposed water lines would be located beneath roadway rights-of-way in an area surrounded by existing commercial development. Oak woodland or other protected trees do not exist near the proposed water line crossing. Due to the developed nature of the water line crossing, the potential to conflict with the tree preservation ordinance is highly unlikely.

The area proposed for development of the sewer line crossing US 50 approximately 0.5 miles east of Prairie City Road contains commercial development north of US 50 and open space south of US 50. The sewer line crossing portion south of US 50 would cross Alder Creek. Oak woodland and other trees exist near the proposed sewer line crossing south of US 50. Due to the habitat types found in the sewer line crossing area just south of US 50, the potential to conflict with the tree preservation ordinance is potentially significant.

South of US 50 Backbone

Implementation of the project would result in the removal or disturbance of approximately 102.780 acres of blue oak woodland habitat located south of US 50. Construction of the project would involve grading, mitigation planting, and road development within and immediately adjacent to the project site's open space areas south of US 50 containing protected oak trees. The aforementioned activities could result in indirect impacts affecting oak tree root systems such as trenching, grading, soil compaction, and placement of fill, which can lead to root damage ultimately resulting in death of the tree. Additional indirect impacts could result from habitat fragmentation that could disturb oak woodland vegetation and reduce habitat values. Due to the habitat types found in the project site south of US 50, the potential to conflict with the tree preservation ordinance is potentially significant.

Conclusion

Removal of blue oak woodland and individual oak trees and other trees meeting minimum diameter at breast height (DBH) criteria would conflict with local ordinances, specifically Folsom Municipal Code Ordinance 2012-03, Tree Protection 17.96.070, as would damage to the root zones of protected trees that leads to eventual death of the trees. Furthermore, blue oak woodland is considered a sensitive natural community by CDFW and California Public Resources Code 21083.4 requires counties to consider the environmental effects of oak woodland conversion. Therefore, a ***potentially significant*** impact would occur.

Mitigation Measure(s)

Implementation of the following mitigation measure from the FPASP Final EIR/EIS (Mitigation Measure 3A.3-5) would reduce the potential impact to blue oak woodland and individual oak trees associated with project construction to a *less-than-significant* level.

South of US 50 Backbone, US 50 Crossings, and North of US 50 Water Improvements

IV-15. *Conduct Tree Survey, Prepare and Implement an Oak Woodland Mitigation Plan, Replace Native Oak Trees Removed, and Implement Measures to Avoid and Minimize Indirect Impacts on Oak Trees and Oak Woodland Habitat Retained On-Site.*

Prior to any ground-disturbing activities, the project applicant shall prepare and submit a site map, arborist report, canopy survey, individual free-standing oak tree survey, and tree preservation program to the City's Community Development Department, subject to review and approval. The individual free-standing oak tree survey shall show trees to be preserved and to be removed consistent with the requirements of Folsom Municipal Code, Chapter 12.16.

Mitigation for impacts to oak woodland habitat shall include:

- *Following ground verification by certified arborist of the oak woodland habitat on-site, preservation of existing oak woodlands*
- *Creation of new oak woodland on-site in pre-approved locations as shown in the Open Space Management Plan. Follow the oak woodland mitigation planting criteria outlined in the Oak Woodland Mitigation Planting Criteria contained in the FPASP.*
- *Preserve and protect existing off-site oak woodland habitat. Existing, unprotected oak woodland habitat within Sacramento and El Dorado Counties may be secured and placed under conservation easement in lieu of onsite mitigation measures if necessary. The off-site locations would be managed as oak woodland habitat in perpetuity.*
- *Create oak woodlands off site. Plant a combination of blue oak acorns, seedlings, and trees at off-site location(s). Off-site creation*

shall follow the same guidelines as outlined in the Mitigation Planting Criteria for on-site creation. Planted areas shall be placed under conservation easement and managed as oak woodland habitat in perpetuity.

- *The oak woodland mitigation plan prepared by the City's Public Works Department shall include a maintenance and monitoring program for any replacement trees. The program shall include monitoring and reporting requirements, schedule, and success criteria. Replacement oak trees shall be maintained and monitored for a time period consistent with the provisions of the FPASP.*

The City's Public Works Department, for areas containing individual trees that will be impacted, shall develop a map depicting the tree canopy of all oak trees in the survey area and identifying the acreage of tree canopy that would be preserved and the acreage that would be removed. A tree permit for removal of isolated oak trees (those not located within the delineated boundary of oak woodland habitat) shall be obtained from the City Planning Director. As a condition of the tree removal permit, project applicant(s) shall be required to develop a Planting and Maintenance Agreement. The City's Tree Preservation Code requires compensatory mitigation and the City has developed a plan, as set forth Section 10 of the FPASP specifically to avoid and minimize adverse effects on individual oak trees from project development and to provide compensatory mitigation for removal of protected trees within the project area. In addition to the language contained in the Folsom Plan Area Specific Plan, the following elements shall be included in a protected tree mitigation plan to be developed by the City's Public Works Department and agreed upon by the Folsom Community Development Department:

- *The City's Public Works Department shall retain a certified arborist or registered professional forester to perform a determinate survey of tree species, size (dbh), condition, and location for all areas of the project site proposed for tree removal and encroachment of development. The condition of individual trees shall be assessed according to the American Society of Consulting Arborists rating system with the following added explanations:*
    - *5 = Excellent; No problems – tree has no structural problems, branches are properly spaced and tree characteristics are nearly perfect for the species.*
    - *4 = Good; No apparent problems – tree is in good condition and no apparent problems from visual inspection. If potential structural or health problems are tended at this stage, future hazard can be reduced and more serious health problems can be averted.*
    - *3 = Fair; Minor problems – There are some minor structural or health problems that pose no immediate danger. When the*

recommended actions in an arborist report are completed correctly the defect(s) can be minimized or eliminated.

- *2 = Poor; Major problems – the tree is in poor condition, but the condition could be improved with correct arboricultural work including, but not limited to: pruning, cabling, bracing, bolting, guying, spraying, mistletoe removal, vertical mulching, and fertilization. If the recommended actions are completed correctly, hazard can be reduced and the rating can be elevated to a 3. If no action is taken the tree is considered a liability and should be removed.*
- *1 = Hazardous or non correctable condition – the tree is in extremely poor condition and in nonreversible decline. This rating is assigned to a tree that has structural and/or health problems that no amount of tree care work or effort can change. The issues may or may not be considered a dangerous situation. The tree may also be infested with a disease or pest(s) that is non-controllable at this time and is causing an unacceptable risk of spreading the disease or pests(s) to other trees.*
- *0 = Dead – the tree has no significant signs of life (dead or very close to being dead).*

- *The determination for whether an individual tree shall be preserved, removed without compensation, or removed with compensatory mitigation shall be based on the condition and size of the tree as follows:*
  - *Trees rated 0 or 1 may be removed with no mitigation.*
  - *Trees rated 2 may be removed at 50% of the normal Folsom Municipal Code mitigation.*
  - *Trees rated 3, 4, and/or 5 may be removed at the normal Folsom Municipal Code mitigation.*
  - *Native oaks measuring 24 inches or greater dbh for a single trunk or 40 inches or more for a multi-trunked tree and rated a 4 or 5 shall be retained. Trees of this size but having a rating of 2 or 3 shall not be removed or mitigated, unless retaining wall(s) higher than 4 feet tall (from bottom of footing to the top of the wall) would be required to protect the tree(s) from mass grading within the project area.*
  - *Native oaks measuring between 12 and 24 inches dbh and rated a 4 or 5 shall not be removed or mitigated unless wall(s) would need to be built that are higher than 4 feet tall (from bottom of footing to the top of the wall) would be required to protect the tree(s) from mass grading within the project area. Trees in this size class but rated 2 or 3 shall not be removed unless unreasonable costs to save the tree(s)*

(greater than the normal Folsom Municipal Code mitigation) would result.

- *Native oaks measuring 5 inches or greater dbh but less than 12 inches dbh shall not be removed unless unreasonable costs to save the tree(s) (greater than the normal Folsom Municipal Code mitigation) would result.*
- *Native oak trees measuring 1 inch or greater dbh but less than 5 inches dbh may be preserved to receive a Small Tree Preservation Credit (STPC). Any tree that is to be considered for preservation credit shall be evaluated, included in the arborist report, and shall have been found to be rated a 3, 4, or a 5. Credits shall only be accepted if the tree protection zone (TPZ) (i.e., the outer edge of the tree canopy drip line) is protected with fencing in the exact manner that 5 inches dbh and greater trees are protected on a construction site, and the spacing is equal to the proper tree spacing dictated by the Folsom Master Tree List. STPC shall not count if they the tree is in apoor growing space due to its position within the TPZ of another protected tree to be preserved. The City shall accept the preservation of native oak trees in this size class as credit towards the total removed inches based on the following STPC criteria:*

Caliper of Tree Preserved	Mitigation Tree Credit Equivalent
1 inch or greater, but less than 2 inches	One #15 tree or two #5 container trees
2 inches or greater, but less than 3 inches	Two #15 container trees
3 inches or greater, but less than 4 inches	Tree #15 container trees
4 inches or greater, but less than 5 inches	Four #15 container trees

- *Folsom Municipal Code requires one of the following be planted as compensation for each diameter inch of protected tree removed:*
  - *half of a 24-inch box tree;*
  - *one #15 container tree;*
  - *two #5 container trees; or*
  - *$150 in-lieu payment or other fee set by City Council Resolution.*
- *The Planting and Maintenance Agreement shall include a planting plan, planting and irrigation design details, and a weaning schedule for the establishment period. The plan shall include a 5-year establishment period for trees and 8 years for planted acorns with an annual monitoring report that includes corrections needed with proposed work plan, and notice of compliance within 90-days of annual monitoring report. Security in a form acceptable to the City and sufficient to cover maintenance and monitoring costs for eight years shall be provided to the Folsom Community Development*

Department. The security will be forfeited if the project applicant or designated responsible party fails to fulfill the Planting and Maintenance Agreement.

- *To avoid and minimize indirect impacts on protected trees to remain within the project area, the City's Public Works Department shall install high visibility fencing outside the outer edge of the drip lines of all trees to be retained within the project area during project construction. The fencing may be installed around groups or stands of trees or whole wooded areas, but must be installed so that the drip lines of all trees are protected. Grading, trenching, equipment or materials storage, parking, paving, irrigation, and landscaping shall be prohibited within the fenced areas (i.e. drip lines of protected trees). If the activities listed cannot be avoided within the drip line of a particular tree, that tree shall be counted as an affected tree and compensatory mitigation shall be provided, or the tree in question shall be monitored for a period of five years and replaced only if the tree appears to be dead or dying within five years of project implementation.*

Through a combination of the mitigation options presented above along with the proposed on-site preservation of blue oak woodland habitat in the open space areas, the City can satisfy the mitigation requirements for removal of trees protected under the Folsom Municipal Code while also mitigating the impacts on oak woodland habitat, as determined through consultation with the Sacramento County Planning Department and the City of Folsom.

f. The South Sacramento Habitat Conservation Plan (SSHCP) is currently being drafted by Sacramento County, other member cities, the United States Fish and Wildlife Service, and the California Department of Fish and Wildlife. The City of Folsom, however, did not participate with the plan. Therefore, the project site is located in an area that does not have an approved Habitat Conservation Plan, Natural Community Conservation Plan, or local, regional, or state habitat conservation plan. As such, ***no impact*** related to said Plans would occur.

V. CULTURAL RESOURCES. *Would the project:*	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?	☐	✖	☐	☐
b. Cause a substantial adverse change in the significance of a unique archaeological resource pursuant to Section 15064.5?	☐	✖	☐	☐
c. Directly or indirectly destroy a unique paleontological resource on site or unique geologic features?	☐	✖	☐	☐
d. Disturb any human remains, including those interred outside of formal cemeteries.	☐	✖	☐	☐

Discussion

The following information was taken from the Cultural Resources Impact Assessment performed for the proposed project by ECORP Consulting, Inc.

Background

In 2011, the USACE in consultation with the California Office of Historic Preservation (OHP) and Advisory Council on Historic Preservation (ACHP), executed a Programmatic Agreement (PA) to comply with Section 106 NHPA. The City of Folsom, as CEQA lead agency, served as a concurring party to the PA and was consulted in the development. In October 2013, the PA was amended by the signatories and was thereafter referred to as the First Amended Programmatic Agreement (FAPA). Execution of the original PA and FAPA occurred prior to issuance of the Federal permit and prior to authorization for any aspect or component of the proposed project. Items required by the FAPA that have been completed include an inventory and evaluation for cultural resources, a Finding of Effect, a historic property treatment plan, and a historic property management plan. The FAPA provides the process by which all cultural resources assessments are carried out for the FPASP area, including the project area, and also addresses such for both Section 106 and CEQA compliance.

Fieldwork

The project area, including the area south of US 50 and crossing US 50, has been subjected to an intensive pedestrian survey by qualified professional archaeologists using 10 to 15 meter transect intervals. Because the final locations of alignments and facilities for the water improvements north of US 50 have not yet been identified, a determination of whether or not these areas have been subjected to a pedestrian survey cannot be made. Fieldwork for the project area was conducted during March through May of 2012. The fieldwork consisted of a combination of site relocation, updating, recording using a submeter GPS receiver, and pedestrian survey. Subsequently, in 2013, test excavations and additional archival research was conducted in order to evaluate the cultural resources that were identified to have the potential for subsurface deposits and were eligible for the National Register of Historic Places (NRHP) or the California Register of Historic Places

(CRHR). Fieldwork for the US 50 crossings was carried out by a number of cultural resources consultants at various times as early as 1990.

Historical Resources

Based on the inventories and evaluations of eligibility previously performed for the project area, the following resources exist within the project area south of and crossing US 50 that are archaeological sites from the historic period:

- Two contributing elements to the historic-era Alder Creek Corridor Mining District;
- 57 contributing elements to the historic-era Rhoades' Diggings Mining District and another nine contributing elements that are also individually eligible;
- Seven historic-era individually eligible sites, which are not contributing elements to either mining district; and
- One historic-era railroad.[4]

According to the Cultural Resources Impact Assessment, 76 historic-era sites, partially representing two historic mining districts, exist within the project area that are considered historical resources for the purpose of CEQA.

Cultural Resources

Efforts to identify cultural resources within the project area consisted of conducting records searches and literature reviews, consulting with the Native American Heritage Commission (NAHC) and Native American representatives, carrying out archival research, and conducting archaeological surveys and analyses. The project area, including the area south of US 50 and crossing US 50, has been previously subjected to a cultural resources inventory and evaluation of significance by professional archaeologists meeting the Secretary of the Interior's Professional Qualifications Standards. Because the final locations of alignments and facilities for the water improvements north of US 50 have not yet been identified, a determination whether or not these areas have been subjected to a pedestrian survey cannot be made. The studies have been documented in confidential technical reports, which were used to conduct an assessment of development activities related to the proposed project. The project activities were evaluated for their potential to disturb the resources through direct action (e.g., development of utilities through known sites) or indirect activity (e.g., increasing visibility of and access to sensitive cultural resources that could lead to vandalism or looting).

Cultural resources identified within the project area include the remains of historic-era activities, in particular, those related to Gold Rush-era and later mining operations. The cultural resources within the project area consist of the remains of small placer mines, numerous ditches and remains of similar water conveyance infrastructure, cabin sites and other structure foundations, tailings piles, and refuse scatters.

[4] This resource is the only Historical Resource under CEQA that is also not a Historic Property under Section 106 of the National Historic Preservation Act (NHPA).

Paleontological Resources

A paleontological assessment consisting of a stratigraphic inventory, a paleontological resource inventory, and a field survey was completed by AECOM for the FPASP Final EIR/EIS. The purpose of the assessment was to determine if paleontological resources were present in or adjacent to the project area and assess the sensitivity of the site for undiscovered paleontological resources.

Fossil vertebrate localities have not been previously identified within the project area south of and crossing US 50. However, vertebrate mammal and plant fossils have been reported from the Mehrten Formation throughout the Sierra Nevada foothills and the eastern margin of the Central Valley, and vertebrate mammal, plant, and invertebrate fossils have been reported from the Ione Formation throughout the Central Valley. As such, two geologic formations in the project area are considered to have a potential to yield paleontological resources: the Ione Formation and the Mehrten Formation. The formations are considered paleontologically sensitive rock units under the Society of Vertebrate Paleontology guidelines, thus suggesting a potential for the discovery of additional similar fossil remains in the two formations during earthmoving activities within the project area. Both the Ione and the Mehrten Formations occur along the western edge of the project area.

Human Remains

Known human cemeteries or burials are not located within the project area, and none have been detected through subsurface excavation.

a-d. North of US 50 Water Improvements

The proposed project includes two program-level improvements north of US 50. A new booster pump station will eventually be installed at the existing WTP for the ultimate project demand (8.8 MGD). In addition, a water transmission pipeline will eventually be installed from East Bidwell Street to the WTP.

The locations of the transmission pipeline and the booster pump station have not been finalized. Based upon preliminary engineering, the following conceptual details have been provided. The proposed booster pump station would tentatively be located west of the existing reservoir tanks in the southern portion of the WTP property, which is a developed area. With respect to the proposed water transmission line from the WTP to Iron Point Road/East Bidwell Street, the preliminary pipeline alignment is anticipated to extend northwest along East Bidwell Street, then north along Oak Avenue Parkway, and eventually west to the WTP (see Figure 8). More specifically, the portion of the alignment from Iron Point Road northwest to Oak Avenue Parkway would be located within the existing disturbed road rights-of-way. Similarly, the portion of the alignment from Oak Avenue Parkway north to Willow Creek Drive would be located within the existing disturbed road right-of-way. From Willow Creek Drive to the WTP, the pipeline would tentatively be located within an existing powerline utility easement. This powerline easement runs through an existing residential community, and includes a paved bike trail with scattered oak trees and other vegetation.

Because the majority of the improvement areas have already been subjected to cultural resources studies, the sensitivity for buried cultural resources is better understood than for the areas where none has occurred to date. However, because the proposed improvement areas north of US 50 have not been surveyed, this remote potential cannot be dismissed until further evaluation is conducted at such a time when precise engineering details are available.

US 50 Crossings

The areas crossing US 50 have been previously inventoried for cultural resources as part of other, unrelated projects. Information on the results of the cultural resources studies for the areas crossing US 50 was drawn from information received from the North Central Information Center (NCIC).

As a result of the previous surveys, several cultural resources from the historic period were recorded. The area for the proposed sewer alignment has since been developed, and therefore, the resources are either no longer present or lack sufficient integrity, and accordingly, are not significant or considered historical resources for the purpose of CEQA. The cultural resources include:

- 1 mining camp;
- 1 glory hole;
- 1 ditch segment;
- 1 stone fireplace site;
- 1 placer mining landscape;
- 1 shallow placer mining site; and
- 1 ditch system.

The area for the proposed water line alignment has been surveyed by numerous cultural resources consultants. The surveys resulted in two resources within the footprint of the proposed water line alignment:

- 1 railroad; and
- 1 fence line.

Subsequently, through separate environmental review, the US 50 interchange was constructed, which removed the fence line. The railroad remains intact and was evaluated by ECORP as not eligible for the NRHP or CRHR as part of the Section 106 process, with State Historic Preservation Officer (SHPO) concurrence. However, the Folsom Historical Society has expressed an interest in considering the railroad important on a local level.

The areas near the proposed US 50 crossings have been previously disturbed by construction of the highway and the commercial development north of US 50; as such, the majority of the proposed improvements crossing US 50 would not be located on previously-undisturbed land. Future water and sewer pipeline alignment locations were designed to be within existing or proposed City right-of-ways, where feasible, as identified

in the FPASP Circulation Diagram. It should be noted that the sewer pipeline crossing portion between Easton Valley Parkway and US 50 would be located on undeveloped land. As such, the possibility exists for previously unknown resources to be discovered during ground disturbing activities associated with construction of the portion of the sewer pipeline south of US 50.

South of US 50 Backbone

The following discussion pertains to the proposed improvements located south of US 50.

On-Site Resources

As a result of the inventory and evaluations of eligibility for the south of US 50 area, ECORP documented 151 sites and isolates. All 151 sites are archaeological and all are from the historic period. Many of the sites are contributing elements to one of two individually eligible historic mining districts (Alder Creek Corridor Mining District [ACCMD] and Rhoades' Diggings Mining District [RDMD]). Contributing elements are sites that do not exhibit significance as individual resources, but are those that collectively form a cultural landscape because they share a common time and function.

The following cultural resource within the area south of US 50 is not individually eligible, but is a contributing element to the ACCMD:

- 2 placer mining landscapes.

The following are not individually eligible, but are contributing elements to the RDMD:

- 15 ditch sites;
- 41 placer mining landscape sites; and
- 1 residential site.

The following are not individually eligible and are not contributing elements to a district:

- 1 railroad;
- 6 dams;
- 14 rock fences;
- 8 ditches;
- 1 holding pond;
- 3 refuse scatters;
- 1 transmission line;
- 1 rock cairn;
- 27 placer mining sites;
- 3 rock piles;
- 1 dredge cable fragment;
- 1 automobile frame;

- 1 well;
- 1 campsite; and
- 7 isolates.

The following are individually eligible and are contributing elements to the RDMD:

- 1 ditch (Rhoades' Branch Ditch);
- 1 canal (Natoma Canal);
- 3 placer mining landscape sites; and
- 4 residential sites.

The following are individually eligible, but are not contributing elements to a district:

- 2 ranch complexes;
- 1 ditch (Keefe-McDerby Mine Ditch);
- 1 road (White Rock Road);
- 2 inns; and
- 1 placer mining landscape site (Gray's Drift Mine).

The SDMP system includes underground pipe conveyances and all of the surface components of the system, including inlets, filters, maintenance access, and outfall structures. All roadway crossings of the main branch of Alder Creek would be bridges that span the ordinary high water mark of the creek. When a roadway crosses over a tributary to the creek, a culvert would be installed and the culverts would be sized to meter the runoff through them thus impounding some of the runoff upstream of the culvert for a very short time duration thus creating an in-stream detention basin.

Installation of trunk sewer mains, sewer lift stations, and modification to certain sewer pipelines south of US 50 would require site preparation, which may include grading, trenching, and excavation.

Altering pressure zone elevations, installing transmission pipelines and booster pumps, and relocating water storage tanks south of US 50 would require site preparation, which may include grading, trenching, and excavation.

Construction of the aforementioned improvements associated with the SDMP would require trenching and excavation. As discussed above, known cultural and historical resources exist within the project area south of US 50. In addition, the Mehrten and Ione Formations have a potential to yield paleontological resources; therefore, the possibility exists for previously unknown resources to be discovered during ground disturbing activities.

The majority of the project area south of US 50 has a low potential for containing nonrenewable paleontological resources; however, the Ione and Mehrten Formations may be penetrated through the subsurface installation of infrastructure associated with the Master Plans. The potential exists for resources to be discovered during construction

earthwork and for damage to or destruction of previously unknown historical, cultural, and paleontological resources to occur.

Roadway Construction

The street system would be constructed throughout the FPASP area. The street system would include the regional connectors, major arterials, and some of the minor arterials outlined in Exhibit 2-9 of the FPASP. The street system would include pavement, curbs, gutters, street lighting, sidewalks, landscaping, and striping. All proposed roadways would be rough graded with a maximum width of 110 feet. In total, approximately 10 miles of roadway would be constructed. The potential exists for resources to be discovered during construction earthwork and the potential exists for damage to or destruction of previously unknown historical, cultural, and paleontological resources during ground disturbing activities.

Conclusion

Installation of subsurface utilities and related infrastructure, which may include trenching, grading, or jacking and boring, could impact the potential on-site resources, including the Ione and Mehrten Formation, portions of two historical mining districts and the contributing elements, a railroad, and any other unknown cultural resources.

Preservation in place was considered for the historical resources during the project planning process. Factors weighed in this consideration included the presence of other biological or water resources and restrictions on the flexibility of locations of engineering, roadway access, and utilities required to service the Project. The aforementioned factors were weighed during the preparation of finding of effect documentation, prepared under the First Amended Programmatic Agreement.

The preparation of the Determination of Effect Report for the Backbone Infrastructure Permit Area, prepared under the original Programmatic Agreement, led to reconfiguration of the open space and preserves associated with the FPASP area to capture as many cultural resources as possible. Through that process, preservation in place of at least seven individually significant resources, or portions of those resources, was achieved. In addition, a large number of contributing elements to historic districts, primarily the RDMD, is being preserved in place. Preservation of these resources will be managed through the Open Space Management Plan being prepared for the FPASP area.

Given the historic activity that occurred over time in the project area, the potential exists for the project to cause an adverse change in the significance of a historical or archaeological resource, destroy a unique paleontological resource, site, or unique geologic feature, or disturb any human remains. Therefore, a ***potentially significant*** impact may result from the proposed project.

Mitigation Measure(s)
Implementation of the following mitigation measures would reduce the above potential impacts to a *less-than-significant* level through compliance with the FAPA.

South of US 50 Backbone and US 50 Crossings

V-1. *The FAPA provides a management framework for identifying historic properties and historical resources, determining adverse effects, and resolving those adverse effects with appropriate mitigation.*

Proof of compliance with the applicable procedures in the FAPA and implementation of applicable historic property treatment plans (HPTPs) with regard to mitigation for the individually eligible sites and contributing elements to the districts shall be provided to the Folsom Community Development Department prior to authorization of any ground disturbing activities in any given segment of the project area. Proof of compliance is defined as written approval from the USACE of all applicable mitigation documentation generated from implementation of an approved HPTP and includes the following mitigation actions:

- *Historic American Engineering Record documentation of the Keefe-McDerby Mine Ditch (P-34-1475) and Rhoades' Branch Ditch (P-34-1742):*
  - *In order to determine the appropriate level of documentation necessary, the USACE shall first consult with the National Park Service (NPS), which administers the HAER program. Consultation with the NPS will be initiated through the submission of the DPR site record and copies of applicable technical reports with a request for review and issuance of a stipulation letter. Unless an objection to the requirements of the stipulation letter is expressed and resolved through the process outlined in the FAPA, the level of documentation stipulated by the NPS shall be implemented and all documentation will be approved by the USACE and NPS prior to ground-disturbing activities affecting the resource, or as governed by the permit conditions. Focused archival research conducted as part of the HAER documentation shall be incorporated into the revised cultural context statement for the FPASP area via the Historic Property Synthesis report. A non-archival set of the final documentation shall be submitted to the City.*
- *Data recovery excavations of sites P-34-4612, -1746, -1788, -1910, 1911, -4714, and -2166:*
  - *Data recovery shall follow the standards and guidelines in the HPTP and shall include at least 4 1m-x-1m excavation units. The results of the data recovery, including results of*

excavation, laboratory analysis, artifact analysis, and archival research, shall be documented in a confidential data recovery technical report, which shall be submitted to the City.

- *Documentation of White Rock Road, P-34-1555:*
  - *Documentation shall consist of focused archival research, field photography, videography, and mapping, extensive enough to capture the setting, alignment, and association with adjacent features. Copies of the documentation shall be submitted to the City.*
- *Landscape Mapping of Districts:*
  - *Low level aerial photography and topographic mapping of the districts within the entire APE will be completed, which includes both contributing and non-contributing elements. Color multiband digital photography will be collected at or better than 0.5-foot pixel resolution, equating to 1"=100' scale in traditional imagery. Topographic data was already acquired for most of the districts by aircraft-mounted LIDAR equipment with an approximate ground point spacing of better than one meter, allowing for the creation of one-foot contours at 1"=100' scale, which fulfills the National Mapping Accuracy Standards. The digital aerial photographs and topographic data will be incorporated into a Geographic Information System database with the ACCMD boundaries delineated, as established below. Preservation and archiving of digital imagery and topographic data shall be carried out in accordance with the requirements of Attachment G of the PHPS (Westwood et al. 2011).*

    The district boundaries will be permanently established and mapped to establish permanent boundaries for the district within the APE with sub-meter accuracy. The verification will define the boundaries of the district within the APE using an updated DPR 523A (Primary Record) form, color photography, and a district-level plan map. The feature records for each element of the district will be updated to reflect the new mapping data.
- *Geoarchaeological monitoring:*
  - *Due to a potential for deeply buried archaeological resources down to a depth of 1.5 meters (approximately 5 feet) below soil formations known as the T-2 terrace, where colluvial deposits grade onto the T-2 terrace, and along the distal edge of tributary alluvial fans, all ground disturbing activity in those areas shall be monitored by a qualified professional archaeologist with a specialization in*

geoarchaeology. Once subsurface disturbance extends beyond 1.5 meters below surface, monitoring is no longer needed.

A confidential map showing the locations of required monitoring has been submitted to the City. The City shall apply a map condition that requires geoarchaeological monitoring in those locations only, and proof of compliance is a copy of the monitoring report submitted to the City.

South of US 50 Backbone, US 50 Crossings, and North of US 50 Water Improvements

V-2. *Before the start of ground-disturbing activities, the project applicant(s) shall retain a qualified archaeologist (for cultural resources) and a qualified professional (for paleontological resources) to conduct training for all construction personnel involved with earthmoving activities, including the site superintendent, to inform them about the possibility of encountering buried cultural and paleontological resources (i.e., fossils), and inform them of the proper procedures should cultural or paleontological resources be encountered. Proof of the contractor awareness training shall be submitted to the Folsom Community Development Department in the form of a copy of training materials and the completed training attendance roster.*

Should any cultural resources, such as structural features, bone or shell, artifacts, or architectural remains be encountered during any construction activities, work shall be suspended within 200 feet of the find and the City of Folsom and USACE shall be notified immediately. The City shall retain a qualified archaeologist who shall conduct a field investigation of the specific site and shall evaluate the significance of the find by evaluating the resource for eligibility for listing on the CRHR and the NRHP. If the resource is eligible for listing on the CRHR or NRHP and it would be subject to disturbance or destruction, the City shall require that the resource be treated with appropriate mitigation measures prior to work resuming, such as data recovery excavation or field documentation. The City of Folsom and USACE shall be responsible for approval of recommended mitigation if it is determined to be feasible in light of the approved land uses, and shall implement the approved mitigation and seek written approval on mitigation documentation before resuming construction activities at the archaeological site.

If paleontological resources are discovered during earthmoving activities, the construction crew shall immediately cease work in the vicinity of the find and notify the City of Folsom. The project applicant(s) shall retain a qualified paleontologist to evaluate the resource and prepare a recovery plan in accordance with Society of Vertebrate Paleontology guidelines

(1996). The recovery plan may include, but is not limited to, a field survey, construction monitoring, sampling and data recovery procedures, museum storage coordination for any specimen recovered, and a report of findings. Recommendations in the recovery plan that are determined by the lead agency to be necessary and feasible shall be implemented before construction activities can resume at the site where the paleontological resources were discovered.

South of US 50 Backbone, US 50 Crossings, and North of US 50 Water Improvements

V-3. *In the event that human remains are discovered, construction activities within 150 feet of the discovery shall be halted or diverted and the requirements for managing unanticipated discoveries in Mitigation Measure V-3 shall be implemented. In addition, the provisions of Section 7050.5 of the California Health and Safety Code, Section 5097.98 of the California Public Resources Code, and Assembly Bill 2641 shall be implemented. When human remains are discovered, state law requires that the discovery be reported to the County Coroner (Section 7050.5 of the Health and Safety Code) and that reasonable protection measures be taken during construction to protect the discovery from disturbance (AB 2641).*

If the Coroner determines the remains are Native American, the Coroner shall notify the Native American Heritage Commission, which then designates a Native American Most Likely Descendant (MLD) for the project (Section 5097.98 of the Public Resources Code). The designated MLD then has 48 hours from the time access to the property is granted to make recommendations concerning treatment of the remains (AB 2641).

If the landowner does not agree with the recommendations of the MLD, the NAHC can mediate (Section 5097.94 of the Public Resources Code). If no agreement is reached, the landowner must rebury the remains where they will not be further disturbed (Section 5097.98 of the Public Resources Code). In addition, the site shall be recorded with the NAHC or the appropriate Information Center; using an open space or conservation zoning designation or easement; or recording a document with the county in which the property is located (AB 2641).

North of US 50 Water Improvements

V-4. *Once the water pipeline alignment and booster pump station locations are finalized, the Folsom Community Development Department and applicant shall comply with the procedures for identification, evaluation, and treatment of historical resources under CEQA.*

Management of cultural resources eligible for or listed on the CRHR under CEQA mirrors management steps required under Section 106. These steps

may be combined with deliverables and management steps performed for Section 106 provided that management documents prepared for the FAPA also clearly reference the CRHR listing criteria and significance thresholds that apply under CEQA. The following steps and documents may be combined with the phasing of management and documents prepared pursuant to the FAPA (if a USACE permit is required) to minimize the potential for inconsistency and duplicative management efforts. The Folsom Community Development Department shall consult with the USACE when applicable.

Prior to ground-disturbing work for each element, the project applicant(s), with Folsom Community Development Department oversight, shall retain the services of a qualified professional who meets the applicable Professional Qualifications Standards of the Secretary of the Interior to perform the following actions:

- *Perform an inventory of cultural resources within each individual element footprint, subject to approval by the Folsom Community Development Department. The inventory shall include a current records search and literature review from the North Central Information Center and an intensive pedestrian survey to identify any cultural resources inside the project footprint, including archaeological sites, historic buildings and structures, cultural landscapes, or districts. The inventory report shall follow the California Office of Historic Preservation's Archaeological Resource Management Reports: Recommended contents and format include confidential Department of Parks and Recreation (DPR) site records and maps for all resources identified within the footprint. The report shall identify locations that are sensitive for undiscovered cultural resources based upon the location of known resources, geomorphology, and topography.*
- *Evaluate all cultural resources relative to Criteria 1, 2, 3, and 4 of the CRHR through an appropriate combination of archival or archaeological research, and based on an appropriate prehistoric and historic context that identifies relevant prehistoric, ethnographic, and historic themes and research questions. The prehistoric and historic context statements shall be used to determine the significance of identified resources and appropriate treatment of resources determined eligible for the CRHR (or NRHP), which are considered historical resources for the purpose of CEQA.*
- *For each historical resource within the project footprint, determine if implementation of the individual project development phase would result in damage or destruction of historical resources. The findings shall be reviewed by the Folsom Community Development Department for consistency with the significance thresholds and*

treatment measures provided in the FPASP Final EIR/EIS and FAPA (if applicable).

- *Where possible, configure or redesign the project to avoid impacts on historical resources. Alternatively, these resources may be preserved in place if possible, as suggested under California Public Resources Code Section 21083.2.*
- *For historical resources that cannot feasibly be avoided and will be significantly impacted by the project, prepare a treatment and mitigation plan that may include, but is not limited to, the measures listed below. The measures shall be reviewed by the Folsom Community Development Department for consistency with the significance thresholds and standards provided in the FPASP Final EIR/EIS, and in consultation with the USACE for compliance with the FAPA (if applicable).*
    - *Monitoring of ground-disturbing work in areas determined by the qualified professional to be highly sensitive for known or unknown cultural resources, if appropriate. The identification of sensitive locations subject to monitoring during construction of each individual development phase shall be performed in concert with monitoring activities performed under the FAPA to minimize the potential for conflicting requirements.*
    - *Data recovery excavations for resources that are eligible for listing under CRHR Criterion 4 because of the data they contain (which may contribute to research).*
    - *For historical architectural, engineered, or landscape features, treatment measures may consist of a preparation of interpretive, narrative, or photographic documentation.*
- *All technical and mitigation documentation is subject to approval by the Folsom Community Development Department, in consultation with appropriate agencies, when applicable.*

VI. GEOLOGY AND SOILS. *Would the project:*	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area based on other substantial evidence of a known fault?	☐	✖	☐	☐
ii. Strong seismic ground shaking?	☐	✖	☐	☐
iii. Seismic-related ground failure, including liquefaction?	☐	✖	☐	☐
iv. Landslides?	☐	✖	☐	☐
b. Result in substantial soil erosion or the loss of topsoil?		✖	☐	☐
c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	✖	☐	☐
d. Be located on expansive soil, as defined in Table 18-1B of the Uniform Building Code?	☐	✖	☐	☐
e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	✖

Discussion

ai-iv,
c, d. Ground shaking, motion that occurs as a result of energy released during faulting, could potentially result in the damage or collapse of buildings and other structures, depending on the magnitude of the earthquake, the location of the epicenter, and the character and duration of the ground motion. Other important factors to be considered are the characteristics of the underlying soil and rock and, where structures exist, the building materials used, and the workmanship of the structures.

The West Branch of the Bear Mountains fault, within the Foothills fault system, is located approximately five miles east of the proposed project site's eastern boundary; however, according to the FPASP Final EIR/EIS, fault activity does not appear to have occurred within the last 11,000 years, and the slip rate of the Foothills fault system is extremely low (0.05 millimeters per year), which is well below the planning threshold for major earthquakes. With the exception of the Dunnigan Hills fault, located in the Woodland area, the Sacramento Valley has generally not been seismically active in the last 11,000 years

(Holocene time). Faults with known or estimated activity during the Holocene are generally located in the San Francisco Bay Area to the west, or in the Lake Tahoe area to the east.

The California Building Standards Code (CBC) specifies more stringent design guidelines where a project would be located adjacent to a Class A or B fault as designated by the California Probabilistic Seismic Hazard Maps. The proposed project site is located approximately 60 miles from the nearest Class A or B fault.

North of US 50 Water Improvements

The proposed project includes two program-level improvements north of US 50. A new booster pump station will eventually be installed at the existing WTP for the ultimate project demand (8.8 MGD). Once water demand within the FPASP exceeds two MGD, approximately 18,000 lineal feet of a 30-inch water supply pipeline will be installed from the WTP to Iron Point Road/East Bidwell Street. The preliminary pipeline alignment is anticipated to extend northwest along East Bidwell Street, then north along Oak Avenue Parkway, and eventually west to the WTP through an existing open space/powerline easement.

According to the Natural Resource Conservation Service (NRCS) Web Soil Survey, the WTP is underlain by Argonaut-Auburn complex, three to eight percent slopes. Argonaut-Auburn complex has moderately high permeability and is well drained. The improvements north of US 50 have been evaluated by a geotechnical engineer associated with previous development of the roadways and other development north of US 50. Because the improvements north of US 50 would be located on previously developed land, the potential for impacts related to earthquake fault rupture, ground shaking, ground failure, landslides, unstable soils, or expansive soils are low. Nevertheless, because the final alignment and locations of the pipeline and booster pump station have not been finalized, a project-specific geotechnical report will be required. The geotechnical report will address and make recommendations regarding site preparation, types of fill, grading practices, unstable soils, liquefaction, expansive soils, and other potential issues (see Mitigation Measure VI-2 below).

US 50 Crossings

According to the FPASP Final EIR/EIS, the area surrounding the proposed water pipeline alignment contains Argonaut-Auburn complex, three to eight percent slopes. Argonaut-Auburn complex has moderately high permeability and is well drained. The expansive potential of the soils associated with the water line crossing is moderate. The proposed water line crossing has been evaluated by a geotechnical engineer associated with previous development of the roadways and commercial development north of US 50. Because the proposed water line crossing would be located on previously developed land, the potential for impacts related to earthquake fault rupture, ground shaking, ground failure, or landslides are low.

The area surrounding the proposed sewer pipeline alignment contains a mixture of soil types, including: Whiterock loam, three to 30 percent slopes, Hicksville sandy clay loam, zero to two percent slopes, and Red Bluff-Xerorthents, dredge tailings, complex, two to 50 percent slopes. Whiterock loam has high permeability and is somewhat excessively drained. Hicksville sandy clay loam has moderately high permeability and is moderately well drained. Red Bluff-Xerorthents, dredge tailings, complex has moderately high permeability and is well drained. In summary, the soils beneath the proposed sewer pipeline have moderately high to high permeability and are moderately to excessively drained. The expansive potential of the soils associated with the sewer line crossing is low to moderate.

The proposed sewer line portion north of and crossing US 50 has been evaluated by a geotechnical engineer associated with previous development of the roadways and commercial development north of US 50. The sewer line portion just south of US 50 would cross Alder Creek. Slope stability associated with the Creek shall be evaluated for landslide potential.

South of US 50 Backbone

The majority of the proposed project site south of US 50 has been evaluated for geotechnical issues. The analysis prepared for this Initial Study also relied on the NRCS Web Soil Survey, and published geologic literature and maps.

Rupture of a Known Earthquake Fault

According to the FPASP Final EIR/EIS, the project site south of US 50 is located approximately 50 miles from the nearest Alquist-Priolo Earthquake Fault Zone, and the project site south of US 50 is not underlain by or adjacent to any known faults. Because the damage from surface fault rupture is generally limited to a linear zone a few yards wide, the potential for surface fault rupture to cause damage to proposed structures is negligible. The FPASP Final EIR/EIS determined that no impact would occur related to surface fault rupture. The proposed project would not alter the conclusion of the Final EIR/EIS.

Strong Seismic Ground Shaking

Losses from groundshaking can occur where tall structures are built on thick, soft sediments. According to the FPASP Final EIR/EIS, the project site south of US 50 is not located within a known fault zone, or within or adjacent to any faults known to have been active during Holocene time. Other faults that have been zoned as "active" by the California Geological Survey are located in the Coast Range or in the vicinity of Lake Tahoe.

Geotechnical reports have only been prepared for five of the properties within the project site south of US 50. Three of the five reports evaluated the site using the older CBC criteria (before 2008). The 2007 CBC (adopted in 2008) replaced the previous "seismic zones" (assigned a number from 1 to 4, where 4 required the most earthquake-resistant design)

with new Seismic Design Categories A to F (where F requires the most earthquake-resistant design) for structures designed for a project site.

Chapter 16 of the CBC specifies exactly how each seismic design category is to be determined on a site-specific basis through the site-specific soil characteristics and proximity to potential seismic hazards. Although geotechnical reports have not been prepared for the entire project site, the FPASP Final EIR/EIS includes Mitigation Measure 3A.7-1a which requires the preparation of a site-specific geotechnical report per CBC requirements with appropriate recommendations for each project phase. The site-specific reports will make recommendations on site preparation, types of fill, grading practices, erosion/winterization, seismic ground shaking, expansive/unstable soils, and more. In addition, Mitigation Measure 3A.7-1b is included in the Final EIR/EIS in order to reduce potential impacts to seismic ground shaking to a less-than-significant level by requiring earthwork monitoring during earthmoving activities.

Liquefaction and Ground Failure

Soil liquefaction occurs when ground shaking from an earthquake causes a sediment layer saturated with groundwater to lose strength and take on the characteristics of a fluid, thus becoming similar to quicksand. Factors determining the liquefaction potential are soil type, the level and duration of seismic ground motions, the type and consistency of soils, and the depth to groundwater. Loose sands and peat deposits are susceptible to liquefaction, while clayey silts, silty clays, and clays deposited in freshwater environments are generally stable under the influence of seismic ground shaking.

According to the FPASP Final EIR/EIS, the project site south of US 50 is underlain by small amounts of Pleistocene-age alluvium and primarily by Jurassic-age bedrock formations, which generally are unlikely to be subject to liquefaction in the event of an earthquake. In addition, the project site south of US 50 is underlain by a moderately deep groundwater table that is at least 100 feet below the ground surface. Furthermore, potential sources of seismic activity are a relatively long distance away from the project site (approximately 50 miles). Therefore, impacts related to liquefaction and ground failure would be less than significant.

Landslides and Slope Stability

Seismically-induced landslides are likely to occur along steep to intermediate hillside areas, as well as areas where previous land sliding or soil creeping has occurred, areas where non-engineered grading and uncontrolled drainage on slopes has occurred, or areas with deep colluvial deposits. Slope stability hazards could result in loose debris flows and landslides. The project site south of US 50 consists of two distinct topographic areas: the eastern region includes all of the property east of Placerville Road and consists of hilly terrain located where the lower foothills of the Sierra Nevada join the Sacramento Valley floor. Elevations vary from 440 feet above mean sea level at the valley floor (along Placerville Road), to 800 feet above mean sea level in the foothills adjacent to the existing communication towers. The hilltop terrain is plateau-like and extends in a gentle slope from

US 50 to White Rock Road. On the east side of the project site south of US 50, the topography slopes gradually from the plateau to the El Dorado County line. Existing slopes range from five percent, to small areas in excess of 30 percent. The majority of slopes in the eastern area average 15 percent.

The topography of the western region of the project site south of US 50 consists of gently rolling terrain located on the valley floor between Placerville Road on the east, US 50 on the north, White Rock Road on the south, and Prairie City Road on the east. The majority of slopes in the western zone range between zero percent and 15 percent; however, isolated steeper slopes exist along the edges of Alder Creek tributaries and existing seasonal drainages in the western sections of the zone.

According to the FPASP Final EIR/EIS, the eastern portion of the project site south of US 50 contains steep slopes; however, landslides have not been recorded in the project site and vicinity. Implementation of Mitigation Measures 3A.7-1a and 3A.7-4 of the FPASP Final EIR/EIS, which require the preparation of a site-specific geotechnical report and a seismic refraction survey, would reduce impacts related to bedrock/rock outcrops and landslides to a less-than-significant level.

Expansive Soils

According to the FPASP Final EIR/EIS, near surface soils in the area south of US 50 have a low to high shrink-swell potential, meaning that the soils have a high clay content and therefore would be capable of exerting substantial expansion pressures on structural foundations and exterior flatwork. However, Mitigation Measures 3A.7-1a and 3A.7-1b of the FPASP Final EIR/EIS require that the design recommendations of a geotechnical engineer to reduce damage from expansive soils be incorporated into infrastructure as required by the CBC, and that a geotechnical or soils engineer provide on-site monitoring to ensure that earthwork is being performed as specified in the plans. The aforementioned measures would reduce any potential impact related to expansive soils to a less-than-significant level.

Conclusion

The proposed project site is located approximately 50 miles from the nearest Alquist-Priolo Earthquake Fault Zone, and the project site is not underlain by or adjacent to any known faults. The FPASP Final EIR/EIS previously analyzed impacts related to seismicity for the project site south of US 50. Mitigation Measures included in the FPASP Final EIR/EIS would be required prior to ground disturbance related to the proposed project. Therefore, without mitigation, implementation of the proposed project may expose people or structures to substantial adverse seismic-related effects, including landslides, or be placed on a geologic unit or soil that is expansive, unstable, or would become unstable as a result of the proposed project, and impacts would be ***potentially significant***.

Mitigation Measure(s)

Implementation of the following mitigation measures would reduce the above potential impacts to a *less-than-significant* level.

South of US 50 Backbone and US 50 Crossings

VI-1. Prior to the start of construction activities, the project applicant(s) for the south of US 50 backbone and US 50 crossings improvements shall hire a licensed geotechnical engineer to prepare final, site-specific geotechnical subsurface investigation report(s), which shall be submitted for review and approval to the Folsom Environmental and Water Resources Department and the Community Development Department. The final geotechnical engineering report(s) shall address and make recommendations on the following:

- *Site preparation;*
- *Soil bearing capacity;*
- *Appropriate sources and types of fill;*
- *Potential need for soil amendments;*
- *Road, pavement, and parking areas;*
- *Structural foundations, including retaining-wall design;*
- *Grading practices;*
- *Soil corrosion of concrete and steel;*
- *Erosion/winterization;*
- *Seismic ground shaking;*
- *Liquefaction; and*
- *Expansive/unstable soils.*

The portion of Alder Creek that the sewer pipeline will cross shall be evaluated for slope stability. In addition to the recommendations for the conditions listed above, the geotechnical investigation shall include subsurface testing of soil and groundwater conditions, and shall determine appropriate foundation design for water storage tanks and booster pump stations that are consistent with the California Building Code (CBC). Special recommendations contained in the geotechnical engineering report shall be noted on the grading plans and implemented as appropriate before construction begins. Design and construction of the structural foundations for the booster pump station and the water storage tanks shall be in accordance with the CBC. The project applicant(s) shall provide for engineering inspection and certification that earthwork has been performed in conformity with recommendations contained in the geotechnical report.

North of US 50 Water Improvements

VI-2. Prior to the start of construction activities, the project applicant(s) for the north of US 50 water improvements shall hire a licensed geotechnical

engineer to prepare a final, site-specific geotechnical subsurface investigation report for the proposed improvements, which shall be submitted for review and approval to the Folsom Community Development Department. The final geotechnical engineering report shall address and make recommendations on the following:

- *Site preparation;*
- *Soil bearing capacity;*
- *Appropriate sources and types of fill;*
- *Structural foundations, including retaining-wall design;*
- *Potential need for soil amendments;*
- *Grading practices;*
- *Soil corrosion of concrete and steel;*
- *Erosion/winterization;*
- *Seismic ground shaking;*
- *Liquefaction; and*
- *Expansive/unstable soils.*

In addition to the recommendations for the conditions listed above, the geotechnical investigation shall include subsurface testing of soil and groundwater conditions, and shall determine appropriate foundation design for the booster pump stations that are consistent with the CBC. Special recommendations contained in the geotechnical engineering report shall be noted on the grading plans and implemented as appropriate before construction begins. Design and construction of the structural foundations for the booster pump station shall be in accordance with the CBC. The project applicant(s) shall provide for engineering inspection and certification that earthwork has been performed in conformity with recommendations contained in the geotechnical report.

South of US 50 Backbone, US 50 Crossings, and North of US 50 Water Improvements

VI-3. Prior to initiation of ground disturbance, a geotechnical engineer shall develop a program to monitor the sites during construction to ensure compliance with the recommendations presented in the geotechnical report(s) and conditions for performing such monitoring. The geotechnical monitoring program shall include a description of the improvements areas where geotechnical monitoring shall be required. The monitoring program shall be subject to review and approval by the Folsom Community Development Department.

South of US 50 Backbone

VI-4. Prior to the start of all construction activities east of Old Placerville Road, the project applicant(s) for all improvements south of US 50 shall retain a licensed geotechnical engineer to perform a seismic refraction survey.

Project-related excavation activities shall be carried out as recommend by the geotechnical engineer, and approved by the Folsom Community Development Department.

b. North of US 50 Water Improvements

According to the NRCS Web Soil Survey, the WTP is underlain by Argonaut-Auburn complex, three to eight percent slopes. Argonaut-Auburn complex has moderately high permeability and is well drained. The proposed improvements north of US 50 would take place in an area that has been previously disturbed by the construction of the WTP and other development north of US 50. A grading and erosion control plan is required for all phases of development by Mitigation Measure 3A.7-3 of the FPASP Final EIR/EIS. The aforementioned mitigation would reduce the potential impact related to erosion to a less-than-significant level.

US 50 Crossings

The proposed water improvement crossing US 50 would take place in an area that has been previously disturbed by the construction of US 50 and the commercial development north of US 50. As such, impacts related to erosion and the loss of top soil resulting from the water line crossing would be less than significant.

As noted above, a grading and erosion control plan is required for all phases of development by Mitigation Measure 3A.7-3 of the FPASP Final EIR/EIS. The aforementioned mitigation would reduce any potential impact related to erosion to a less-than-significant level.

The construction of the sewer pipeline located just north of and crossing US 50 would take place in an area that has been previously disturbed by the construction of US 50 and the commercial development north of US 50. As such, impacts related to erosion and the loss of top soil resulting from the sewer pipeline located north of and crossing US 50 would be less than significant.

The portion of the sewer pipeline just south of US 50 would cross Alder Creek in an undisturbed area. The grading and erosion control plan, required for all phases of development by Mitigation Measure 3A.7-3 of the FPASP Final EIR/EIS, would include the location, implementation schedule, and maintenance schedule of all erosion and sediment control measures, a description of measures designed to control dust and stabilize the construction-site road and entrance, and a description of the location and methods of storage and disposal of construction materials. Erosion and sediment control measures would also be required. In addition, the project applicant(s) would be required to obtain a National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) Permit and Grading Permit, comply with the City's Grading Ordinance and County drainage and stormwater quality standards, and commit to implementing all measures in their drainage plans and erosion and sediment control plans to avoid and minimize erosion and runoff into Alder Creek and all wetlands and other on-

site waters. The aforementioned mitigation would reduce any potential impact related to erosion to a less-than-significant level.

See the Hydrology and Water Quality section for further discussion regarding wetlands and erosion control.

South of US 50 Backbone

Project implementation would involve intensive grading and construction activities for infrastructure and road foundations over varied terrain, ranging from relatively flat, to gently rolling, to steeply sloped (in the eastern portion of the project site south of US 50). Construction activities would occur in soils that have moderate wind and water erosion hazard potential. Conducting the aforementioned activities would result in the temporary disturbance of soil and would expose disturbed areas to winter storm events. Rain of sufficient intensity could dislodge soil particles from the soil surface. If the storm is large enough to generate runoff, localized erosion could occur. On the steeper eastern slopes, severe erosion could occur as a result of project construction. In addition, soil disturbance during the summer as a result of construction activities could result in soil loss because of wind erosion. The FPASP Final EIR/EIS concludes that with implementation of Mitigation Measure 3A.7-3 the potential impact associated with erosion would be reduced to a less-than-significant level. Pursuant to Mitigation Measure 3A.7-3, a site-specific grading and erosion control plan shall be prepared for the south of US 50 backbone and the recommendations outlined in the plan shall be carried out as recommended by the civil engineer.

Conclusion

Potential impacts related to erosion and the loss of top soil would be reduced to a less-than-significant level with implementation of Mitigation Measure 3A.7-3 outlined in the FPASP Final EIR/EIS. As such, without mitigation, a ***potentially significant*** impact would occur.

Mitigation Measure(s)
Implementation of the following mitigation measures would reduce the potential impacts to a *less-than-significant* level.

South of US 50 Backbone, US 50 Crossings, and North of US 50 Water Improvements

VI-5(a). *Prior to issuance of grading permits, the project applicant(s) constructing portions of the backbone infrastructure shall retain a California Registered Civil Engineer to prepare a grading and erosion control plan. The grading and erosion control plan shall be submitted to the City Public Works Department. The plan shall be consistent with the City's Grading Ordinance, the City's Hillside Development Guidelines, and the state's NPDES permit, and shall include the site-specific grading associated with backbone construction.*

Erosion and sediment control measures could include the use of detention basins, berms, swales, wattles, and silt fencing, and covering or watering of stockpiled soils to reduce wind erosion. Stabilization on steep slopes could include construction of retaining walls and reseeding with vegetation after construction. Stabilization of construction entrances to minimize trackout (control dust) is commonly achieved by installing filter fabric and crushed rock to a depth of approximately one foot.

South of US 50 Backbone

VI-5(b). Prior to issuance of grading permits for the detention basin west of Prairie City Road, the project applicant shall retain a California Registered Civil Engineer to prepare a grading and erosion control plan. The grading and erosion control plan shall be submitted to the City Public Works Department. The plan shall be consistent with the City's Grading Ordinance, the City's Hillside Development Guidelines, and the state's NPDES permit, and shall include the site-specific grading associated with construction of the detention basin construction.

Erosion and sediment control measures could include the use of detention basins, berms, swales, wattles, and silt fencing, and covering or watering of stockpiled soils to reduce wind erosion. Stabilization on steep slopes could include construction of retaining walls and reseeding with vegetation after construction. Stabilization of construction entrances to minimize trackout (control dust) is commonly achieved by installing filter fabric and crushed rock to a depth of approximately one foot.

e. The proposed project consists of the construction of the backbone infrastructure proposed by the SDMP, WMP, and SMP, as well as major roadways within the FPASP area. Therefore, the proposed project would not include the use of septic tanks. Because the project would not require use of a septic system or any type of wastewater treatment, ***no impact*** would occur.

VII. GREENHOUSE GAS EMISSIONS. *Would the project:*	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	✖	☐	☐
b. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gasses?	☐	✖	☐	☐

Discussion

a,b. Emissions of greenhouse gases (GHGs) contributing to global climate change are attributable in large part to human activities associated with the industrial/manufacturing, utility, transportation, residential, and agricultural sectors. Therefore, the cumulative global emissions of GHGs contributing to global climate change can be attributed to every nation, region, and city, and virtually every individual on earth. A project's GHG emissions are at a micro-scale relative to global emissions, but could result in a cumulatively considerable incremental contribution to a significant cumulative macro-scale impact. As such, impacts related to emissions of GHG are inherently considered cumulative impacts.

Implementation of the proposed project along with other past, present, and reasonably foreseeable future projects, would cumulatively contribute to increases of GHG emissions that are associated with global climate change. Estimated GHG emissions attributable to future development would be primarily associated with increases of carbon dioxide (CO_2) and, to a lesser extent, other GHG pollutants, such as methane (CH_4) and nitrous oxide (N_2O) associated with area sources, mobile sources or vehicles, utilities (electricity and natural gas), water usage, wastewater generation, and the generation of solid waste.

It should be noted that the FPASP Final EIR/EIS addressed short-term construction-related and long-term operational GHG emissions from buildout of the entire FPASP, including the proposed project, and concluded significant and unavoidable impacts even with implementation of mitigation measures. The proposed project would be required to comply with the previously required mitigation measures set forth in the FPASP Final EIR/EIS. Because the FPASP Final EIR/EIS already included the anticipated emissions associated with the proposed project in the analysis, implementation of the proposed project would not be considered to substantially modify or worsen the impacts previously identified for buildout of the project per the FPASP Final EIR/EIS.

The proposed project consists of construction of backbone infrastructure for buildout of the FPASP, including roadway construction of the street system and utilities infrastructure such as pipelines, manholes, sewer mains, lift stations, booster pumps, pump stations, storage tanks, and basins. The proposed project is merely placing the necessary infrastructure to accommodate future development projects in the area. Each future development within the FPASP would be required to undergo project-specific environmental review, including a site- and project-specific air quality and GHG emissions

analysis. Estimates of GHG emissions associated with each future development would include indirect emissions, such as emissions associated with supplying and treating water and wastewater, and water distribution, particular to each project. Thus, emissions associated with operation of any of the backbone infrastructure (e.g., pumps, lift stations, etc.) would be analyzed under each future development project. The proposed project would not introduce any new population to the area or involve any long-term area, energy, mobile, or waste sources of GHG emissions. Although the project would involve the placement of roadways, the project does not propose any land uses that would generate vehicle trips. Therefore, implementation of the proposed project would not be considered to generate any long-term emissions of GHG and would not cause a substantial incremental contribution to global climate change during operations.

A threshold of significance for GHG emissions has not been established by the City or the SMAQMD. Construction-related GHG emissions are a one-time release and are, therefore, not typically expected to generate a significant contribution to global climate change, as global climate change is inherently a cumulative effect that occurs over a long period of time and is quantified on a yearly basis. Nonetheless, the proposed project's short-term construction-related GHG emissions have been estimated for informational purposes. The project's emissions were estimated using SMAQMD's RoadMod. According to the RoadMod results, the proposed project would result in estimated maximum annual unmitigated construction-related GHG emissions of 1,537 $MTCO_2e$/year (see Appendix A).

Because the proposed project would be contributing towards the identified significant and unavoidable impact, the proposed project's generation of GHG emissions could be considered to conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs, and impacts would be ***potentially significant***.

Mitigation Measure(s)

Implementation of the following mitigation measure would reduce the potential impacts to a *less-than-significant* level.

VII-1. *Prior to releasing a request for bid to contractors for construction of the proposed project, the project applicant shall stipulate that, at a minimum, the following SMAQMD GHG reduction measures be implemented in the respective request for bid, as well as the subsequent construction contract with the selected primary contractor:*

- *Improve fuel efficiency from construction equipment:*
  - *Reduce unnecessary idling (modify work practices, install auxiliary power for driver comfort);*
  - *Perform equipment maintenance (inspections, detect failures early, corrections);*
  - *Train equipment operators in proper use of equipment;*
  - *Use the proper size of equipment for the job; and*

    - *Use equipment with new technologies (repowered engines, electric drive trains).*
- *Use alternative fuels for electricity generators and welders at construction sites such as propane or solar, or use electrical power.*
- *Use a CARB-approved low-carbon fuel, such as biodiesel or renewable diesel for construction equipment. (Emissions of NO_X from the use of low carbon fuel must be reviewed and increases mitigated.) Additional information about low-carbon fuels is available from CARB's Low Carbon Fuel Standard Program.*
- *Encourage and provide carpools, shuttle vans, transit passes and/or secure bicycle parking for construction worker commutes.*
- *Reduce electricity use in the construction office, if applicable, by using compact fluorescent bulbs, powering off computers every day, and replacing heating and cooling units with more efficient ones.*
- *Recycle non-hazardous construction and demolition debris (goal of at least 75 percent by weight).*
- *Use locally sourced or recycled materials for construction materials (goal of at least 20 percent based on costs for building materials, and based on volume for roadway, parking lot, sidewalk and curb materials).*
- *Minimize the amount of concrete used for paved surfaces or use a low carbon concrete option.*
- *Produce concrete on-site if determined to be less emissive than transporting ready mix.*
- *Use EPA-certified SmartWay trucks for deliveries and equipment transport. Additional information about the SmartWay Transport Partnership Program is available from ARB's Heavy-Duty Vehicle Greenhouse Gas Measure (ARB 2009c) and EPA (EPA 2009).*
- *Develop a SMAQMD-approved plan to efficiently use water for adequate dust control. This may consist of the use of non-potable water from a local source.*

If the above-listed SMAQMD GHG reduction measures are determined to be infeasible by the project applicant, the applicant shall submit to SMAQMD a report that substantiates why specific measures are considered infeasible for construction of the proposed project. The report, including the substantiation for not implementing particular GHG reduction measures, shall be subject to review and approval by SMAQMD prior to initiating construction.

VIII. HAZARDS AND HAZARDOUS MATERIALS. *Would the project:*	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	✖	☐
b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the likely release of hazardous materials into the environment?	☐	☐	✖	☐
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	✖	☐
d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	✖	☐	☐
e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	✖	☐
f. For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	✖	☐
g. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	✖	☐
h. Expose people or structures to the risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	✖	☐

Discussion

a,b,c. The proposed project consists of two main components: 1) updates to the SDMP, WMP, and SMP prepared for the implementation of the FPASP Project; and 2) South of US 50 Backbone Infrastructure Buildout.

Potential Construction Hazards

Operation of the proposed project would not require the storage or hauling of hazardous materials. Construction of the proposed project site south of, north of, and crossing US 50 requires excavation and movement of on-site soils. Construction activities would involve

the use of heavy equipment, which would contain fuels and oils, and various other products such as concrete, paints, and adhesives. Construction of the proposed project could expose construction workers, the public, or the environment to hazardous materials through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. Small quantities of potentially toxic substances (e.g., petroleum and other chemicals used to operate and maintain construction equipment) would be used and removed from the project site and transported to and from the site during construction. Accidental releases of small quantities of these substances could contaminate soils and degrade the quality of surface water and groundwater, resulting in a public safety hazard.

The amount of hazardous materials transported throughout the project site during construction activities is likely to include the use, storage, and transport of hazardous materials in compliance with local, state, and Federal regulations during project construction. Transportation of hazardous materials on area roadways is regulated by the California Highway Patrol (CHP) and Caltrans, and use of these materials is regulated by the Department of Toxic Substances Control (DTSC), as outlined in Title 22 of the CCR. In addition, impacts related to the creation of significant hazards to the public through routine transport, use, disposal, and risk of upset resulting from buildout of the FPASP area were previously analyzed in the FPASP Final EIR/EIS and were determined to be less than significant. The proposed changes would not significantly alter the conclusion of the Final EIR/EIS.

North of US 50 Water Improvements: Nearby Schools

The nearest school to the WTP is St. John Notre Dame School located approximately 0.15 miles to the southwest. The anticipated water pipeline alignment would be in the vicinity of two schools: Folsom Lake College is located approximately 0.22 miles east of the pipeline portion near East Bidwell Street; and Folsom Middle School is located approximately 0.40 miles to the east of the pipeline portion near Oak Avenue Parkway.

Although the WTP is located within one-quarter mile of an existing school, the proposed booster pump station at the WTP would not emit hazardous emissions. As such, the proposed improvements would not involve hazardous emissions or the handling of hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.

US 50 Crossings: Nearby Schools

The nearest school to the proposed water line crossing is Vista Del Lago High School located approximately 0.68 miles northeast of the proposed improvements at the US 50 crossing. The nearest school to the proposed sewer line crossing is Folsom High School located approximately 0.54 miles northwest of the proposed improvements at the US 50 crossing. As such, the proposed improvements would not involve hazardous emissions or the handling of hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.

South of US 50 Backbone: Nearby Schools

The nearest school to the proposed improvements south of US 50 is Folsom High School located approximately 0.42 miles north of the northwestern boundary of the project site. As such, the proposed improvements would not involve hazardous emissions or the handling of hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.

Conclusion

The proposed project does not propose any operations that would involve the routine transport, use, disposal, or risk of upset of hazardous materials. Construction of the proposed project may involve the use of heavy equipment, which would contain fuels and oils, and various other products such as concrete, paints, and adhesives; however, the project contractor(s) would be required by law to implement and comply with existing hazardous material regulations, resulting in a ***less-than-significant*** impact related to the routine transport, use, disposal, or upset of hazardous materials within one-quarter mile of an existing or proposed school.

d. The project site north of and crossing US 50 is not on the Cortese list. According to the FPASP Final EIR/EIS, a portion of the Aerojet Superfund site (Area 40) is located in the FPASP area, and is undergoing investigation and remediation under the direction of EPA and DTSC. An approximately 54-acre portion of the FPASP area is part of a larger carve-out area that has been removed from the Superfund site. The carve-out area is no longer a Cortese-listed site.

Soil and groundwater investigations have been conducted at Area 40 since 1985. The investigations have identified the presence of soil and groundwater contamination in the FPASP area, including VOCs, metals, and perchlorate. Area 40 includes two areas of soil where concentrations of VOCs, metals, perchlorate, dioxins, and furans exceed human health or ecological screening levels. Compliance with Sacramento Local Agency Formation Commission (LAFCo) Resolution 1196 would require demonstration that the on-site surface contamination has been remediated to standards determined to be acceptable by federal and State regulatory agencies.

Although enforcement of LAFCo Resolution 1196 would ensure that the proposed project would not pose a risk to human health, ongoing remediation at the federally listed site may delay or limit the availability of some development at or near the contaminated sites. The level of remediation effort at the sites may limit future development. Ongoing regulatory review and approvals required by EPA, DTSC, and the Central Valley RWQCB would ensure that any site-specific limitations are identified and required when the land is made available for development. Aerojet will also retain right of access to certain properties to operate and maintain the monitoring wells or to conduct other remediation activities.

The proposed infrastructure north of and crossing US 50 would not be located in close proximity to the Area 40 site discussed above. However, some of the improvements south of US 50 would be located in or adjacent to the Area 40 boundary. Mitigation Measures 3A.8-3a, 3A.8-3b, and 3A.8-3c from the FPASP Final EIR/EIS are required for any

activities within Area 40 and the basin west of Prairie City Road. The proposed project would not significantly alter the conclusion of the Final EIR/EIS. As such, without mitigation, a ***potentially significant*** impact could result.

Mitigation Measure(s)
Implementation of the following mitigation measures would reduce the potential impacts to a *less-than-significant* level.

South of US 50 Backbone

VIII-1. *The project applicant(s) for all improvements south of US 50 that would occur in or adjacent to the Area 40 boundary shall submit copies of the improvement plans to Aerojet, DTSC, the Central Valley RWQCB, Folsom Community Development Department, or any successor in interest for review and approval. Aerojet, DTSC, and the Central Valley RWQCB or any successor shall work with the project applicant(s) to establish the preservation, modification, or closure of existing groundwater monitoring wells.*

VIII-2. *Prior to the approval of grading plans for all improvements south of US 50 that would occur in or adjacent to the Area 40 boundary, the project applicant(s) shall provide notice to Aerojet or any successor in interest and DTSC, the Central Valley RWQCB, and the Folsom Community Development Department of the location, nature, and duration of construction activities at least 30 days before construction activities begin. Remedial actions during construction activities within the Area 40 boundary or on lands used for monitoring or other remediation activities, as required by DTSC, RWQCB, and/or the EPA, may include, but are not limited to:*

- *Monitoring;*
- *Installation of vertical barriers;*
- *Biological, chemical, and/or physical treatment;*
- *Extraction, and/or*
- *Pump and treat activities.*

Before the approval of grading plans which include the detention basin west of Prairie City Road, the project applicant(s) shall work with Aerojet, DTSC, and the Central Valley RWQCB or any successor to schedule the timing of construction activities to prevent potential conflicts with remediation activities.

VIII-3. *The project applicant(s) for all improvements south of US 50 that would occur in or adjacent to the Area 40 boundary, the detention basin west of Prairie City Road, or lands subject to monitoring or other remediation activities shall provide notification in writing to the City that the required*

DTSC notification obligations have been fulfilled. Evidence of the method of notification required by DTSC shall be submitted to the Folsom Community Development Department before approval of improvement plans.

e,f. The nearest airport to any portion of the project site is the Cameron Airpark, located approximately six miles northeast of the site. As such, the project site is not located within two miles of any public airports or private airstrips, and does not fall within an airport land use plan area. In addition, the project does not involve any proposed uses that would directly result in an increase in populations in the area. Furthermore, the FPASP Final EIR/EIS determined that impacts related to private airstrips or public airports were negligible. The proposed project would not alter the conclusion of the Final EIR/EIS. Therefore, the project would not result in a safety hazard for people working in the project area, and impacts would be ***less than significant***.

g. The proposed project would not physically interfere with an emergency plan because the project would not permanently alter the existing street system of any major roadways. Although construction of the proposed improvements located within roadway rights-of-way would temporarily alter traffic flow, a traffic control plan is required by Mitigation Measure XVI-1. Measures typically used in traffic control plans include advertising of planned lane closures, warning signage, a flag person to direct traffic flows when needed, and methods to ensure continued access by emergency vehicles.

The proposed roadways south of US 50 would include sufficient ingress and egress routes to ensure public safety in the event of an emergency. In addition, impacts related to interfering with an adopted emergency response or emergency evacuation plan resulting from buildout of the FPASP area were previously analyzed in the FPASP Final EIR/EIS and were determined to be less than significant. The proposed project would not alter the conclusion of the Final EIR/EIS. Therefore, impacts related to emergency response or evacuation plans would be ***less than significant.***

h. California Public Resource Code Sections 4201-4204 and Government Code 51175-51189 require identification of fire hazard severity zones within the state of California. Fire hazard severity zones are measured qualitatively, based on: vegetation, topography, weather, crown fire potential (a fire's tendency to burn upwards into trees and tall brush), and ember production and movement within the area of question. Fire prevention areas considered to be under state jurisdiction are referred to as "state responsibility areas." In state responsibility areas, the California Department of Forestry and Fire Protection is required to delineate three hazard ranges: moderate, high, and very high "local responsibility areas," which are under the jurisdiction of local entities (e.g., cities, counties), are required to only identify very high fire hazard severity zones.

According to the Fire and Resource Assessment Program map for Sacramento County created by the California Department of Forestry and Fire Protection, the project site crossing US 50, south of US 50, and north of US 50 are not near an area of high or extremely high fire hazard severity. The project does not include the construction or

placement of housing in the area. As such, the proposed project would not expose people or structures to the risk of wildland fires, and impacts related to wildland fires would be ***less than significant***.

IX. HYDROLOGY AND WATER QUALITY. *Would the project:*	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Violate any water quality standards or waste discharge requirements?	☐	✖	☐	☐
b. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (i.e., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	✖	☐
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	☐	☐	✖	☐
d. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	☐	☐	✖	☐
e. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	✖	☐	☐
f. Otherwise substantially degrade water quality?	☐	✖	☐	☐
g. Place housing within a 100-year floodplain, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	✖	☐
h. Place within a 100-year floodplain structures which would impede or redirect flood flows?	☐	☐	✖	☐
i. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam.	☐	☐	✖	☐
j. Inundation by seiche, tsunami, or mudflow?	☐	☐	✖	☐

Discussion

a,e,f. Surface water quality can be adversely affected by erosion during project construction. Construction activities disturbing one or more acres are required under the federal CWA to comply with the State Water Resources Control Board (SWRCB) General Construction Activity Stormwater Discharge Permit.

North of US 50 Water Improvements

The proposed project includes two program-level improvements north of US 50. A new booster pump station will eventually be installed at the existing WTP for the ultimate project demand (8.8 MGD). In addition, a water transmission pipeline will eventually be installed from East Bidwell Street to the WTP. The transmission pipeline would extend north along East Bidwell Street, north along Oak Avenue Parkway, and eventually west to the WTP.

Implementation of the aforementioned improvements north of US 50 would include soil removal, trenching and pipe installation, and grading. Construction activities associated with development of the improvements north of US 50 could result in the accidental release of other pollutants to surface waters, including oil and grease, petroleum hydrocarbons, waste concrete, and wash water. The contaminated runoff could enter Alder Creek or other on-site drainage channels and ultimately drain off-site to downstream water bodies including Lake Natoma and the Lower American River.

According to the FPASP Final EIR/EIS, implementation of Mitigation Measure 3A.9-1 would reduce potentially significant impacts related to water quality to a less-than-significant level. Mitigation Measure 3A.9-1 requires the project applicant(s) of all projects disturbing one or more acres (including phased construction of smaller areas which are part of a larger project) to obtain coverage under the SWRCB's National Pollutant Discharge Elimination System (NPDES) stormwater permit for general construction activity. Disturbance associated with the proposed project would disturb more than one acre. The permit is required in order to control both construction and operational activities that could adversely affect water quality. Permit applicants are required to prepare and retain a Stormwater Pollution Prevention Plan (SWPPP) that describes the site, erosion and sediment controls, means of waste disposal, implementation of approved local plans, control of post-construction sediment and erosion control measures and maintenance responsibilities, non-stormwater management controls, and Best Management Practices (BMPs).

US 50 Crossings

The water and sewer improvements are proposed to cross US 50 near East Bidwell Street and Prairie City Road, respectively. The areas proposed for construction north of and crossing US 50 contain existing roadways and existing development. The area proposed for development of the water line crossing near East Bidwell Street and US 50 contains industrial and commercial development north of US 50. The area proposed for development of the sewer line crossing US 50, approximately 0.5 miles east of Prairie City Road, contains commercial development north of US 50 and open space south of US 50.

Implementation of the improvements crossing and north of US 50 would include soil removal, trenching and pipe installation, grading, and revegetation. Construction activities associated with development of the US 50 crossings could result in the accidental release of other pollutants to surface waters, including oil and grease, petroleum hydrocarbons,

waste concrete, and wash water. The contaminated runoff could enter Alder Creek or other on-site drainage channels and ultimately drain off-site to downstream water bodies including Lake Natoma and the Lower American River.

As noted above, implementation of Mitigation Measure 3A.9-1 would reduce potentially significant impacts related to water quality to a less-than-significant level. Mitigation Measure 3A.9-1 requires the project applicant(s) of all projects disturbing one or more acres (including phased construction of smaller areas which are part of a larger project) to obtain coverage under the SWRCB's NPDES stormwater permit for general construction activity. To obtain coverage under the NPDES permit, the preparation and implementation of a SWPPP and BMPs is required.

South of US 50 Backbone

The approximately 3,513.4-acre FPASP area, which contains the majority of the proposed project site, is currently vacant. The project site is generally undeveloped, with the exception of the following: one single-family residence and associated agricultural outbuildings located on the western side of the FPASP area; four active communication towers, associated support facilities, and dirt access roads located in the northeastern portion of the FPASP area; Scott Road; and Placerville Road and the adjacent railroad tracks.

The construction of the proposed updates to the SDMP, WMP, SMP, as well as roadway construction would include soil removal, trenching and pipe installation, fabrication of concrete channels, grading, and revegetation. As discussed above, according to the FPASP Final EIR/EIS, implementation of Mitigation Measure 3A.9-1 would reduce potentially significant impacts related to water quality to a less-than-significant level. To obtain coverage under the NPDES permit, the preparation of a SWPPP and the implementation of BMPs are required. Implementation of BMPs would ensure that the proposed improvements would not provide substantial additional sources of polluted runoff.

Conclusion

Mitigation Measure 3A.9-1 requires the acquisition of the appropriate regulatory permits, as well as the preparation and implementation of a SWPPP and BMPs. Compliance with the required NPDES permit would ensure that runoff during construction and operation of the proposed project would not violate any waste discharge requirements or substantially degrade water quality. Without the preparation and implementation of a SWPPP and BMPs, a ***potentially significant*** impact related to water quality and polluted runoff would result.

Mitigation Measure(s)
Implementation of the following mitigation measure would reduce the potential impacts to a *less-than-significant* level.

South of US 50 Backbone, US 50 Crossings, and North of US 50 Water Improvements

IX-1. Prior to issuance of grading permits, the applicant(s) shall obtain an NPDES Construction General Permit from the Central Valley Regional Water Quality Control Board. The permit is required to control both construction and operation activities that may adversely affect water quality. To obtain coverage under this General Permit, the appropriate Legally Responsible Person (LRP) must electronically file Permit Registration Documents (PRDs), which include a Notice of Intent (NOI), a SWPPP, and other documents required by the General Permit, and mail the appropriate permit fee to the SWRCB. In addition, a Risk Level Assessment shall be completed in accordance with SWRCB Order No. 2009-0009-DWQ. The SWPPP shall describe the erosion and sediment controls using BMPs and Best Available Technologies (BATs). The SWPPP shall also include means of waste disposal, implementation of approved local plans, control of post-construction sediment and erosion control. Typical BMPs that could be used during construction of the proposed projects include, but are not limited to temporary facilities such as straw wattles and sandbags. Temporary facilities will capture a majority of the siltation resulting from construction activities prior to discharging into existing natural channels. The construction contractor shall be required to comply with the permit and implement, monitor, and maintain all BMPs during construction to ensure they function properly for review and approval of the City Engineer.

b. North of US 50 Water Improvements

The proposed project includes two program-level improvements north of US 50. A new booster pump station would eventually be installed at the existing WTP for the ultimate project demand (8.8 MGD). In addition, a water transmission pipeline will eventually be installed from East Bidwell Street to the WTP. The transmission pipeline would extend north along East Bidwell Street, north along Oak Avenue Parkway, and eventually west to the WTP.

The WTP is underlain by Argonaut-Auburn complex, three to eight percent slopes. Argonaut-Auburn complex has moderately high permeability and is well drained. According to the FPASP Final EIR/EIS, impacts related to groundwater recharge resulting from full buildout of the FPASP were deemed less than significant. The booster pump stations would be located at the WTP which has been previously developed with internal roadways and other infrastructure. The water pipeline would be located underground and thus would not substantially increase the amount of impervious surfaces in the area. As such, the proposed improvements north of US 50 would not significantly impact groundwater recharge in the area.

US 50 Crossings

The water and sewer improvements are proposed to cross US 50 near East Bidwell Street and Prairie City Road. The area proposed for construction of the water line crossing near

East Bidwell Street and US 50 contains industrial and commercial development north of 50. The area proposed for construction of the sewer line crossing US 50 approximately 0.5 miles east of Prairie City Road contains commercial development north of US 50 and open space south of US 50.

According to the FPASP Final EIR/EIS, soils in the FPASP area have a poor capacity for groundwater recharge and impacts related to groundwater recharge resulting from full buildout of the FPASP were deemed less than significant. The water and sewer pipelines would be located underground and thus would not substantially increase the amount of impervious surfaces in the area. As such, the proposed improvements crossing US 50 would not significantly impact groundwater recharge in the area.

South of US 50 Backbone

As noted above, the on-site soils south of US 50 have a poor capacity for groundwater recharge. The amount of impervious surfaces associated with the proposed backbone improvements south of US 50 is relatively minimal and the site is located adjacent to open space areas, which would allow adequate groundwater recharge in the project area. The minimal addition of impervious surfaces would not substantially interfere with groundwater recharge. In addition, the FPASP Final EIR/EIS concluded that impacts related to groundwater recharge at full buildout of the FPASP area (including backbone) were less than significant. The proposed project would not alter the conclusion of the Final EIR/EIS. Because the project would not deplete groundwater supplies or substantially interfere with groundwater recharge, a less-than-significant impact would occur.

Conclusion

The proposed project would not introduce new population or new wells to the area. As such, groundwater supplies would not be depleted. Therefore, impacts related to groundwater recharge would be ***less than significant.***

c, d. North of US 50 Water Improvements

The proposed project includes two program-level improvements north of US 50. A new booster pump station would eventually be installed at the existing WTP for the ultimate project demand (8.8 MGD). In addition, a water transmission pipeline will eventually be installed from East Bidwell Street to the WTP. The transmission pipeline would extend north along East Bidwell Street, north along Oak Avenue Parkway, and eventually west to the WTP.

During construction of the improvements north of US 50, construction could temporary disturb the drainage in the area. However, as noted above, projects that disturb one or more acres (including phased construction of smaller areas which are part of a larger project) are required to obtain coverage under the SWRCB's NPDES stormwater permit for general construction activity. Permit applicants are required to prepare and retain a SWPPP that describes the site, erosion and sediment controls, means of waste disposal, implementation

of approved local plans, control of post-construction sediment and erosion control measures and maintenance responsibilities, non-stormwater management controls, and BMPs. Coverage under the NPDES stormwater permit would ensure that any potential impacts related to drainage would be alleviated with implementation of the SWPP and BMPs.

The booster pump station at the WTP would be located on previously disturbed land and would not result in substantial alterations of the drainage pattern in the vicinity of the WTP. The water transmission pipeline is anticipated to be buried beneath existing roadways rights-of-way in an area surrounded by existing development and potentially within areas of open space. Temporary construction activity would be required to implement the measures included in the SWPPP. Once burial of the pipeline is complete and the area is backfilled, the drainage pattern of the area would return to the pre-development conditions.

US 50 Crossings

The proposed project includes two improvements crossing US 50. As part of the WMP update, new water transmission pipelines are proposed to extend from the intersection of East Bidwell Street and Iron Point Road in one of two alignments, or a combination of both. One alignment would extend southeasterly along Placerville Road, under the existing US 50 bridge structure. The second prospective alignment would extend southerly along East Bidwell Street, over US 50 using the existing overpass structure. In addition, the crossing of US 50 may be achieved by jack-and-bore.

As part of the SMP update, new sewer transmission pipelines are proposed to extend from Easton Valley Parkway, which would be located approximately 0.5 miles east of Prairie City Road, crossing US 50 under the Highway and north to Iron Point Road. The portion of the sewer pipeline just south of US 50 would be buried underground. Once buried, the drainage pattern of the area would be similar to pre-development conditions.

As the majority of the aforementioned improvements would occur in a previously-developed area, the improvements would only slightly alter the drainage pattern of the area, if at all.

South of US 50 Backbone

A Storm Drainage Master Plan was completed for the project site south of US 50 in October 2007. The Master Plan addresses flood hazards, identified flood protection measures, and documents the downstream floodwater surface elevations for full buildout of the FPASP area (including backbone infrastructure). In general, the drainage flow paths delineated in the Storm Drainage Master Plan remained similar under the proposed project conditions with some changes based on grading and roadways. While individual drainage basin drainage patterns may change as a result of construction south of US 50, the overall flow path to the eight major outlets from the project boundaries would not change. The Storm Drainage Master Plan ensures that any potential impacts related to drainage and flooding would be less than significant.

During construction of the improvements south of US 50, construction could temporarily disturb the drainage in the area. However, as noted above, the proposed project is required to obtain coverage under the SWRCB's NPDES stormwater permit for general construction activity. Permit applicants are required to prepare and retain a SWPPP that describes the site, erosion and sediment controls, means of waste disposal, implementation of approved local plans, control of post-construction sediment and erosion control measures and maintenance responsibilities, non-stormwater management controls, and BMPs. Coverage under the NPDES stormwater permit would ensure that any potential impacts related to drainage and surface runoff would be alleviated with implementation of the SWPP and BMPs.

Conclusion

Although the project would temporarily modify the existing drainage pattern on the site, the amount of impervious surfaces proposed for the project is relatively minimal compared to buildout of the FPASP. The proposed stormwater drainage system south of US 50 would maintain stormwater flows originating in the project area during and after buildout. Because the proposed project would be required to obtain coverage under the SWRCB's NPDES stormwater permit and implement BMPs during construction, a ***less-than-significant*** impact related to alteration of the site's drainage pattern would result.

g-i. According to Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map, Panel Numbers 06067C0119H, 0607C0140H, 06067C0275H, and 06067C0250H, the proposed project (including the site north of, crossing, and south of US 50) is located in Flood Zone X, which is defined as an area of minimal flood hazard from the principal source of flood in the area and determined to be outside of the 0.2 percent annual chance floodplain. Therefore, the project site is not located within the 100-year floodplain. Because buildout of the proposed project would not place structures within the 100-year floodplain that would impede or redirect flood flows, and would not expose people or structures to a significant risk of loss, injury, or death involving flooding, the project would result in a ***less-than-significant*** impact related to development within the 100-year floodplain.

j. Tsunamis are defined as sea waves created by undersea fault movement. A tsunami poses little danger away from shorelines; however, when tsunamis reach the shoreline, high swells of water break and wash inland with great force. A seiche is a long-wavelength, large-scale wave action set up in a closed body of water such as a lake or reservoir, with destructive capacity that is not as great as that of a tsunami. Mudflow is movement of a large mass of loose sediment (commonly suspended particles and silt) and water.

The project area is located over 100 miles from the Pacific Ocean. Tsunamis typically affect coastlines and areas up to one-quarter-mile inland. Due to the project's distance from the coast, potential impacts related to a tsunami are minimal. According to the FPASP Final EIR/EIS, although an 1868 earthquake along the Hayward fault in the San Francisco Bay Area is known to have generated a seiche along the Sacramento River, the affected area was located in the Sacramento-San Joaquin River Delta.

In addition, the project site is not susceptible to impacts resulting from a seiche because of the site's distance from any enclosed bodies of water. The nearest enclosed body of water to the project site south of and crossing US 50 is the Willow Springs Reservoir, which is located approximately 0.91 miles or further from the project site to the north. The nearest enclosed body of water to the project site north of US 50 is Folsom Lake, which is located approximately 0.93 miles or further from the project site to the northeast. Therefore, a ***less-than-significant*** impact would occur related to inundation by seiche, tsunami, or mudflow.

X. LAND USE AND PLANNING. *Would the project:*	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Physically divide an established community?	☐	☐	☐	✖
b. Conflict with any applicable land use plans, policies, or regulations of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating on environmental effect?	☐	☐	✖	☐
c. Conflict with any applicable habitat conservation plan or natural communities conservation plan?	☐	☐	☐	✖

Discussion

a. The booster pump stations at the WTP north of US 50 would be contained within the WTP property boundary which is currently contained by fencing. As such, improvements at the WTP would not divide an established community. The future water pipeline alignment would be buried underground in existing roadway rights-of-way. As such, the anticipated pipeline would not divide an established community.

The water and sewer improvements are proposed to cross US 50 near East Bidwell Street and Prairie City Road. The areas proposed for construction north of and crossing US 50 contain existing roadways and development. The area proposed for construction of the water line crossing near East Bidwell Street and US 50 contains industrial and commercial development north of US 50. The area proposed for construction of the sewer line crossing US 50 approximately 0.5 miles east of Prairie City Road contains commercial development north of US 50 and open space south of US 50. Consistent with the conclusion of the FPASP Final EIR/EIS, the proposed water and sewer transmission pipelines would not physically divide an established community.

The approximately 3,514.4-acre FPASP area is currently vacant and is bounded by Prairie City Road on the west, US 50 on the north, White Rock Road on the south, and the Sacramento County/El Dorado County boundary on the east. The project site south of US 50 consists of grazing land, and only one existing single-family residence and associated agricultural outbuildings located on the western side of the FPASP area. Future pipeline alignment locations and other infrastructure improvement projects included in the Master Plans were designed to be within existing or proposed City right-of-ways, where feasible, as identified in the FPASP Circulation Diagram. Consistent with the conclusion of the FPASP Final EIR/EIS, the proposed improvements south of US 50 would not physically divide an established community.

Because an established community does not exist in the vicinity of the project site, the project would have ***no impact*** related to the physical division of an established community.

b. In June 2001, the Sacramento LAFCo approved the City's sphere of influence amendment application (Resolution No. LAFC 1196), and the City's sphere of influence was expanded to include the project site south of US 50. The proposed project must be consistent with the conditions identified in Resolution No. LAFC 1196 for annexation of the FPASP area. LAFCo identified a condition in the resolution to ensure annexation of the FPASP area would include adequate services for new development within the annexation area. The proposed updates to the SDMP, SMP, and WMP would satisfy the condition for adequate services for the annexation area.

Although the Master Plans are slightly revised, the proposed improvements would support future buildout of the FPASP. The proposed improvements would result in a logical extension of existing urban areas of the City because regional and local roadway improvements and adequate utilities and public services to achieve service standards would be provided. The proposed roadways are consistent with the FPASP Circulation Diagram alignments. As such, the proposed backbone infrastructure improvements would not conflict with an applicable land use plan, policy, or regulation.

The project is consistent with the land use and zoning designation for the site. A modification to land uses in the area would not occur. Development of the project would not interfere with the existing uses and would not involve any identifiable potential for conflict with surrounding land uses. Therefore, the proposed project would not conflict with any applicable land use plans, policies, or regulations and would result in a ***less-than-significant*** impact.

c. The South Sacramento Habitat Conservation Plan (SSHCP) is currently being drafted by Sacramento County, other member cities, the United States Fish and Wildlife Service, and the California Department of Fish and Wildlife. The City of Folsom, however, did not participate with the plan. Therefore, the project site is located in an area that does not have an approved Habitat Conservation Plan, Natural Community Conservation Plan, or local, regional, or state habitat conservation plan. As such, ***no impact*** related to said Plans would occur.

XI. MINERAL RESOURCES. *Would the project:*	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	✖	☐
b. Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	✖	☐

Discussion

a,b. The presence of mineral resources is dependent on the type of geologic formation, which varies from location to location and therefore is site-specific. Sacramento County contains a wide variety of mineral resources. Both the U.S. Geological Survey and California Geological Survey have evaluated the potential locations and production capacity of various types of extractive resources throughout Sacramento County. The project site, both south of and crossing US 50, is not delineated as an area of known mineral resources in either the City of Folsom or Sacramento County General Plans. However, the California Division of Mines and Geology (CDMG) has designated the project site south of US 50 as an area that may contain kaolin clay.

North of US 50 Water Improvements

The project site north of US 50 is not delineated as an area of known mineral resources in either the City of Folsom or Sacramento County General Plans. The project site north of US 50 is currently developed and subsurface excavations previously occurred during construction of the existing roadway, as well as residential and commercial development north of US 50. As such, an economically viable on-site mining operation the US 50 crossings is highly unlikely.

Furthermore, in 2003, the City of Folsom determined that because the City did not have any active mining operations, and because none were expected in the future, that the City would not update the Surface Mining and Reclamation Act (SMARA) ordinance. Therefore, impacts related to the loss of availability of a known or locally-important mineral resource would be less than significant.

South of US 50 Backbone

The following discussion pertains to the proposed improvements south of US 50.

Kaolin Clay

The proposed project site south of US 50 is located within the Sacramento-Fairfield Production-Consumption Region designated by the CDMG and may contain a deposit of

kaolin clay. The western edge of the project site south of US 50 is zoned MRZ-3 for kaolin clay. The MRZ-3 classification was applied by CDMG because that area roughly corresponds to the location of the Ione Formation in the project site south of US 50. The Ione Formation is known to contain kaolin clay in other locations in northern California. None of the five geotechnical reports prepared for the project site south of US 50 included in the FPASP Final EIR/EIS included an investigation of this area. Therefore, whether or not an economically valuable deposit of kaolin clay is present is currently unknown. If an economically viable deposit of kaolin clay were present, the deposit would continue to be available for mining following construction of the proposed backbone infrastructure. Nevertheless, because the potential presence of kaolin clay cannot be ruled out at this time, impacts related to the loss of availability of a known or locally-important mineral resource would be considered potentially significant. However, Mitigation Measure 3A.7-9 was included in the FPASP Final EIR/EIS to address impacts to kaolin clay.

Construction Aggregate

The western edge of the project site south of US 50 is classified by CDMG as MRZ-1 for construction aggregate, "areas where adequate information indicates that no significant mineral deposits are present or where it is judged that little likelihood exists for their presence." However, the majority of the project site south of US 50 is classified by CDMG as MRZ-3 for construction aggregate, "areas containing mineral deposits, the significance of which cannot be evaluated from existing data." According to the FPASP Final EIR/EIS, portions of the western third of the project site south of US 50 contain piles of cobbles deposited during dredger gold mining operations in the 1800s and early 1900s. Similar piles of dredge tailings are present in nearby areas of Rancho Cordova, and south of White Rock Road in Sacramento County, and those areas are actively being mined or are proposed for mining as aggregate sand and gravel resource. However, the dredge tailings present within the project site south of US 50 are located primarily within the Alder Creek drainage. Alder Creek is a perennial watercourse, and the drainage and riparian resources are protected by both Sacramento County and City of Folsom General Plan policies and ordinances.

As noted above, the City of Folsom determined that because the City did not have any active mining operations, and because none were expected in the future, that the City would not update the SMARA ordinance. The project site south of US 50 is not delineated as an area of known mineral resources in either the City of Folsom or Sacramento County General Plans. Finally, according to the FPASP Final EIR/EIS, even if mining of the Alder Creek dredge tailings was permissible, the tailings are not present in a large enough concentration that would warrant an economically viable on-site mining operation.

Conclusion

The Ione Formation is known to contain kaolin clay in other locations in northern California. The proposed backbone infrastructure does not preclude access to any potential kaolin clay deposits. Future development would be required to implement Mitigation Measure 3A.7-9 of the FPASP Final EIR/EIS, which requires data to be provided that

would allow the project applicant(s) and the lead agencies to determine whether or not economically valuable mineral resources are present in the MRZ-3 kaolin clay area of the FPASP area. The site is not identified by the City as a site containing mineral resources that would be of local, regional, or statewide importance. The project does not propose to excavate the site for mineral resources. As such, a ***less-than-significant*** impact related to the loss of mineral resources would occur.

XII. NOISE. *Would the project result in:*	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	✖	☐	☐
b. Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	✖	☐
c. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	✖	☐	☐
d. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	✖	☐
e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	✖
f. For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	✖

Discussion

a,c. The proposed project consists of water improvements north of US 50, US 50 water line and sewer line crossings, and the backbone infrastructure improvements south of US 50 (i.e., the water, sewer, drainage, and roadway improvements identified in the Project Description section of this IS/MND). The majority of the proposed improvements consist of underground pipelines that would carry water, sewer, or drainage flows to/from the proposed development areas south of US 50. Transmission of water, sewer, and drainage flows through underground pipelines would not generate noise. Therefore, the following operational noise discussion will be limited to other proposed, non-pipeline, backbone infrastructure improvements and their potential to generate operational noise.

According to Policy 30.4 of the Folsom General Plan, noise created by non-transportation-related noise sources associated with new projects or developments shall be controlled so as not to exceed the noise level standards as set forth in Table 6 below as measured at any affected residentially-designated lands or land use situated in either the incorporated or unincorporated areas.

Table 6
Noise Level Performance Standards for Non-Transportation-Related Noise

Category	Average Measured Hourly Exterior Noise Levels (dBA)		
	Cumulative Number of Minutes In Any One-Hour Time Period	Daytime (7AM-10PM)	Nighttime (10PM-7AM)
1	30	50	45
2	15	55	50
3	5	60	55
4	1	65	60
5	0	70	65

Source: City of Folsom. Folsom General Plan. January 1993.

North of US 50 Water Improvements

Once water demand within the FPASP exceeds two MGD, a new booster pump station, with 6.8 gallon per minute (gpm) firm capacity, will need to be installed at the WTP, as well as approximately 18,000 lineal feet of a 30-inch water supply pipeline from the WTP to Iron Point Road/East Bidwell Street. The WTP, located south of Natoma Street, near Folsom Prison, is bordered on the east and west by residential neighborhoods. South of the WTP is an open space/utility power line easement, and then a residential neighborhood. The location of the 6.8 gpm booster pump station within the WTP boundaries, and the final design of the booster station, are unknown at this time. Depending upon the final location and design details, the possibility exists that the new booster pump station could generate operational noise that could exceed the City's non-transportation-related exterior noise level standards (Table 6) at nearby backyard areas. This is considered a potentially adverse impact.

US 50 Crossings

A water booster station, serving water Zones 4 and 5 of the FPASP, would be located south of US 50, west of Placerville Road. Sensitive receptors are not located within this area. In addition, per the WMP, the booster facilities will be enclosed in masonry building structures with separate electrical/control rooms.

South of US 50 Backbone

The backbone system south of US 50 includes four water booster pump stations located throughout the FPASP. The booster pump stations would provide sufficient pressure to the higher elevations in the FPASP. Sensitive receptors are not located within this area. In addition, per the WMP, the booster facilities shall be enclosed in masonry building structures with separate electrical/control rooms.

For wastewater delivery, three lift stations are proposed within the FPASP area: the Easton Valley Parkway Lift Station, the Russell Ranch Lift Station, and the Mangini Temporary Lift Station. The Easton Valley Parkway Lift Station would be responsible for conveying the majority of the FPASP's wastewater to the Iron Point Road Pump Station, which is

owned and operated by SRCSD. The Easton Valley lift station would be located in the northwest corner of the FPASP area, and would require installation of an 8-inch sewer line under US 50 via jack-and-bore for purposes of connecting to the existing SRCSD lift station, south of Iron Point Road. The Mangini Temporary Lift Station alternative allows for the development of the upper reaches of the Street A/Oak Avenue sewer shed, independent of the development west of the Alder Creek crossing on Street A. The Mangini Temporary Lift Station would be located in the western portion of the FPASP area, and would require the construction of a temporary lift station at the eastern side of the Alder Creek crossing on Street A in the vicinity of the future high school site. The Mangini alternative would also include multiple force mains generally aligned north along the eastern edge of the Alder Creek open space to Easton Valley Parkway and then west along Easton Valley Parkway to the Easton Valley Lift Station (or directly to the SRCSD lift station).

Sensitive receptors are not located near the Easton Valley Lift Station, the Russell Ranch Lift Station, or the Mangini Temporary Lift Station site. Therefore, any noise generated by lift station pumps would not affect any existing sensitive receptors. It should be noted that future development of the FPASP area may place sensitive receptors within the vicinity of the proposed lift stations. However, the City typically encloses such utilities in masonry building structures to reduce operational noise to an acceptable level. At the time future development occurs, the lift stations will be in place and operating. Therefore, any resulting operational noise from the lift stations would be considered an existing condition to be considered in future environmental review. Any necessary setbacks from the lift stations or additional noise attenuation measures would be implemented, as necessary, with future development projects of the FPASP.

In addition, the proposed project would include the construction of four additional at-grade crossings on Placerville Road at Easton Valley Parkway, Street "A", Street "C", and New Placerville Road. Due to the intermittent use of the SPTC and per the Environmental Noise Assessment prepared for the Russell Ranch Project by j.c. brennan & associates, Inc., the typical Sound Exposure Level (SEL) for railroad line operations, while accounting for the effects of travel speed, warning horns, and other factors which may affect noise generation, the additional at-grade crossings would not increase the noise levels in the area in excess of the applicable standards at the potential future residential locations.[5]

Conclusion

The majority of proposed backbone infrastructure improvements consist of installation of underground water, sewer, and drainage transmission lines, which do not generate operational noise. With respect to above-ground backbone infrastructure improvements, the only proposed improvement that is located within the vicinity of existing sensitive receptors is the future, proposed 6.8 gpm WTP booster pump station. Depending upon the final location and design details of the booster pump station, the possibility exists that the new booster pump station could generate operational noise that could exceed the City's

[5] j.c. brennan & associates, Inc. *Environmental Noise Assessment, Russell Ranch*. October 29, 2014.

allowable exterior noise levels at nearby backyard areas. This is considered a ***potentially significant*** impact.

Mitigation Measure

Implementation of the following mitigation measure would reduce the above impact to a *less-than-significant* level.

XII-1 *Prior to approval of construction drawings for a new 6.8 gpm booster pump station at the Folsom Water Treatment Plant, an acoustical analysis shall be prepared to evaluate whether the proposed booster pump station could generate stationary noise levels that would exceed the City of Folsom's non-transportation-related exterior noise level standards (see Table 26-3) at nearby residential backyards. If it is determined that nearby residential backyards would be subject to exterior noise levels in excess of the General Plan noise standards, as a result of the proposed booster pump station, then the acoustical analysis shall include recommendations to reduce exterior noise levels at nearby backyards below the General Plan noise standards. This may include relocating the proposed booster pump station, or redesigning the pump station. The acoustical analysis shall be reviewed and approved by the Folsom Public Works Department prior to approval of construction drawings for the booster pump station improvements.*

b. Federal, state, or local regulatory standards for vibration do not exist; however, various criteria have been established to assist in the evaluation of vibration impacts, including vibration criteria based on human perception and structural damage risks developed by Caltrans. For most structures, Caltrans considers a peak-particle velocity (ppv) threshold of 0.2 inches per second (in/sec) at a distance of approximately 50 feet to be the level at which architectural damage (i.e., minor cracking of plaster walls and ceilings) to normal structures may occur. Continuous vibrations in excess of 0.1 in/sec ppv are identified by Caltrans as the minimum level perceptible for ground vibration.

Construction

The primary vibration-generating activities associated with the proposed project would occur during construction when activities such as grading and utility placement are taking place. Construction vibration impacts include human annoyance and building structural damage. Table 7 shows the typical vibration levels produced by construction equipment.

At a distance of 25 feet, construction-related vibration levels are expected to be 0.003 in/sec ppv to 0.21 in/sec ppv. At a distance of 50 feet, construction-related vibration levels are expected to be 0.001 in/sec ppv to 0.074 in/sec ppv. At a distance of 100 feet, construction related vibration levels are expected to be 0.0 in/sec ppv to 0.026 in/sec ppv.

Table 7
Vibration Levels for Varying Construction Equipment

Type of Equipment	Peak Particle Velocity @ 25 feet (inches/second)	Peak Particle Velocity @ 50 feet (inches/second)	Peak Particle Velocity @ 100 feet (inches/second)
Large Bulldozer	0.089	0.031	0.011
Loaded Trucks	0.076	0.027	0.010
Small Bulldozer	0.003	0.001	0.000
Auger/drill Rigs	0.089	0.031	0.011
Jackhammer	0.035	0.012	0.004
Vibratory Hammer	0.070	0.025	0.009
Vibratory Compactor/roller	0.210	0.074	0.026

Source: Federal Transit Administration, Transit Noise and Vibration Impact Assessment Guidelines, May 2006.

As discussed above, continuous vibrations in excess of 0.1 in/sec ppv are identified by Caltrans as the minimum level perceptible for ground vibration. Sensitive receptors would only be exposed to vibration levels exceeding the Caltrans threshold if located less than 50 feet from construction activities. The nearest sensitive receptors to the US 50 crossings and south of US 50 components are located approximately 330 feet or further from the proposed improvements. The proposed sewer line crossings would require bore and jack to cross underneath US 50. However, vibration levels perceived by the sensitive receptors would be below the Caltrans criteria. As such, the proposed backbone infrastructure improvements would not expose persons to, or generate, excessive groundborne vibration or groundborne noise levels.

Construction activities would be temporary in nature. In addition, it should be noted that a pavement breaker or pile driver would not be required for installation/construction of the proposed infrastructure improvements.

Operation

Equipment used during operation of the proposed project (e.g., pumps, heaters) typically does not produce significant vibration. Vibration of the equipment generally indicates the equipment is not operating properly, and vibration analyzers are often used to detect wear on pumps and other rotating equipment. Thus, excessive groundborne vibration is not expected to result from the operation of the proposed project.

Conclusion

Construction activities would be temporary in nature and conducted at a sufficient distance from any nearby structures, such that architectural damage would not occur as a result of construction equipment operations. Because the proposed project would not result in

exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels, impacts would be ***less than significant***.

d. The following section evaluates temporary construction noise, which would be generated during installation of the proposed backbone improvements. First, typical construction equipment and associated noise levels are presented in Table 8. As shown in Table 8, activities involved in construction would generate maximum noise levels ranging from 76 to 90 dB at a distance of 50 feet.

Table 8
Construction Equipment Noise

Type of Equipment	Maximum Level, dB at 50 feet
Auger Drill Rig	84
Backhoe	78
Compactor	83
Compressor (air)	78
Concrete Saw	90
Dozer	82
Dump Truck	76
Excavator	81
Generator	81
Jackhammer	89
Pneumatic Tools	85

Source: Roadway Construction Noise Model User's Guide. Federal Highway Administration. FHWA-HEP-05-054. January 2006.

Construction noise levels in the project vicinity from on-site activities would fluctuate depending on the particular type, number, and duration of usage for the varying equipment. The effects of construction noise largely depend on the type of construction activities occurring on any given day, noise levels generated by those activities, distances to noise sensitive receptors, and the existing ambient noise environment in the receptor's vicinity. Construction generally occurs in several discrete stages, each phase requiring a specific complement of equipment with varying equipment type, quantity, and intensity. The variations in the operational characteristics of the equipment change the effect the equipment has on the noise environment of the surrounding community for the duration of the construction process.

In addition, construction machinery will move about the site, changing the direction of the noise source to individual receivers. During any given period, the machinery will operate at maximum sound power levels for only brief stages. At other times, the machinery may produce lower sound levels while carrying out activities not requiring full power. For the proposed project, operation of all construction equipment at maximum sound power levels occurring at the same time is highly unlikely. Some types of construction machinery will be present only in a given area for brief periods during construction.

North of US 50 Water Improvements

As previously discussed, once water demand within the FPASP exceeds two MGD, a new booster pump station, with 6.8 gpm firm capacity, will need to be installed at the WTP, as well as approximately 18,000 lineal feet of a 30-inch water supply pipeline from the WTP to Iron Point Road/East Bidwell Street. The WTP, located south of Natoma Street, near Folsom Prison, is bordered on the east and west by residential neighborhoods. South of the WTP is an open space/utility power line easement, and then a residential neighborhood. The location of the 6.8 gpm booster pump station within the WTP boundaries is unknown at this time. It is anticipated that construction of the booster pump station would temporarily increase noise above ambient noise levels, which would be perceptible by nearby residential occupants.

With respect to the proposed water transmission line from the WTP to Iron Point Road/East Bidwell Street, the preliminary pipeline alignment is anticipated to extend northwest along East Bidwell Street, then north along Oak Avenue Parkway, and eventually west to the WTP (see Figure 8). More specifically, the portion of the alignment from Iron Point Road northwest to Oak Avenue Parkway would be located within the existing disturbed road rights-of-way, which are primarily bordered by retail and office uses. The portion of the alignment from Oak Avenue Parkway north to Willow Creek Drive would be located within the existing disturbed road right-of-way, which is bordered by commercial and office uses, a church, and residences. From Willow Creek Drive to the WTP, the pipeline would tentatively be located within an existing powerline utility easement. The powerline easement runs through an existing residential community, and includes a paved bike trail with scattered oak trees and other vegetation. It is anticipated that construction of the water transmission line, particularly along the segments from Oak Avenue Parkway/East Bidwell Street, north to Willow Creek Drive, and through the powerline easement to the WTP, would temporarily increase noise above ambient noise levels, which would be perceptible by nearby residential occupants.

US 50 Crossings

The project includes extension of water pipelines from the intersection of East Bidwell Street and Iron Point Road in one of two alignments, or a combination of both. One alignment would extend southeasterly along Placerville Road, under the existing US 50 bridge structure. The second prospective alignment would extend southerly along East Bidwell Street, over US 50 using the existing overpass structure. The crossing of US 50 may be achieved by jack-and-bore. In addition, a water booster station, serving water Zones 4 and 5 of the FPASP, would be located south of US 50, west of Placerville Road. Sensitive receptors are not located within this area.

The proposed sewer transmission pipeline would extend north from the Easton Valley Parkway Lift Station under US 50 via jack-and-bore, then north to Iron Point Road. Sensitive receptors are typically considered locations such as day care centers, schools, retirement homes, hospitals, or residences. The nearest receptors to the proposed sewer transmission pipeline include businesses that are not considered sensitive noise receptors,

such as a real estate office and a law office. It should be noted that construction of the proposed backbone improvements crossing US 50 are anticipated to be completed prior to occupancy of the future residences south of US 50. Furthermore, according to Section 8.42.060, Noise Source Exemptions, of the City of Folsom's Municipal Code, noise sources associated with construction are exempt, provided such activities do not take place before 7:00 AM or after 6:00 PM on any day except Saturday or Sunday, or before 8:00 AM or after 5:00 PM on Saturday or Sunday. Therefore, the construction noise would be exempt from the City's noise standards, per Section 8.42.060 of the City's Noise Ordinance.

South of US 50 Backbone

The backbone system south of US 50 includes four water booster pump stations and water delivery pipelines located throughout the FPASP. Sensitive receptors are not located within this portion of the backbone improvement area. Construction of the proposed backbone improvements crossing US 50 are anticipated to be completed prior to occupancy of the future residences south of US 50. Future development of residential land uses south of US 50 that would result from buildout of the FPASP would be required to undergo project-level environmental review. Therefore, any resulting noise from the backbone infrastructure would be considered existing conditions for future environmental review. Furthermore, as noted above, construction noise would be exempt from the City's noise standards, per Section 8.42.060 of the City's Noise Ordinance. It should be noted that the City may authorize work to occur at night after 6:00 PM for short periods of time (approximately one week or less). However, because the nearest receptors are located approximately 330 feet or further from any areas of the site that might require grading or paving, any construction after 6:00 PM would not result in substantial construction noise.

For wastewater delivery, wastewater collection pipes and three lift stations are proposed within the FPASP area: the Easton Valley Parkway Lift Station, the Russell Ranch Lift Station, and the Mangini Temporary Lift Station. The Easton Valley Lift Station would be located in the northwest corner of the FPASP area, and would require installation of an 8-inch sewer line under US 50 via jack-and-bore for purposes of connecting to the existing SRCSD lift station, south of Iron Point Road. The Mangini Temporary Lift Station alternative allows for the development of the upper reaches of the Street A/Oak Avenue sewer shed, independent of the development west of the Alder Creek crossing on Street A. The Mangini Temporary Lift Station would be located in the western portion of the FPASP area, and would require the construction of a temporary lift station at the eastern side of the Alder Creek crossing on Street A in the vicinity of the future high school site. The Mangini alternative would also include multiple forcemains generally aligned north along the eastern edge of the Alder Creek open space to Easton Valley Parkway and then west along Easton Valley Parkway to the Easton Valley Lift Station (or directly to the SRCSD lift station). Sensitive receptors are not located near the Easton Valley Lift Station, the Russell Ranch Lift Station, or the Mangini Temporary Lift Station sites. Therefore, any noise generated by lift station pumps would not affect any existing sensitive receptors.

City of Folsom Construction Noise Exemption

As noted above, according to Section 8.42.060, Noise Source Exemptions, of the City of Folsom's Municipal Code, noise sources associated with construction are exempt, provided such activities do not take place before 7:00 AM or after 6:00 PM on any day except Saturday or Sunday, or before 8:00 AM or after 5:00 PM on Saturday or Sunday. Therefore, while a potential exists for backbone construction activities to result in elevated noise levels in close proximity to residential areas along Oak Avenue Parkway, from East Bidwell Street north to Willow Creek Drive, and adjacent to the powerline easement from Willow Creek Drive to the WTP, this construction noise would be exempt from the City's noise standards, per Section 8.42.060 of the City's Noise Ordinance. In addition, these elevated noise levels would be temporary in nature. Therefore, impacts would be considered ***less than significant*** with respect to a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project

e,f. The project site is not located within an airport land use plan, two miles of a public airport, or the vicinity of a private airstrip. The nearest airport to the project site is the Cameron Airpark, located approximately six miles northeast of the site. The nearest 2005 60 dB CNEL noise contour attributable to Mather Airport would be approximately 5,000 feet to the west of the nearest project site boundary line. In addition, impacts related to exposure to aircraft noise were determined to be negligible by the FPASP Final EIR/EIS. The proposed changes to backbone infrastructure improvements would not alter the conclusion of the Final EIR/EIS. Therefore, the project would not expose people residing or working in the project area to excessive noise levels associated with air traffic, and ***no impact*** would occur.

XIII. POPULATION AND HOUSING. *Would the project:*	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (e.g., through projects in an undeveloped area or extension of major infrastructure)?	☐	☐	☐	✖
b. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	✖
c. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	✖

Discussion

a-c. Construction of the proposed backbone infrastructure would not result in any direct effect on population and would not involve the creation of any new housing or employment opportunities within the City. The area proposed for development of the water line crossing near East Bidwell Street and US 50 contains industrial and commercial development north of US 50. The area proposed for development of the sewer line crossing US 50 approximately 0.5 miles east of Prairie City Road contains commercial development north of US 50 and open space south of US 50. The project site south of US 50 consists of grazing land, and only one existing single-family residence and associated agricultural outbuildings located on the western side of the FPASP area. The existing house would not be demolished as part of the proposed project.

Although the backbone infrastructure supports potential population growth in the vicinity, the FPASP Final EIR/EIS previously analyzed the indirect population growth associated with the proposed project (i.e., the future population the backbone infrastructure intends to support). The analysis included in this document relates solely to the construction of the backbone infrastructure. The project would not induce population in the area nor displace housing or people, and therefore ***no impact*** would occur related to population and housing.

XIV. PUBLIC SERVICES. *Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:*	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Fire protection?	☐	☐	☐	✖
b. Police protection?	☐	☐	☐	✖
c. Schools?	☐	☐	☐	✖
d. Parks?	☐	☐	☐	✖
e. Other Public Facilities?	☐	☐	☐	✖

Discussion

a-e. Fire protection and emergency medical services are provided to the City of Folsom by the Folsom Fire Department (FFD). The FFD currently has four fire stations and responds to over 6,000 requests for service annually (an average of 16.4 per day).[6] Emergency Operations are managed by Division Chiefs who are responsible for an entire shift, including staff at all four fire stations. Captains are in charge of each individual station and the personnel working at each. Engineers drive and operate various types of equipment at the fire or medical scene. The largest concentration of personnel is the Firefighters. The FFD also has Paramedics who work on both ambulances and fire apparatus to provide care to the sick and injured. The FFD also has a special operations medic team that is highly visible at special events. The team uses a Yamaha Rhino that provides rapid access to ill or injured persons prior to the arrival of responding personnel, especially in areas that are congested and/or difficult to access. In addition, the Department is a member of a joint, county-wide communications center, and responds to emergencies in other jurisdictions when needed. It should be noted that any potential impacts related to construction activities that may affect roadway rights-of-way are discussed in the Transportation and Circulation section.

Police protection services in the area are provided by the Folsom Police Department (FPD). The Folsom City Police Department is located at 46 Natoma Street in the City of Folsom. The FPD is staffed with 110 people, including officers and support staff.[7] In January of 2008, the Folsom City Council approved Resolution No. 8215 adopting the Law Enforcement Service Delivery Plan (SDP) 2008-2011. The SDP noted that the officer to population ratio in the City was 1.33 officers per 1,000 residents. However, the SDP recommends against using ratio methods for defining staffing and response decisions and suggests using Patrol Allocation Modeling (PAM) for accurately assessing personnel

[6] City of Folsom. *Department Staffing*. Available at: http://www.folsom.ca.us/depts/fire/about_folsom_fire/staff.asp. Accessed October 2014.
[7] City of Folsom. *Inside the Folsom Police Department*. Available at: http://www.folsom.ca.us/depts/police/inside_folsom_pd/default.asp. Accessed October 2014.

needs.[8] The FPD is comprised of two divisions: Support Services and Field Operations. The Field Operations (Patrol) Division is staffed with 68 personnel and includes a Patrol Bureau, a Traffic Bureau, Mounted Unit, K-9 Unit, CSI, and Special Weapons and Tactics (SWAT) Team. The Support Services Division consists of Citizens Assisting Public Safety (CAPS) Volunteers, the Communication Center (911), Criminal Investigation Bureau, Live Scan and Fingerprint Unit, Records Division, and Technical Services Bureau.

The project site is located within the Folsom Cordova Unified School District (FCUSD). FCUSD serves kindergarten through grade 12 students in the City of Folsom, the City of Rancho Cordova and a portion of the unincorporated area of Sacramento County. Overall the District's enrollment can be characterized as having continuous growth over the past 30 years with only a minor decline during the closure of Mather Air Force Base in 1993 and the most recent economic downturn. On average, the District's enrollment has grown at the rate of over 300 students per year over the last 30 years to 19,117 students in October 2012. The District currently operates nineteen elementary schools, one charter school, four middle schools, three comprehensive high schools, two continuation high schools and four alternative and adult education centers.[9]

The City of Folsom has over 40 public parks and recreational facilities, most of which include benches, picnic tables, play structures, walking trails, and grass. Located throughout the City's neighborhoods, the parks are a mixture of mini-parks, neighborhood and community parks.[10]

Solid waste would be disposed at the Sacramento County Kiefer Landfill. The Kiefer Landfill is expected to have adequate capacity to serve the regional waste disposal needs until the anticipated closure date of approximately 2064.[11] Other public facilities, such as public libraries or health care facilities, would not be impacted by the proposed project as the project would not induce population growth. It should be noted that impacts to public services related to buildout of the FPASP were previously analyzed in the FPASP Final EIR/EIS. The proposed project would not alter the conclusions of the FPASP Final EIR/EIS.

North of US 50 Water Improvements

Folsom Fire Station #38 (1300 Blue Ravine Road) is located approximately 0.85-miles southeast of the project site north of US 50. The area proposed for development is currently served by the local police and fire departments.

The proposed backbone infrastructure north of US 50 would not create demand for public services or increase population in the area which would require public services. As such,

[8] City of Folsom. *Folsom Plan Area Specific Plan [pg. 11-8]*. June 28, 2011.
[9] Folsom Cordova Unified School District. *2013 Facilities Master Plan.* November 21, 2013.
[10] City of Folsom. *City of Folsom Parks and Public Schools.* Available at: http://www.folsom.ca.us/civicax/filebank/blobdload.aspx?blobid=2622. Accessed on: October 2014.
[11] CalRecycle. *Facility/Site Summary Details: Sacramento County Landfill (Kiefer) (34-AA-0001).* Available at: http://www.calrecycle.ca.gov/SWFacilities/Directory/34-AA-0001/Detail/. Accessed October 2014.

the proposed improvements north of US 50 would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives.

US 50 Crossings

Folsom Fire Station #37 (70 Clarksville Road) is located approximately 0.92-miles northwest of the proposed water line crossing. Folsom Fire Station #37 is located approximately 1.28-miles northeast of the proposed sewer line crossing. The area proposed for development is currently served by the local police and fire departments.

The proposed backbone infrastructure crossing US 50 would not create demand for public services or increase population in the area which would require public services. As such, the proposed improvements crossing US 50 would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives.

South of US 50 Backbone

Folsom Fire Station #37 (70 Clarksville Road) is located approximately 0.9-miles north of the project site and is the closest existing fire station to the site.

The proposed backbone infrastructure south of US 50 would not create demand for public services or increase population in the area which would require public services. As such, the proposed improvements south of US 50 would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives.

Conclusion

The proposed project would not directly result in adverse physical impacts to fire services, police protection services, schools, parks, or other public facilities. Therefore, ***no impact*** to public services would occur.

XV. RECREATION. *Would the project:*	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	✖
b. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	✖

Discussion

a,b. The project proposes construction of backbone infrastructure only and does not include recreational facilities. The proposed project site south of US 50 is a large open space area within the City limits. The proposed project site north of and crossing US 50 contains existing roadways and commercial development.

The proposed project would not introduce new residents to the area; thus, the project would not be expected to result in a direct increase in the use of the existing park facilities such that physical deterioration of the facility would occur or be accelerated. Population growth and an increase in demand for recreational facilities resulting from buildout of the FPASP Final EIR/EIS were previously evaluated in the FPASP Final EIR/EIS and determined to be less than significant. The proposed project includes the backbone infrastructure only. As such, the proposed project would result in ***no impact*** related to recreation.

XVI. TRANSPORTATION AND CIRCULATION. *Would the project:*	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?	☐	✖	☐	☐
b. Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	☐	✖	☐	☐
c. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	✖
d. Substantially increase hazards due to a design features (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	✖	☐	☐
e. Result in inadequate emergency access?	☐	✖	☐	☐
f. Conflicts with adopted policies supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	☐	☐	✖	☐

Discussion

a,b. Operation of the proposed project would generate few vehicle trips for periodic maintenance of the facilities, such as the sewer lift stations and water booster pumps. Because the project would not induce population growth, parking spaces would not need to be provided, nor would additional permanent traffic be generated in the project site vicinity.

North of US 50 Water Improvements

The proposed project includes two program-level improvements north of US 50. A new booster pump station would eventually be installed at the existing WTP for the ultimate project demand (8.8 MGD). In addition, a water transmission pipeline will eventually be installed from East Bidwell Street to the WTP. The transmission pipeline would extend north along East Bidwell Street, north along Oak Avenue Parkway, and eventually west to the WTP.

Construction of the water transmission pipeline to the WTP would take place in existing roadway rights-of-way. Temporary lane shifts may occur. Construction-generated traffic would be temporary, and therefore would not result in any long-term degradation in operating conditions or LOS on any roadways within the area. The primary impacts from construction vehicle traffic would include temporary, short-term, and intermittent

reductions of roadway capacities associated with the movement of construction equipment. Lane blockage caused by construction traffic would be temporary and limited to within the immediate vicinity of pipeline construction. The proposed project does not involve permanently altering existing road conditions that could affect intersections.

US 50 Crossings

The project includes extension of water pipelines from the intersection of East Bidwell Street and Iron Point Road in one of two alignments, or a combination of both. One alignment would extend southeasterly along Placerville Road, under the existing US 50 bridge structure. The second prospective alignment would extend southerly along East Bidwell Street, over US 50 using the existing overpass structure. The crossing of US 50 may be achieved by jack-and-bore. In addition, a water booster station, serving water Zones 4 and 5 of the FPASP area, would be located south of US 50, west of Placerville Road. The proposed sewer transmission pipeline would extend north from the Easton Valley Parkway Lift Station under US 50, then north to Iron Point Road.

As noted above, construction-generated traffic would be temporary, and therefore would not result in any long-term degradation in operating conditions or LOS on any roadways within the area. Lane blockage caused by construction traffic would be temporary and limited to within the immediate vicinity of pipeline construction. The proposed crossing improvement areas are located close to major arterials (Prairie City Road, White Rock Road, and Scott Road) and US 50. Use of these routes would minimize project effects on traffic flow along local, well-travelled routes.

The proposed project does not involve permanently altering existing road conditions that could affect intersections. Mitigation Measures 3A.14-1 and 3B.15-1a of the FPASP Final EIR/EIS would reduce potential impacts related to emergency response services during construction as well as roadway capacity during construction to a less-than-significant level. The proposed changes would not alter the conclusion of the Final EIR/EIS.

South of US 50 Backbone

The primary impacts from construction vehicle traffic would include temporary, short-term, and intermittent reductions of roadway capacities associated with the movement of construction equipment. The initial construction of roadways south of US 50 would require construction workers to access the area using Prairie City Road, White Rock Road, and Scott Road. Once some of the internal roads are built, construction workers could shift more of the construction trips to the internal backbone street network. Construction workers are expected to typically arrive at the construction site before 7:00 AM and most are expected to depart prior to the afternoon commute period, which for the Sacramento area, is typically from 4:00 PM to 6:00 PM. Thus, construction work trips generally would occur outside of the peak hour of traffic on the local street system.

Construction of the proposed utility improvements and backbone roadways would be completed in multiple phases over an anticipated 15-year period. The long-term build

scenario would spread construction traffic over multiple phases. As such, the increase in construction-related traffic in any given year would be minimal, especially once the backbone roadways are complete.

Major arterials and collectors in the area are designed to accommodate a mix of vehicle types, including heavy trucks. The potential impacts are expected to be negligible on the major arterials and collectors. However, lower capacity roadways could be significantly impacted by construction equipment within the roadway. As noted above, Mitigation Measures 3A.14-1 and 3B.15-1a of the FPASP Final EIR/EIS would reduce potential impacts related to emergency response services during construction as well as roadway capacity during construction to a less-than-significant level. The proposed changes would not alter the conclusion of the Final EIR/EIS.

Conclusion

Operational vehicle trips resulting from buildout of the proposed project would result in a minimal amount of trips for routine maintenance. Construction vehicle trips would utilize the proposed backbone roadways in order to access the US 50 crossings and the improvements south of US 50. However, without a traffic control plan, impacts would be ***potentially significant.***

Mitigation Measure(s)
Implementation of the following mitigation measure would reduce the potential impacts to a *less-than-significant* level.

South of US 50 Backbone, US 50 Crossings, and North of US 50 Water Improvements

XVI-1. The project applicant(s) shall prepare and implement traffic control plans for construction activities that may affect road rights-of-way. The traffic control plans must follow any applicable standards of the agency responsible for the affected roadway and must be approved and signed by a professional engineer. Measures typically used in traffic control plans include advertising of planned lane closures, warning signage, a flag person to direct traffic flows when needed, and methods to ensure continued access by emergency vehicles. During project construction, access to existing land uses shall be maintained at all times, with detours used as necessary during road closures. Traffic control plans shall be submitted to the City of Folsom Public Works Department or Caltrans for review and approval prior to the approval of all project plans or permits, for all improvements where implementation may cause impacts on traffic along roadways within their respective areas of jurisdiction. The traffic control plan shall, at minimum, include the following measures:

- *Maintaining the maximum amount of travel lane capacity during non-construction periods, possible, and advanced notice to drivers through the provision of construction signage.*

- *Maintaining alternate one-way traffic flow past the lay down area and site access when feasible.*
- *Heavy trucks and other construction transport vehicles shall avoid the busiest commute hours (7:00 AM to 8:00 AM and 5:00 PM to 6:00 PM on weekdays).*
- *The City shall provide a minimum 72-hour advance notice of access restrictions for residents, businesses, and local emergency response agencies. The notice shall include the identification of alternative routes and detours to enable for the avoidance of the immediate construction zone.*
- *The City, in cooperation with the contractor(s), shall provide a phone number and community contact for inquiries about the schedule of the construction of the south of US 50 backbone infrastructure throughout the construction period. The information will be posted in a local newspaper, on the City's web site, or at City Hall and will be updated on a monthly basis.*
- *To the extent practical, the City shall maximize opportunities for coordinated construction and installation of the conveyance pipeline with other planned roadway improvement projects.*

c. The nearest airport to the project site is the Cameron Airpark, located approximately six miles northeast of the site. As such, the project site is not located within two miles of any public airports or private airstrips, and does not fall within an airport land use plan area. In addition, the project would not increase the population in the area. Therefore, the project would not result in a change in air traffic patterns, including an increase in traffic levels or change in location, and ***no impact*** would occur.

d,e. Permanent modifications to the existing roadway network or access points would not occur with implementation of the proposed project. The proposed backbone roadways would be adequately designed to ensure that hazards due to design features or incompatible uses would not occur. The proposed backbone roadways would not contain sharp curves or result in dangerous intersections that would substantially increase hazards on the site or immediate vicinity. However, emergency vehicles may be temporarily obstructed by construction operations along roadway rights-of-way. Therefore, without a traffic control plan to ensure adequate emergency access during construction, impacts would be ***potentially significant***.

Mitigation Measure(s)
Implementation of the following mitigation measure would reduce the potential impacts to a *less-than-significant* level.

XVI-2. Implement Mitigation Measure XVI-1.

f. Due to the nature of the proposed project, population in the area would not increase with implementation of the project. Population increase due to future development of the FPASP was analyzed in the FPASP Final EIR/EIS. The project does not involve the placement of

housing or any other land use that would require alternative transportation options. However, as discussed above, implementation of the proposed project would create four additional at-grade crossings on Placerville Road at the following four locations: Easton Valley Parkway (see Figure 16), Street "A" (see Figure 17), Street "C" (see Figure 18), and New Placerville Road (see Figure 19). The SPTC has not been in commercial service since the late 1980's, and the line is currently used for weekend excursion trains and other special events, with train operations ranging from five to 13 excursions per day on Saturdays and Sundays. Therefore, the construction of the four at-grade crossings in conjunction with the intermittent use of the SPTC would not greatly impact the existing transit uses in the area. A License Agreement for Excursion Rail Operations, by and between the SPTC JPA, and the Placerville and Sacramento Valley Railroad, Inc. (P&SVRR) was made effective on February 1, 2013. Per the license agreement, the four at-grade crossings would be allowed. The License Agreement states the P&SVRR would, at no cost or expense to itself, cooperate with the efforts, of any applicable local governments to secure Public Utilities Commission (PUC) approval of such crossings; provided, however, that P&SVRR shall be entitled to raise any reasonable safety concern related to such crossings. The P&SVRR would also cooperate with the construction of crossing improvements, as necessary.[12] Therefore, implementation of the proposed project would not conflict with any adopted policies supporting alternative transportation, and a ***less-than-significant*** impact would occur.

[12] *License Agreement for Excursion Rail Operations, by and between the Sacramento-Placerville Transportation Corridor Joint Powers Authority, and the Placerville and Sacramento Valley Railroad, Inc*. February 1, 2013.

Figure 16
Easton Valley Parkway At-grade Crossing

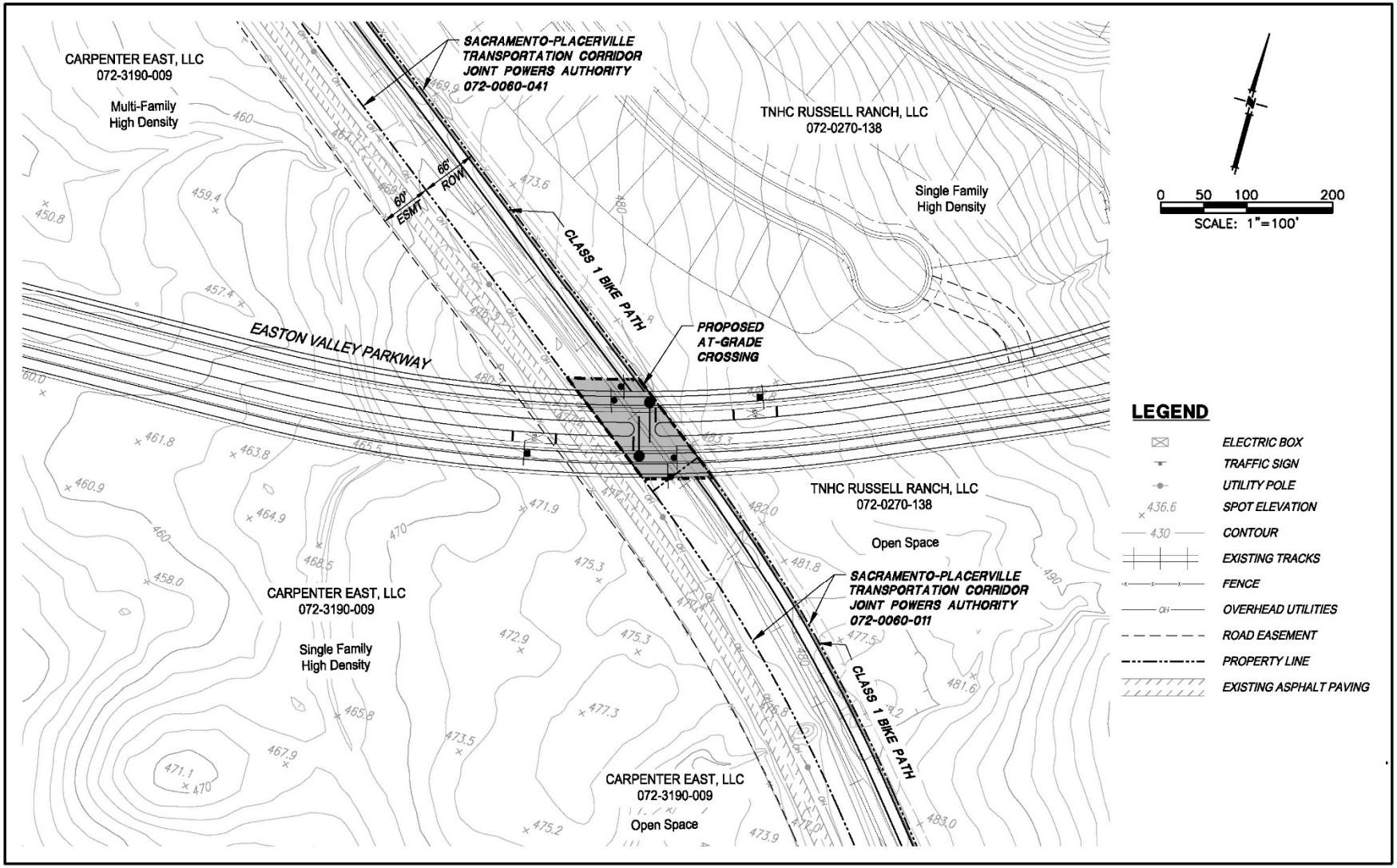


Figure 17
Street "A" At-grade Crossing

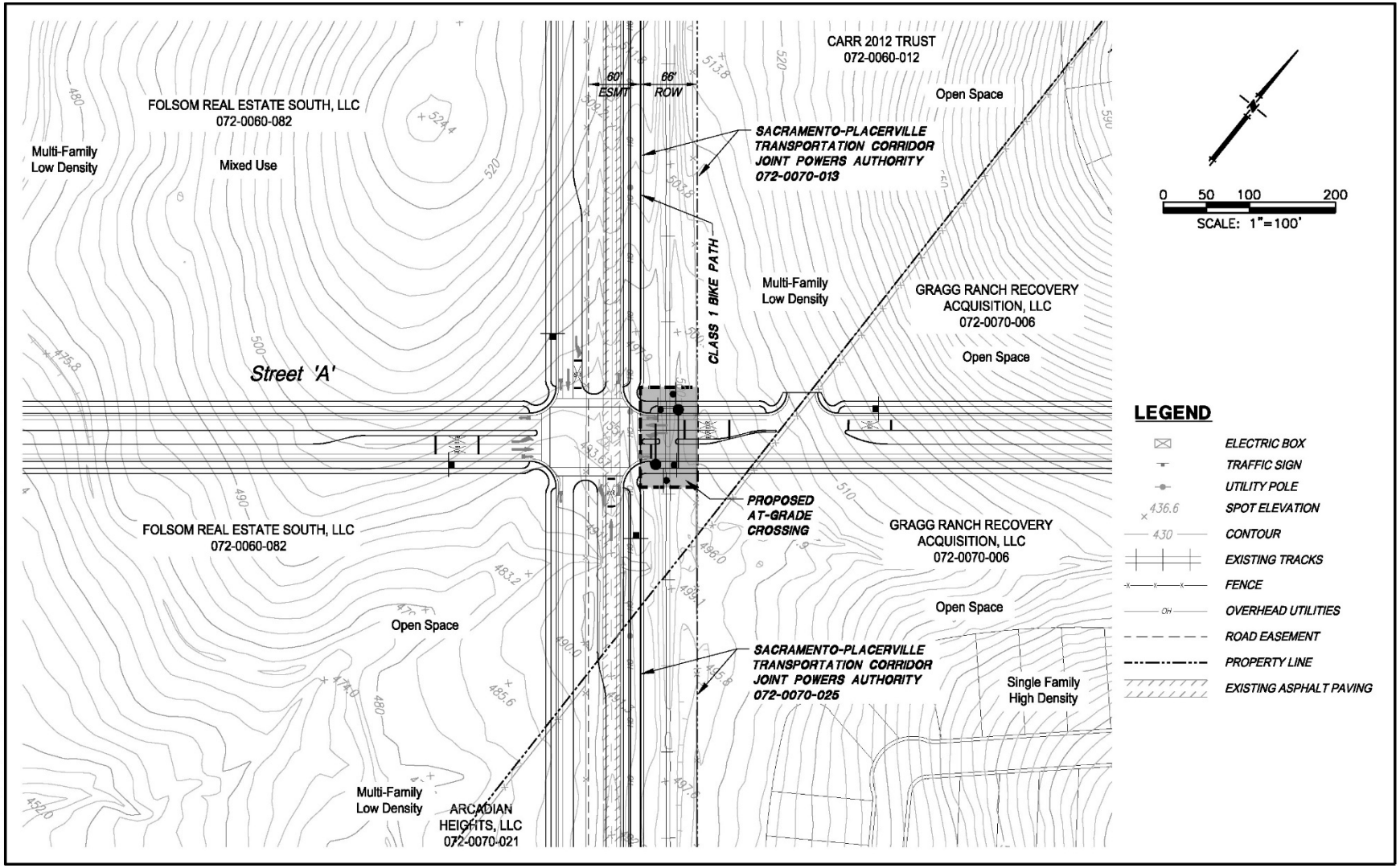


Figure 18
Street "C" At-grade Crossing

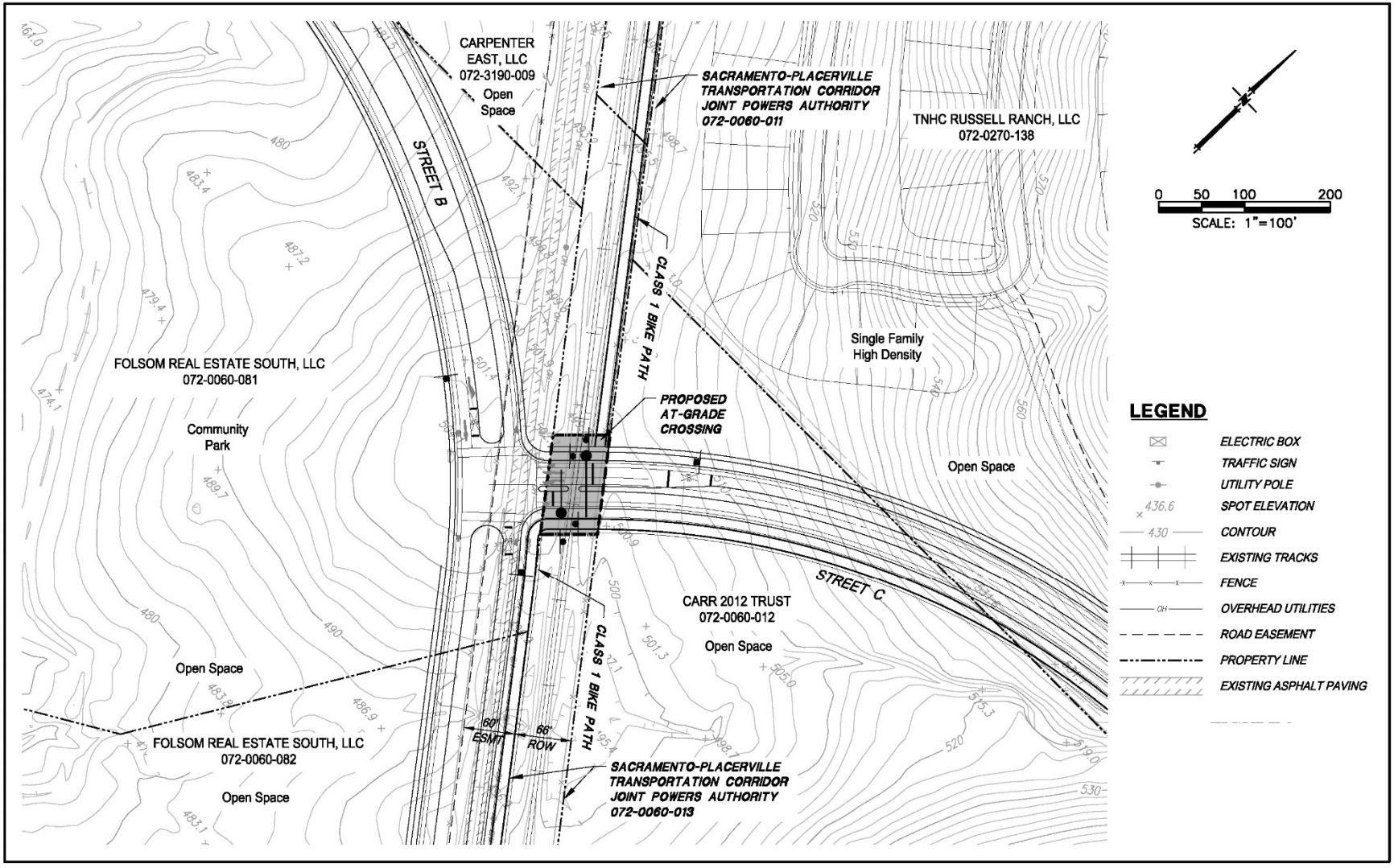
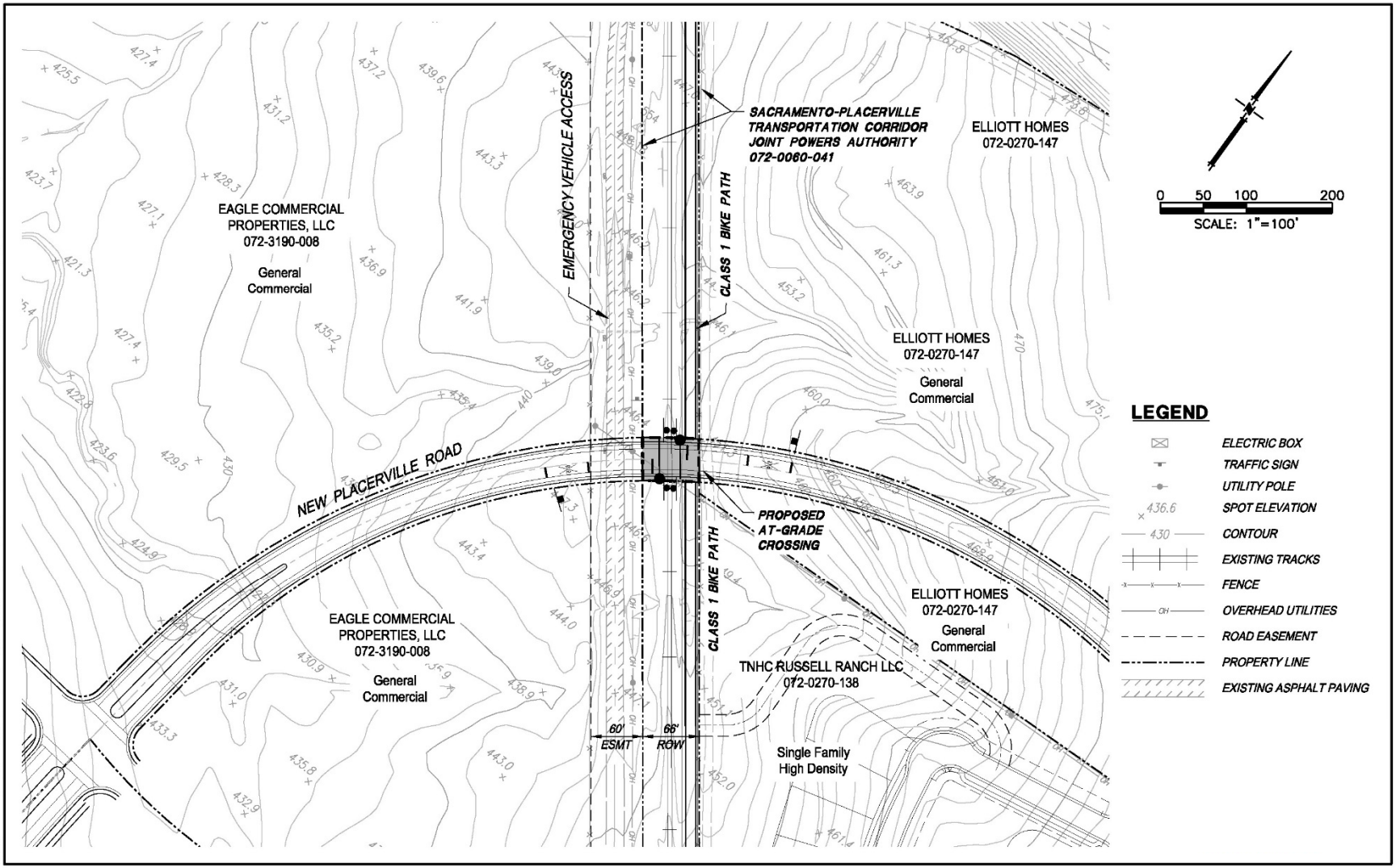


Figure 19
New Placerville Road At-grade Crossing



XVII. UTILITIES AND SERVICE SYSTEMS. *Would the project:*	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	✖	☐
b. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	✖	☐
c. Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	✖	☐
d. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	✖	☐
e. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	✖	☐
f. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	✖	☐
g. Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	✖	☐

Discussion

a,b, d,e. The proposed project consists of construction of new drainage, water, and wastewater infrastructure in three broadly-defined areas of the City of Folsom: north of US 50, US 50 crossings, and south of US 50. As such, the project does not involve any demand for water supply and would not generate any wastewater. It should be noted that the FPASP Final EIR/EIS addressed needs associated with future buildout of the FPASP. The proposed project would not alter the conclusions of the FPASP Final EIR/EIS. Therefore, the project would not exceed any wastewater treatment requirements, require or result in the construction of new water or wastewater treatment facilities or expansion of any existing facilities, affect water supplies, nor affect the capacity of wastewater treatment facilities. Consequently, impacts would be ***less than significant***.

c. North of US 50 Water Improvements

During construction of the improvements north of US 50, construction could temporarily disturb the drainage in the area. However, as in the Hydrology and Water Quality section, projects that disturb one or more acres (including phased construction of smaller areas which are part of a larger project) are required to obtain coverage under the SWRCB's NPDES stormwater permit for general construction activity. Permit applicants are required to prepare and retain a SWPPP that describes the site, erosion and sediment controls, means of waste disposal, implementation of approved local plans, control of post-construction sediment and erosion control measures and maintenance responsibilities, non-stormwater management controls, and BMPs. Coverage under the NPDES stormwater permit would ensure that any potential impacts related to drainage would be alleviated with implementation of the SWPPP and BMPs.

The booster pump station at the WTP would be located on previously disturbed land and would not require or result in the construction of new storm drainage facilities. The water transmission pipeline is anticipated to be buried beneath existing roadways rights-of-way in an area surrounded by existing development. Temporary construction activity would be required to implement the measures included in the SWPPP. Once burial of the pipeline is complete and the area is backfilled, the drainage pattern of the area would return to the pre-development conditions.

US 50 Crossings

The proposed project includes two improvements crossing the existing US 50 bridge structure. As part of the WMP update, new water transmission pipelines are proposed to extend from the intersection of East Bidwell Street and Iron Point Road in one of two alignments, or a combination of both. One alignment would extend southeasterly along Placerville Road, under the existing US 50 bridge structure. The second prospective alignment would extend southerly along East Bidwell Street, over US 50 using the existing overpass structure. In addition, the crossing of US 50 may be achieved by jack-and-bore.

As part of the SMP update, new sewer transmission pipelines are proposed to extend from Easton Valley Parkway, which would be located approximately 0.5 miles east of Prairie City Road, crossing US 50 under the Highway and north to Iron Point Road. The portion of the sewer pipeline just south of US 50 would be buried underground. Once buried, the drainage pattern of the area would be similar to pre-development conditions.

As the majority of the aforementioned improvements would occur in a previously-developed area, the improvements would only slightly alter the drainage pattern of the area, if at all. The US 50 crossings would not require or result in the construction or new storm water drainage facilities.

South of US 50 Backbone

A SDMP was completed for the project site south of US 50 in October 2007. The Master Plan addresses flood hazards, identified flood protection measures, and documents the downstream floodwater surface elevations for full buildout of the FPASP area (including backbone infrastructure). In general, the drainage flow paths delineated in the SDMP remained similar under the proposed project conditions with some changes based on grading and roadways. While individual drainage basin drainage patterns may change as a result of construction south of US 50, the overall flow path to the eight major outlets from the project boundaries would not change. The SDMP ensures that any potential impacts related to storm water facilities would be less than significant.

During construction of the improvements south of US 50, construction could temporarily disturb the drainage in the area. However, as noted above, the proposed project is required to obtain coverage under the SWRCB's NPDES stormwater permit for general construction activity. Permit applicants are required to prepare and retain a SWPPP that describes the site, erosion and sediment controls, means of waste disposal, implementation of approved local plans, control of post-construction sediment and erosion control measures and maintenance responsibilities, non-stormwater management controls, and BMPs. Coverage under the NPDES stormwater permit would ensure that any potential impacts related to drainage and surface runoff would be alleviated with implementation of the SWPP and BMPs.

Conclusion

The proposed project includes improvements to the storm drainage system as required for future buildout of the FPASP. Therefore, new stormwater drainage facilities or expansion of existing facilities would not be required as a result of the project, and a ***less-than-significant*** impact associated with stormwater drainage facilities would occur.

f,g. The proposed infrastructure project does not involve any operational uses that would generate solid waste. Project construction activities would occur at intervals over the 15-year buildout period, during which construction would generate waste. Any solid waste generated by construction activities in the FPASP area would be disposed of at the Kiefer Landfill located approximately seven miles south of the FPASP area in Sacramento County. According to the FPASP Final EIR/EIS, the landfill is permitted to accept 10,800 maximum tons per day (tpd) of solid waste with an average intake of 6,000 tpd. The landfill has a total capacity of 117 million cubic yards, and a remaining capacity of 113 million cubic yards. Currently, the landfill has a closure date of 2064.

Construction of the proposed infrastructure improvements would not generate a significant amount of waste. Impacts related to landfill capacities resulting from buildout of the FPASP area were previously analyzed in the FPASP Final EIR/EIS and were determined to be less than significant. The proposed project would not alter the conclusion of the Final EIR/EIS. As such, the project would not affect landfill capacities and would not conflict

with any federal, state, or local regulations related to solid waste, and a ***less-than-significant*** impact would occur.

XVIII. MANDATORY FINDINGS OF SIGNIFICANCE.	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☐	✖	☐
b. Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	✖	☐
c. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	✖	☐

Discussion

a,b. Biological Resources

The proposed project would contribute to the regional loss of aquatic habitats that support special-status species, which could contribute to the incremental decline of these species. The backbone infrastructure project also contributes to the regional loss of blue oak woodlands which supports plant and wildlife species and functions in carbon sequestration. In addition, the backbone infrastructure project would result in the regional loss of annual grassland, resulting in a loss of foraging habitat for raptors and wildlife species and nesting habitat for burrowing owl.

Full buildout of the FPASP area, including the backbone infrastructure, would result in impacts to biological resources; however, impacts would be reduced through designation of open space preserves within the FPASP area. The designation of open space areas to preserve aquatic and blue oak woodland habitats would support special-status species on-site and in the vicinity of the FPASP area. Preservation of aquatic and blue oak woodland habitats on-site would contribute to reducing the Specific Plan's contribution, including the proposed backbone infrastructure, to regional cumulative loss of biological resources.

The individual property owners (project applicants) within the FPASP area, including the proposed backbone infrastructure project, will also be responsible for implementing project-specific mitigation measures to reduce impacts to biological resources. As discussed above in the Biological Resources section, all potentially significant impacts to

biological resources for the proposed project can be mitigated to a less than significant level. In addition, this IS/MND includes Mitigation Measures IV-1 through IV-15 in order to alleviate the aforementioned potential impacts to a less-than-significant level.

Cultural Resources

The proposed project has the potential to eliminate important examples of the major periods of California history or prehistory. As noted in the Cultural Resources section, the USACE in consultation with the OHP and ACHP executed a Programmatic Agreement (PA) to comply with Section 106 NHPA. The City of Folsom, as CEQA lead agency, served as a concurring party to the PA and was consulted during its preparation. In October 2013, the PA was amended by the signatories and was thereafter referred to as the FAPA. Execution of the original PA and FAPA must occur prior to issuance of the Federal permit and prior to authorization for any aspect or component of the proposed project. Items required by the FAPA that have been completed include an inventory and evaluation for cultural resources, a Finding of Effect, a historic property treatment plan, and a historic property management plan. The FAPA provides the process by which all cultural resources assessments are carried out for the FPASP area, including the project site, and also addresses such for both Section 106 and CEQA compliance.

This IS/MND includes Mitigation Measures V-1 through V-4, consistent with the FAPA, in order to alleviate the potential impacts to cultural resources to a less-than-significant level.

Conclusion

Given the size and location of the proposed project site, the proposed project has the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory. However, where a potentially significant impact could occur (i.e., impacts related to cultural resources and biological resources), mitigation measures have been included in this IS/MND that would reduce such impacts to less-than-significant levels. Therefore, the proposed project would have a ***less-than-significant*** impact.

b,c. This IS/MND demonstrates that the proposed infrastructure project would not be expected to result in adverse impacts to human beings, either directly or indirectly. As noted in the Air Quality and Greenhouse Gas sections, the proposed project's construction-related emissions would occur over a 15-year period. The air effects from construction would not adversely affect humans in the area and would not result in substantial odors. All impacts identified in this IS/MND were determined to be less than significant or have no impact, or were reduced to less than significant with implementation of the required mitigation measures; and the project's incremental contribution to potential cumulative impacts would not be cumulatively considerable. Therefore, the project's impact would be considered ***less than significant***.

APPENDIX A

RoadMOD Outputs

Road Construction Emissions Model, Version 7.1.5.1

Emission Estimates for -> Backbone Y1 Project Phases (English Units)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	CO2 (lbs/day)
Grubbing/Land Clearing	9.8	47.1	70.9	153.6	3.6	150.0	34.4	3.2	31.2	8,729.7
Grading/Excavation	26.8	125.2	253.8	162.6	12.6	150.0	42.7	11.5	31.2	25,069.3
Drainage/Utilities/Sub-Grade	23.7	108.9	190.9	161.1	11.1	150.0	41.3	10.1	31.2	19,968.7
Paving	12.2	57.1	77.9	5.3	5.3	-	4.8	4.8	-	9,102.3
Maximum (pounds/day)	26.8	125.2	253.8	162.6	12.6	150.0	42.7	11.5	31.2	25,069.3
Total (tons/construction project)	1.9	8.9	16.5	12.1	0.9	11.2	3.1	0.8	2.3	1,694.4

Notes:

Project Start Year ->	2015
Project Length (months) ->	8
Total Project Area (acres) ->	144
Maximum Area Disturbed/Day (acres) ->	15
Total Soil Imported/Exported (yd^3/day)->	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns H and I. Total PM2.5 emissions shown in Column J are the sum of exhaust and fugitive dust emissions shown in columns K and L.

Emission Estimates for -> Backbone Y1 Project Phases (Metric Units)	ROG (kgs/day)	CO (kgs/day)	NOx (kgs/day)	Total PM10 (kgs/day)	Exhaust PM10 (kgs/day)	Fugitive Dust PM10 (kgs/day)	Total PM2.5 (kgs/day)	Exhaust PM2.5 (kgs/day)	Fugitive Dust PM2.5 (kgs/day)	CO2 (kgs/day)
Grubbing/Land Clearing	4.5	21.4	32.2	69.8	1.6	68.2	15.6	1.5	14.2	3,968.1
Grading/Excavation	12.2	56.9	115.4	73.9	5.7	68.2	19.4	5.2	14.2	11,395.1
Drainage/Utilities/Sub-Grade	10.8	49.5	86.8	73.2	5.0	68.2	18.8	4.6	14.2	9,076.7
Paving	5.5	26.0	35.4	2.4	2.4	-	2.2	2.2	-	4,137.4
Maximum (kilograms/day)	12.2	56.9	115.4	73.9	5.7	68.2	19.4	5.2	14.2	11,395.1
Total (megagrams/construction project)	1.7	8.1	14.9	11.0	0.8	10.2	2.8	0.7	2.1	1,536.9

Notes:

Project Start Year ->	2015
Project Length (months) ->	8
Total Project Area (hectares) ->	58
Maximum Area Disturbed/Day (hectares) ->	6
Total Soil Imported/Exported (meters^3/day)->	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns H and I. Total PM2.5 emissions shown in Column J are the sume of exhaust and fugitive dust emissions shown in columns K and L.

Road Construction Emissions Model

Version 7.1.5.1

Data Entry Worksheet

Note: Required data input sections have a yellow background.
Optional data input sections have a blue background. Only areas with a yellow or blue background can be modified. Program defaults have a white background.
The user is required to enter information in cells C10 through C25.

SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

Input Type

Project Name	Backbone Y1	
Construction Start Year	2015	Enter a Year between 2009 and 2025 (inclusive)
Project Type	1	1 New Road Construction 2 Road Widening 3 Bridge/Overpass Construction
Project Construction Time	8.00	months
Predominant Soil/Site Type: Enter 1, 2, or 3	1	1. Sand Gravel 2. Weathered Rock-Earth 3. Blasted Rock
Project Length	6.72	miles
Total Project Area	143.78	acres
Maximum Area Disturbed/Day	15.00	acres
Water Trucks Used?	1	1. Yes 2. No
Soil Imported	0.00	yd^3/day
Soil Exported	0.00	yd^3/day
Average Truck Capacity	20	yd^3 (assume 20 if unknown)

To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.

The remaining sections of this sheet contain areas that can be modified by the user, although those modifications are optional.

Note: The program's estimates of construction period phase length can be overridden in cells C34 through C37.

Construction Periods	User Override of Construction Months	Program Calculated Months	2005	%	2006	%	2007	%
Grubbing/Land Clearing		0.80	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation		3.20	0.00	0.00	0.00	0.00	0.00	0.00
Drainage/Utilities/Sub-Grade		2.80	0.00	0.00	0.00	0.00	0.00	0.00
Paving		1.20	0.00	0.00	0.00	0.00	0.00	0.00
Totals	0.00	8.00						

NOTE: soil hauling emissions are included in the Grading/Excavation Construction Period Phase, therefore the Construction Period for Grading/Excavation cannot be zero if hauling is part of the project.

Hauling emission default values can be overridden in cells C45 through C46.

Soil Hauling Emissions

User Input	User Override of Soil Hauling Defaults	Default Values
Miles/round trip		30
Round trips/day		0
Vehicle miles traveled/day (calculated)		0

Hauling Emissions	ROG	NOx	CO	PM10	PM2.5	CO2
Emission rate (grams/mile)	0.25	9.41	1.09	0.22	0.15	1694.67
Emission rate (grams/trip)	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day	0.00	0.00	0.00	0.00	0.00	0.00
Tons per contruction period	0.00	0.00	0.00	0.00	0.00	0.00

Worker commute default values can be overridden in cells C60 through C65.

Worker Commute Emissions

	User Override of Worker Commute Default Values	Default Values
Miles/ one-way trip		20
One-way trips/day		2
No. of employees: Grubbing/Land Clearing		25
No. of employees: Grading/Excavation		53
No. of employees: Drainage/Utilities/Sub-Grade		50
No. of employees: Paving		36

	ROG	NOx	CO	PM10	PM2.5	CO2
Emission rate - Grubbing/Land Clearing (grams/mile)	0.164	0.219	1.956	0.047	0.020	443.518
Emission rate - Grading/Excavation (grams/mile)	0.164	0.219	1.956	0.047	0.020	443.518
Emission rate - Draining/Utilities/Sub-Grade (gr/mile)	0.164	0.219	1.956	0.047	0.020	443.518
Emission rate - Paving (grams/mile)	0.164	0.219	1.956	0.047	0.020	443.518
Emission rate - Grubbing/Land Clearing (grams/trip)	0.558	0.363	4.666	0.004	0.003	95.528
Emission rate - Grading/Excavation (grams/trip)	0.558	0.363	4.666	0.004	0.003	95.528
Emission rate - Draining/Utilities/Sub-Grade (gr/trip)	0.558	0.363	4.666	0.004	0.003	95.528
Emission rate - Paving (grams/trip)	0.558	0.363	4.666	0.004	0.003	95.528
Pounds per day - Grubbing/Land Clearing	0.422	0.523	4.823	0.104	0.044	987.432
Tons per const. Period - Grub/Land Clear	0.004	0.005	0.042	0.001	0.000	8.689
Pounds per day - Grading/Excavation	0.886	1.098	10.127	0.219	0.093	2073.608
Tons per const. Period - Grading/Excavation	0.031	0.039	0.356	0.008	0.003	72.991
Pounds per day - Drainage/Utilities/Sub-Grade	0.843	1.046	9.645	0.208	0.088	1974.865
Tons per const. Period - Drain/Util/Sub-Grade	0.026	0.032	0.297	0.006	0.003	60.826
Pounds per day - Paving	0.611	0.758	6.993	0.151	0.064	1431.777
Tons per const. Period - Paving	0.008	0.010	0.092	0.002	0.001	18.899
tons per construction period	0.069	0.085	0.788	0.017	0.007	161.406

Water truck default values can be overriden in cells C91 through C93 and E91 through E93.

Water Truck Emissions	User Override of Default # Water Trucks	Program Estimate of Number of Water Trucks	User Override of Truck Miles Traveled/Day	Default Values Miles Traveled/Day
Grubbing/Land Clearing - Exhaust		3		120
Grading/Excavation - Exhaust		3		120
Drainage/Utilities/Subgrade		2		80

	ROG	NOx	CO	PM10	PM2.5	CO2
Emission rate - Grubbing/Land Clearing (grams/mile)	0.25	9.41	1.09	0.22	0.15	1694.67
Emission rate - Grading/Excavation (grams/mile)	0.25	9.41	1.09	0.22	0.15	1694.67
Emission rate - Draining/Utilities/Sub-Grade (gr/mile)	0.25	9.41	1.09	0.22	0.15	1694.67
Pounds per day - Grubbing/Land Clearing	0.19	7.46	0.86	0.18	0.12	1343.79
Tons per const. Period - Grub/Land Clear	0.00	0.07	0.01	0.00	0.00	11.83
Pound per day - Grading/Excavation	0.19	7.46	0.86	0.18	0.12	1343.79
Tons per const. Period - Grading/Excavation	0.01	0.26	0.03	0.01	0.00	47.30
Pound per day - Drainage/Utilities/Subgrade	0.09	3.31	0.38	0.08	0.05	597.24
Tons per const. Period - Drainage/Utilities/Subgrade	0.00	0.10	0.01	0.00	0.00	18.40

Fugitive dust default values can be overridden in cells C110 through C112.

Fugitive Dust	User Override of Max Acreage Disturbed/Day	Default Maximum Acreage/Day	PM10 pounds/day	PM10 tons/per period	PM2.5 pounds/day	PM2.5 tons/per period
Fugitive Dust - Grubbing/Land Clearing		15	150.0	1.3	31.2	0.3
Fugitive Dust - Grading/Excavation		15	150.0	5.3	31.2	1.1
Fugitive Dust - Drainage/Utilities/Subgrade		15	150.0	4.6	31.2	1.0

Off-Road Equipment Emissions

Grubbing/Land Clearing Override of Default Number of Vehicles	Default Number of Vehicles *Program-estimate*	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	CO2 pounds/day
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
		Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
		Cranes	0.00	0.00	0.00	0.00	0.00	0.00
	3	Crawler Tractors	2.23	13.42	29.00	1.12	1.03	2476.05
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	3	Excavators	1.32	8.37	14.71	0.73	0.67	1718.40
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
		Graders	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Pavers	0.00	0.00	0.00	0.00	0.00	0.00
		Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
		Pumps	0.00	0.00	0.00	0.00	0.00	0.00
		Rollers	0.00	0.00	0.00	0.00	0.00	0.00
		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Scrapers	0.00	0.00	0.00	0.00	0.00	0.00
	14	Signal Boards	5.68	19.67	19.18	1.49	1.37	2204.07
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
		Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Grubbing/Land Clearing	pounds per day	9.2	41.5	62.9	3.3	3.1	6398.5
	Grubbing/Land Clearing	tons per phase	0.1	0.4	0.6	0.0	0.0	56.3

Grading/Excavation	Default Number of Vehicles		ROG	CO	NOx	PM10	PM2.5	CO2
Override of Default Number of Vehicles	*Program-estimate*	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
		Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
	2	Cranes	1.54	6.01	17.50	0.80	0.74	1203.57
	3	Crawler Tractors	2.23	13.42	29.00	1.12	1.03	2476.05
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	5	Excavators	2.20	13.94	24.52	1.21	1.11	2864.00
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
	3	Graders	3.33	10.46	32.61	1.83	1.69	2015.93
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Pavers	0.00	0.00	0.00	0.00	0.00	0.00
		Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
		Pumps	0.00	0.00	0.00	0.00	0.00	0.00
	4	Rollers	1.52	6.04	13.35	1.00	0.92	1118.22
		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
	3	Rubber Tired Loaders	1.62	9.35	20.51	0.70	0.64	1988.02
	4	Scrapers	6.08	29.04	74.82	3.02	2.78	6436.48
	14	Signal Boards	5.68	19.67	19.18	1.49	1.37	2204.07
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
	4	Tractors/Loaders/Backhoes	1.52	6.30	13.79	1.08	0.99	1345.57
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Grading/Excavation	pounds per day	25.7	114.2	245.3	12.2	11.3	21651.9
	Grading	tons per phase	0.9	4.0	8.6	0.4	0.4	762.1

Drainage/Utilities/Subgrade Override of Default Number of Vehicles	Default Number of Vehicles *Program-estimate*		ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	CO2 pounds/day
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
	3	Air Compressors	2.20	10.30	13.90	1.19	1.10	1523.84
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
		Cranes	0.00	0.00	0.00	0.00	0.00	0.00
		Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Excavators	0.00	0.00	0.00	0.00	0.00	0.00
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
	3	Generator Sets	1.67	8.99	12.25	0.89	0.82	1461.20
	3	Graders	3.33	10.46	32.61	1.83	1.69	2015.93
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Pavers	0.00	0.00	0.00	0.00	0.00	0.00
		Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	3	Plate Compactors	0.12	0.63	0.75	0.03	0.03	103.35
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
	3	Pumps	1.42	7.43	10.11	0.76	0.70	1188.42
		Rollers	0.00	0.00	0.00	0.00	0.00	0.00
	3	Rough Terrain Forklifts	0.75	6.08	9.14	0.53	0.49	1117.72
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
	4	Scrapers	6.08	29.04	74.82	3.02	2.78	6436.48
	14	Signal Boards	5.68	19.67	19.18	1.49	1.37	2204.07
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
	4	Tractors/Loaders/Backhoes	1.52	6.30	13.79	1.08	0.99	1345.57
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Drainage	pounds per day	22.8	98.9	186.5	10.8	10.0	17396.6
	Drainage	tons per phase	0.7	3.0	5.7	0.3	0.3	535.8

Paving Override of Default Number of Vehicles	Default Number of Vehicles *Program-estimate*	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	CO2 pounds/day
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
		Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
		Cranes	0.00	0.00	0.00	0.00	0.00	0.00
		Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Excavators	0.00	0.00	0.00	0.00	0.00	0.00
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
		Graders	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	3	Pavers	1.41	8.51	15.29	0.77	0.70	1444.62
	3	Paving Equipment	1.05	8.08	12.18	0.59	0.55	1278.52
		Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
		Pumps	0.00	0.00	0.00	0.00	0.00	0.00
	5	Rollers	1.90	7.55	16.69	1.24	1.14	1397.77
		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Scrapers	0.00	0.00	0.00	0.00	0.00	0.00
	14	Signal Boards	5.68	19.67	19.18	1.49	1.37	2204.07
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
	4	Tractors/Loaders/Backhoes	1.52	6.30	13.79	1.08	0.99	1345.57
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Paving	pounds per day	11.6	50.1	77.1	5.2	4.8	7670.6
	Paving	tons per phase	0.2	0.7	1.0	0.1	0.1	101.3
Total Emissions all Phases (tons per construction period) =>			1.8	8.1	16.0	0.9	0.8	1455.5

Equipment default values for horsepower and hours/day can be overridden in cells C289 through C322 and E289 through E322.

Equipment		Default Values Horsepower		Default Values Hours/day
Aerial Lifts		63		8
Air Compressors		106		8
Bore/Drill Rigs		206		8
Cement and Mortar Mixers		10		8
Concrete/Industrial Saws		64		8
Cranes		226		8
Crawler Tractors		208		8
Crushing/Proc. Equipment		142		8
Excavators		163		8
Forklifts		89		8
Generator Sets		66		8
Graders		175		8
Off-Highway Tractors		123		8
Off-Highway Trucks		400		8
Other Construction Equipment		172		8
Other General Industrial Equipment		88		8
Other Material Handling Equipment		167		8
Pavers		126		8
Paving Equipment		131		8
Plate Compactors		8		8
Pressure Washers		26		8
Pumps		53		8
Rollers		81		8
Rough Terrain Forklifts		100		8
Rubber Tired Dozers		255		8
Rubber Tired Loaders		200		8
Scrapers		362		8
Signal Boards		20		8
Skid Steer Loaders		65		8
Surfacing Equipment		254		8
Sweepers/Scrubbers		64		8
Tractors/Loaders/Backhoes		98		8
Trenchers		81		8
Welders		45		8

0

END OF DATA ENTRY SHEET

Road Construction Emissions Model, Version 7.1.5.1

Emission Estimates for -> Backbone Y2 Project Phases (English Units)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	CO2 (lbs/day)
Grubbing/Land Clearing	2.7	14.1	20.1	51.0	1.0	50.0	11.3	0.9	10.4	2,471.8
Grading/Excavation	9.7	49.1	94.3	54.7	4.7	50.0	14.7	4.3	10.4	9,892.0
Drainage/Utilities/Sub-Grade	8.3	40.8	73.1	54.0	4.0	50.0	14.1	3.7	10.4	7,826.4
Paving	4.2	21.0	29.4	2.0	2.0	-	1.8	1.8	-	3,591.4
Maximum (pounds/day)	9.7	49.1	94.3	54.7	4.7	50.0	14.7	4.3	10.4	9,892.0
Total (tons/construction project)	0.8	4.2	7.7	5.1	0.4	4.7	1.3	0.4	1.0	823.0

Notes:

Project Start Year ->	2016
Project Length (months) ->	10
Total Project Area (acres) ->	77
Maximum Area Disturbed/Day (acres) ->	5
Total Soil Imported/Exported (yd^3/day)->	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns H and I. Total PM2.5 emissions shown in Column J are the sum of exhaust and fugitive dust emissions shown in columns K and L.

Emission Estimates for -> Backbone Y2 Project Phases (Metric Units)	ROG (kgs/day)	CO (kgs/day)	NOx (kgs/day)	Total PM10 (kgs/day)	Exhaust PM10 (kgs/day)	Fugitive Dust PM10 (kgs/day)	Total PM2.5 (kgs/day)	Exhaust PM2.5 (kgs/day)	Fugitive Dust PM2.5 (kgs/day)	CO2 (kgs/day)
Grubbing/Land Clearing	1.2	6.4	9.1	23.2	0.5	22.7	5.1	0.4	4.7	1,123.6
Grading/Excavation	4.4	22.3	42.9	24.9	2.1	22.7	6.7	1.9	4.7	4,496.4
Drainage/Utilities/Sub-Grade	3.8	18.5	33.2	24.6	1.8	22.7	6.4	1.7	4.7	3,557.5
Paving	1.9	9.6	13.3	0.9	0.9	-	0.8	0.8	-	1,632.5
Maximum (kilograms/day)	4.4	22.3	42.9	24.9	2.1	22.7	6.7	1.9	4.7	4,496.4
Total (megagrams/construction project)	0.8	3.8	7.0	4.6	0.4	4.2	1.2	0.3	0.9	746.5

Notes:

Project Start Year ->	2016
Project Length (months) ->	10
Total Project Area (hectares) ->	31
Maximum Area Disturbed/Day (hectares) ->	2
Total Soil Imported/Exported (meters^3/day)->	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns H and I. Total PM2.5 emissions shown in Column J are the sume of exhaust and fugitive dust emissions shown in columns K and L.

Road Construction Emissions Model

Version 7.1.5.1

Data Entry Worksheet

Note: Required data input sections have a yellow background.
Optional data input sections have a blue background. Only areas with a yellow or blue background can be modified. Program defaults have a white background.
The user is required to enter information in cells C10 through C25.

SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.

Input Type		
Project Name	Backbone Y2	
Construction Start Year	2016	Enter a Year between 2009 and 2025 (inclusive)
Project Type	1	1 New Road Construction 2 Road Widening 3 Bridge/Overpass Construction
Project Construction Time	10.00	months
Predominant Soil/Site Type: Enter 1, 2, or 3	1	1. Sand Gravel 2. Weathered Rock-Earth 3. Blasted Rock
Project Length	1.82	miles
Total Project Area	77.00	acres
Maximum Area Disturbed/Day	5.00	acres
Water Trucks Used?	1	1. Yes 2. No
Soil Imported	0.00	yd^3/day
Soil Exported	0.00	yd^3/day
Average Truck Capacity	20	yd^3 (assume 20 if unknown)

The remaining sections of this sheet contain areas that can be modified by the user, although those modifications are optional.

Note: The program's estimates of construction period phase length can be overridden in cells C34 through C37.

Construction Periods	User Override of Construction Months	Program Calculated Months
Grubbing/Land Clearing		1.00
Grading/Excavation		4.00
Drainage/Utilities/Sub-Grade		3.50
Paving		1.50
Totals	0.00	10.00

2005	%	2006	%	2007	%
0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00

NOTE: soil hauling emissions are included in the Grading/Excavation Construction Period Phase, therefore the Construction Period for Grading/Excavation cannot be zero if hauling is part of the project.

Hauling emission default values can be overridden in cells C45 through C46.

Soil Hauling Emissions

User Input	User Override of Soil Hauling Defaults	Default Values
Miles/round trip		30
Round trips/day		0
Vehicle miles traveled/day (calculated)		0

Hauling Emissions	ROG	NOx	CO	PM10	PM2.5	CO2
Emission rate (grams/mile)	0.16	8.25	0.70	0.17	0.10	1679.86
Emission rate (grams/trip)	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day	0.00	0.00	0.00	0.00	0.00	0.00
Tons per contruction period	0.00	0.00	0.00	0.00	0.00	0.00

Worker commute default values can be overridden in cells C60 through C65.

Worker Commute Emissions

	User Override of Worker Commute Default Values	Default Values
Miles/ one-way trip		20
One-way trips/day		2
No. of employees: Grubbing/Land Clearing		8
No. of employees: Grading/Excavation		20
No. of employees: Drainage/Utilities/Sub-Grade		18
No. of employees: Paving		14

	ROG	NOx	CO	PM10	PM2.5	CO2
Emission rate - Grubbing/Land Clearing (grams/mile)	0.147	0.194	1.744	0.047	0.020	443.650
Emission rate - Grading/Excavation (grams/mile)	0.147	0.194	1.744	0.047	0.020	443.650
Emission rate - Draining/Utilities/Sub-Grade (gr/mile)	0.147	0.194	1.744	0.047	0.020	443.650
Emission rate - Paving (grams/mile)	0.147	0.194	1.744	0.047	0.020	443.650
Emission rate - Grubbing/Land Clearing (grams/trip)	0.505	0.323	4.200	0.004	0.003	95.592
Emission rate - Grading/Excavation (grams/trip)	0.505	0.323	4.200	0.004	0.003	95.592
Emission rate - Draining/Utilities/Sub-Grade (gr/trip)	0.505	0.323	4.200	0.004	0.003	95.592
Emission rate - Paving (grams/trip)	0.505	0.323	4.200	0.004	0.003	95.592
Pounds per day - Grubbing/Land Clearing	0.114	0.139	1.291	0.031	0.013	296.319
Tons per const. Period - Grub/Land Clear	0.001	0.002	0.014	0.000	0.000	3.260
Pounds per day - Grading/Excavation	0.304	0.371	3.443	0.083	0.035	790.185
Tons per const. Period - Grading/Excavation	0.013	0.016	0.151	0.004	0.002	34.768
Pounds per day - Drainage/Utilities/Sub-Grade	0.266	0.324	3.013	0.073	0.031	691.411
Tons per const. Period - Drain/Util/Sub-Grade	0.010	0.012	0.116	0.003	0.001	26.619
Pounds per day - Paving	0.209	0.255	2.367	0.057	0.024	543.252
Tons per const. Period - Paving	0.003	0.004	0.039	0.001	0.000	8.964
tons per construction period	0.028	0.035	0.321	0.008	0.003	73.611

Water truck default values can be overriden in cells C91 through C93 and E91 through E93.

Water Truck Emissions	User Override of Default # Water Trucks	Program Estimate of Number of Water Trucks	User Override of Truck Miles Traveled/Day	Default Values Miles Traveled/Day
Grubbing/Land Clearing - Exhaust		1		40
Grading/Excavation - Exhaust		1		40
Drainage/Utilities/Subgrade		1		40

	ROG	NOx	CO	PM10	PM2.5	CO2
Emission rate - Grubbing/Land Clearing (grams/mile)	0.16	8.25	0.70	0.17	0.10	1679.86
Emission rate - Grading/Excavation (grams/mile)	0.16	8.25	0.70	0.17	0.10	1679.86
Emission rate - Draining/Utilities/Sub-Grade (gr/mile)	0.16	8.25	0.70	0.17	0.10	1679.86
Pounds per day - Grubbing/Land Clearing	0.01	0.73	0.06	0.01	0.01	148.00
Tons per const. Period - Grub/Land Clear	0.00	0.01	0.00	0.00	0.00	1.63
Pound per day - Grading/Excavation	0.01	0.73	0.06	0.01	0.01	148.00
Tons per const. Period - Grading/Excavation	0.00	0.03	0.00	0.00	0.00	6.51
Pound per day - Drainage/Utilities/Subgrade	0.01	0.73	0.06	0.01	0.01	148.00
Tons per const. Period - Drainage/Utilities/Subgrade	0.00	0.03	0.00	0.00	0.00	5.70

Fugitive dust default values can be overridden in cells C110 through C112.

Fugitive Dust	User Override of Max Acreage Disturbed/Day	Default Maximum Acreage/Day	PM10 pounds/day	PM10 tons/per period	PM2.5 pounds/day	PM2.5 tons/per period
Fugitive Dust - Grubbing/Land Clearing		5	50.0	0.6	10.4	0.1
Fugitive Dust - Grading/Excavation		5	50.0	2.2	10.4	0.5
Fugitive Dust - Drainage/Utilities/Subgrade		5	50.0	1.9	10.4	0.4

Off-Road Equipment Emissions

Grubbing/Land Clearing Override of Default Number of Vehicles	Default Number of Vehicles *Program-estimate*	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	CO2 pounds/day
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
		Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
		Cranes	0.00	0.00	0.00	0.00	0.00	0.00
	1	Crawler Tractors	0.74	4.47	9.52	0.37	0.34	824.89
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	1	Excavators	0.41	2.79	4.47	0.22	0.20	572.86
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
		Graders	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Pavers	0.00	0.00	0.00	0.00	0.00	0.00
		Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
		Pumps	0.00	0.00	0.00	0.00	0.00	0.00
		Rollers	0.00	0.00	0.00	0.00	0.00	0.00
		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Scrapers	0.00	0.00	0.00	0.00	0.00	0.00
	4	Signal Boards	1.45	5.46	5.28	0.38	0.35	629.74
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
		Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Grubbing/Land Clearing	pounds per day	2.6	12.7	19.3	1.0	0.9	2027.5
	Grubbing/Land Clearing	tons per phase	0.0	0.1	0.2	0.0	0.0	22.3

Grading/Excavation	Default Number of Vehicles		ROG	CO	NOx	PM10	PM2.5	CO2
Override of Default Number of Vehicles	*Program-estimate*	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
		Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
	0	Cranes	0.00	0.00	0.00	0.00	0.00	0.00
	1	Crawler Tractors	0.74	4.47	9.52	0.37	0.34	824.89
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	3	Excavators	1.23	8.37	13.40	0.66	0.61	1718.59
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
	1	Graders	1.07	3.48	10.38	0.58	0.54	671.02
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Pavers	0.00	0.00	0.00	0.00	0.00	0.00
		Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
		Pumps	0.00	0.00	0.00	0.00	0.00	0.00
	2	Rollers	0.70	3.02	6.18	0.46	0.42	559.07
		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
	1	Rubber Tired Loaders	0.52	3.12	6.51	0.22	0.20	662.62
	2	Scrapers	2.91	14.51	35.39	1.43	1.31	3216.04
	4	Signal Boards	1.45	5.46	5.28	0.38	0.35	629.74
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
	2	Tractors/Loaders/Backhoes	0.72	3.15	6.54	0.50	0.46	671.85
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Grading/Excavation	pounds per day	9.3	45.6	93.2	4.6	4.2	8953.8
	Grading	tons per phase	0.4	2.0	4.1	0.2	0.2	394.0

Drainage/Utilities/Subgrade Override of Default Number of Vehicles	Default Number of Vehicles *Program-estimate*		ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	CO2 pounds/day
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
	1	Air Compressors	0.68	3.42	4.38	0.37	0.34	507.95
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
		Cranes	0.00	0.00	0.00	0.00	0.00	0.00
		Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Excavators	0.00	0.00	0.00	0.00	0.00	0.00
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
	1	Generator Sets	0.51	2.98	3.86	0.27	0.25	487.07
	1	Graders	1.07	3.48	10.38	0.58	0.54	671.02
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Pavers	0.00	0.00	0.00	0.00	0.00	0.00
		Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	1	Plate Compactors	0.04	0.21	0.25	0.01	0.01	34.45
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
	1	Pumps	0.44	2.47	3.19	0.23	0.22	396.14
		Rollers	0.00	0.00	0.00	0.00	0.00	0.00
	1	Rough Terrain Forklifts	0.22	2.03	2.73	0.15	0.14	372.74
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
	2	Scrapers	2.91	14.51	35.39	1.43	1.31	3216.04
	4	Signal Boards	1.45	5.46	5.28	0.38	0.35	629.74
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
	2	Tractors/Loaders/Backhoes	0.72	3.15	6.54	0.50	0.46	671.85
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Drainage	pounds per day	8.0	37.7	72.0	3.9	3.6	6987.0
	Drainage	tons per phase	0.3	1.5	2.8	0.2	0.1	269.0

Paving Override of Default Number of Vehicles	Default Number of Vehicles *Program-estimate*	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	CO2 pounds/day
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
		Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
		Cranes	0.00	0.00	0.00	0.00	0.00	0.00
		Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Excavators	0.00	0.00	0.00	0.00	0.00	0.00
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
		Graders	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	1	Pavers	0.42	2.84	4.49	0.22	0.21	481.68
	1	Paving Equipment	0.32	2.69	3.53	0.18	0.16	426.30
		Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
		Pumps	0.00	0.00	0.00	0.00	0.00	0.00
	3	Rollers	1.05	4.53	9.27	0.68	0.63	838.60
		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Scrapers	0.00	0.00	0.00	0.00	0.00	0.00
	4	Signal Boards	1.45	5.46	5.28	0.38	0.35	629.74
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
	2	Tractors/Loaders/Backhoes	0.72	3.15	6.54	0.50	0.46	671.85
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Paving	pounds per day	4.0	18.7	29.1	2.0	1.8	3048.2
	Paving	tons per phase	0.1	0.3	0.5	0.0	0.0	50.3
Total Emissions all Phases (tons per construction period) =>			0.8	3.9	7.6	0.4	0.4	735.6

Equipment default values for horsepower and hours/day can be overridden in cells C289 through C322 and E289 through E322.

Equipment		Default Values Horsepower		Default Values Hours/day
Aerial Lifts		63		8
Air Compressors		106		8
Bore/Drill Rigs		206		8
Cement and Mortar Mixers		10		8
Concrete/Industrial Saws		64		8
Cranes		226		8
Crawler Tractors		208		8
Crushing/Proc. Equipment		142		8
Excavators		163		8
Forklifts		89		8
Generator Sets		66		8
Graders		175		8
Off-Highway Tractors		123		8
Off-Highway Trucks		400		8
Other Construction Equipment		172		8
Other General Industrial Equipment		88		8
Other Material Handling Equipment		167		8
Pavers		126		8
Paving Equipment		131		8
Plate Compactors		8		8
Pressure Washers		26		8
Pumps		53		8
Rollers		81		8
Rough Terrain Forklifts		100		8
Rubber Tired Dozers		255		8
Rubber Tired Loaders		200		8
Scrapers		362		8
Signal Boards		20		8
Skid Steer Loaders		65		8
Surfacing Equipment		254		8
Sweepers/Scrubbers		64		8
Tractors/Loaders/Backhoes		98		8
Trenchers		81		8
Welders		45		8

0

END OF DATA ENTRY SHEET

Road Construction Emissions Model, Version 7.1.5.1

Emission Estimates for -> Backbone Y5 Project Phases (English Units)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	CO2 (lbs/day)
Grubbing/Land Clearing	6.1	40.3	51.0	152.3	2.3	150.0	33.2	2.0	31.2	8,231.7
Grading/Excavation	17.9	116.4	174.9	158.1	8.1	150.0	38.5	7.3	31.2	24,539.4
Drainage/Utilities/Sub-Grade	15.6	100.0	134.7	157.1	7.1	150.0	37.6	6.4	31.2	19,487.2
Paving	7.0	49.8	50.7	3.0	3.0	-	2.7	2.7	-	8,678.6
Maximum (pounds/day)	17.9	116.4	174.9	158.1	8.1	150.0	38.5	7.3	31.2	24,539.4
Total (tons/construction project)	1.3	8.2	11.4	11.8	0.6	11.2	2.8	0.5	2.3	1,651.0

Notes: Project Start Year -> 2019
Project Length (months) -> 8
Total Project Area (acres) -> 113
Maximum Area Disturbed/Day (acres) -> 15
Total Soil Imported/Exported (yd^3/day)-> 0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns H and I. Total PM2.5 emissions shown in Column J are the sum of exhaust and fugitive dust emissions shown in columns K and L.

Emission Estimates for -> Backbone Y5 Project Phases (Metric Units)	ROG (kgs/day)	CO (kgs/day)	NOx (kgs/day)	Total PM10 (kgs/day)	Exhaust PM10 (kgs/day)	Fugitive Dust PM10 (kgs/day)	Total PM2.5 (kgs/day)	Exhaust PM2.5 (kgs/day)	Fugitive Dust PM2.5 (kgs/day)	CO2 (kgs/day)
Grubbing/Land Clearing	2.8	18.3	23.2	69.2	1.0	68.2	15.1	0.9	14.2	3,741.7
Grading/Excavation	8.2	52.9	79.5	71.9	3.7	68.2	17.5	3.3	14.2	11,154.3
Drainage/Utilities/Sub-Grade	7.1	45.5	61.2	71.4	3.2	68.2	17.1	2.9	14.2	8,857.8
Paving	3.2	22.6	23.1	1.4	1.4	-	1.2	1.2	-	3,944.8
Maximum (kilograms/day)	8.2	52.9	79.5	71.9	3.7	68.2	17.5	3.3	14.2	11,154.3
Total (megagrams/construction project)	1.1	7.4	10.4	10.7	0.5	10.2	2.6	0.5	2.1	1,497.5

Notes: Project Start Year -> 2019
Project Length (months) -> 8
Total Project Area (hectares) -> 46
Maximum Area Disturbed/Day (hectares) -> 6
Total Soil Imported/Exported (meters^3/day)-> 0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns H and I. Total PM2.5 emissions shown in Column J are the sume of exhaust and fugitive dust emissions shown in columns K and L.

Road Construction Emissions Model

Version 7.1.5.1

Data Entry Worksheet

Note: Required data input sections have a yellow background.
Optional data input sections have a blue background. Only areas with a yellow or blue background can be modified. Program defaults have a white background.
The user is required to enter information in cells C10 through C25.

SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

Input Type

Project Name	Backbone Y5	
Construction Start Year	2019	Enter a Year between 2009 and 2025 (inclusive)
Project Type	1	1 New Road Construction 2 Road Widening 3 Bridge/Overpass Construction
Project Construction Time	8.00	months
Predominant Soil/Site Type: Enter 1, 2, or 3	1	1. Sand Gravel 2. Weathered Rock-Earth 3. Blasted Rock
Project Length	5.92	miles
Total Project Area	113.40	acres
Maximum Area Disturbed/Day	15.00	acres
Water Trucks Used?	1	1. Yes 2. No
Soil Imported	0.00	yd^3/day
Soil Exported	0.00	yd^3/day
Average Truck Capacity	20	yd^3 (assume 20 if unknown)

To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.

The remaining sections of this sheet contain areas that can be modified by the user, although those modifications are optional.

Note: The program's estimates of construction period phase length can be overridden in cells C34 through C37.

Construction Periods	User Override of Construction Months	Program Calculated Months	2005	%	2006	%	2007	%
Grubbing/Land Clearing		0.80	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation		3.20	0.00	0.00	0.00	0.00	0.00	0.00
Drainage/Utilities/Sub-Grade		2.80	0.00	0.00	0.00	0.00	0.00	0.00
Paving		1.20	0.00	0.00	0.00	0.00	0.00	0.00
Totals	0.00	8.00						

NOTE: soil hauling emissions are included in the Grading/Excavation Construction Period Phase, therefore the Construction Period for Grading/Excavation cannot be zero if hauling is part of the project.

Hauling emission default values can be overridden in cells C45 through C46.

Soil Hauling Emissions

User Input	User Override of Soil Hauling Defaults	Default Values
Miles/round trip		30
Round trips/day		0
Vehicle miles traveled/day (calculated)		0

Hauling Emissions	ROG	NOx	CO	PM10	PM2.5	CO2
Emission rate (grams/mile)	0.15	5.88	0.69	0.16	0.09	1596.49
Emission rate (grams/trip)	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day	0.00	0.00	0.00	0.00	0.00	0.00
Tons per contruction period	0.00	0.00	0.00	0.00	0.00	0.00

Worker commute default values can be overridden in cells C60 through C65.

Worker Commute Emissions

	User Override of Worker Commute Default Values	Default Values
Miles/ one-way trip		20
One-way trips/day		2
No. of employees: Grubbing/Land Clearing		23
No. of employees: Grading/Excavation		50
No. of employees: Drainage/Utilities/Sub-Grade		48
No. of employees: Paving		34

	ROG	NOx	CO	PM10	PM2.5	CO2
Emission rate - Grubbing/Land Clearing (grams/mile)	0.112	0.140	1.291	0.047	0.020	441.739
Emission rate - Grading/Excavation (grams/mile)	0.112	0.140	1.291	0.047	0.020	441.739
Emission rate - Draining/Utilities/Sub-Grade (gr/mile)	0.112	0.140	1.291	0.047	0.020	441.739
Emission rate - Paving (grams/mile)	0.112	0.140	1.291	0.047	0.020	441.739
Emission rate - Grubbing/Land Clearing (grams/trip)	0.382	0.228	3.101	0.004	0.003	95.822
Emission rate - Grading/Excavation (grams/trip)	0.382	0.228	3.101	0.004	0.003	95.822
Emission rate - Draining/Utilities/Sub-Grade (gr/trip)	0.382	0.228	3.101	0.004	0.003	95.822
Emission rate - Paving (grams/trip)	0.382	0.228	3.101	0.004	0.003	95.822
Pounds per day - Grubbing/Land Clearing	0.260	0.301	2.867	0.093	0.039	885.193
Tons per const. Period - Grub/Land Clear	0.002	0.003	0.025	0.001	0.000	7.790
Pounds per day - Grading/Excavation	0.577	0.668	6.370	0.207	0.087	1967.094
Tons per const. Period - Grading/Excavation	0.020	0.024	0.224	0.007	0.003	69.242
Pounds per day - Drainage/Utilities/Sub-Grade	0.548	0.634	6.052	0.196	0.083	1868.740
Tons per const. Period - Drain/Util/Sub-Grade	0.017	0.020	0.186	0.006	0.003	57.557
Pounds per day - Paving	0.390	0.451	4.300	0.140	0.059	1327.789
Tons per const. Period - Paving	0.005	0.006	0.057	0.002	0.001	17.527
tons per construction period	0.045	0.052	0.493	0.016	0.007	152.115

Water truck default values can be overriden in cells C91 through C93 and E91 through E93.

Water Truck Emissions	User Override of Default # Water Trucks	Program Estimate of Number of Water Trucks	User Override of Truck Miles Traveled/Day	Default Values Miles Traveled/Day
Grubbing/Land Clearing - Exhaust		3		120
Grading/Excavation - Exhaust		3		120
Drainage/Utilities/Subgrade		2		80

	ROG	NOx	CO	PM10	PM2.5	CO2
Emission rate - Grubbing/Land Clearing (grams/mile)	0.15	5.88	0.69	0.16	0.09	1596.49
Emission rate - Grading/Excavation (grams/mile)	0.15	5.88	0.69	0.16	0.09	1596.49
Emission rate - Draining/Utilities/Sub-Grade (gr/mile)	0.15	5.88	0.69	0.16	0.09	1596.49
Pounds per day - Grubbing/Land Clearing	0.12	4.66	0.55	0.12	0.07	1265.94
Tons per const. Period - Grub/Land Clear	0.00	0.04	0.00	0.00	0.00	11.14
Pound per day - Grading/Excavation	0.12	4.66	0.55	0.12	0.07	1265.94
Tons per const. Period - Grading/Excavation	0.00	0.16	0.02	0.00	0.00	44.56
Pound per day - Drainage/Utilities/Subgrade	0.05	2.07	0.24	0.05	0.03	562.64
Tons per const. Period - Drainage/Utilities/Subgrade	0.00	0.06	0.01	0.00	0.00	17.33

Fugitive dust default values can be overridden in cells C110 through C112.

Fugitive Dust	User Override of Max Acreage Disturbed/Day	Default Maximum Acreage/Day	PM10 pounds/day	PM10 tons/per period	PM2.5 pounds/day	PM2.5 tons/per period
Fugitive Dust - Grubbing/Land Clearing		15	150.0	1.3	31.2	0.3
Fugitive Dust - Grading/Excavation		15	150.0	5.3	31.2	1.1
Fugitive Dust - Drainage/Utilities/Subgrade		15	150.0	4.6	31.2	1.0

Off-Road Equipment Emissions

Grubbing/Land Clearing Override of Default Number of Vehicles	Default Number of Vehicles *Program-estimate*	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	CO2 pounds/day
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
		Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
		Cranes	0.00	0.00	0.00	0.00	0.00	0.00
	3	Crawler Tractors	1.88	13.40	23.47	0.89	0.81	2473.41
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	3	Excavators	0.85	8.36	8.32	0.40	0.37	1717.91
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
		Graders	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Pavers	0.00	0.00	0.00	0.00	0.00	0.00
		Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
		Pumps	0.00	0.00	0.00	0.00	0.00	0.00
		Rollers	0.00	0.00	0.00	0.00	0.00	0.00
		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Scrapers	0.00	0.00	0.00	0.00	0.00	0.00
	12	Signal Boards	2.95	15.09	14.20	0.79	0.72	1889.21
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
		Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Grubbing/Land Clearing	pounds per day	5.7	36.9	46.0	2.1	1.9	6080.5
	Grubbing/Land Clearing	tons per phase	0.0	0.3	0.4	0.0	0.0	53.5

Grading/Excavation	Default Number of Vehicles		ROG	CO	NOx	PM10	PM2.5	CO2
Override of Default Number of Vehicles	*Program-estimate*	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
		Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
	2	Cranes	1.03	6.01	11.68	0.49	0.46	1203.37
	3	Crawler Tractors	1.88	13.40	23.47	0.89	0.81	2473.41
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	5	Excavators	1.41	13.94	13.86	0.67	0.62	2863.18
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
	3	Graders	2.41	10.38	22.70	1.27	1.17	2000.72
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Pavers	0.00	0.00	0.00	0.00	0.00	0.00
		Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
		Pumps	0.00	0.00	0.00	0.00	0.00	0.00
	4	Rollers	0.94	6.03	8.90	0.59	0.54	1117.75
		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
	3	Rubber Tired Loaders	1.24	9.34	14.30	0.48	0.44	1987.58
	4	Scrapers	4.41	29.02	51.10	2.00	1.84	6432.00
	12	Signal Boards	2.95	15.09	14.20	0.79	0.72	1889.21
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
	4	Tractors/Loaders/Backhoes	0.98	6.27	9.39	0.63	0.58	1339.16
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Grading/Excavation	pounds per day	17.2	109.5	169.6	7.8	7.2	21306.4
	Grading	tons per phase	0.6	3.9	6.0	0.3	0.3	750.0

Drainage/Utilities/Subgrade Override of Default Number of Vehicles	Default Number of Vehicles *Program-estimate*		ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	CO2 pounds/day
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
	3	Air Compressors	1.59	10.15	10.78	0.79	0.73	1523.84
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
		Cranes	0.00	0.00	0.00	0.00	0.00	0.00
		Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Excavators	0.00	0.00	0.00	0.00	0.00	0.00
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
	3	Generator Sets	1.15	8.83	9.59	0.60	0.55	1461.20
	3	Graders	2.41	10.38	22.70	1.27	1.17	2000.72
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Pavers	0.00	0.00	0.00	0.00	0.00	0.00
		Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	3	Plate Compactors	0.12	0.63	0.75	0.03	0.03	103.35
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
	3	Pumps	0.99	7.30	7.92	0.51	0.47	1188.42
		Rollers	0.00	0.00	0.00	0.00	0.00	0.00
	3	Rough Terrain Forklifts	0.45	6.08	5.60	0.25	0.23	1117.97
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
	4	Scrapers	4.41	29.02	51.10	2.00	1.84	6432.00
	12	Signal Boards	2.95	15.09	14.20	0.79	0.72	1889.21
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
	4	Tractors/Loaders/Backhoes	0.98	6.27	9.39	0.63	0.58	1339.16
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Drainage	pounds per day	15.0	93.8	132.0	6.9	6.3	17055.9
	Drainage	tons per phase	0.5	2.9	4.1	0.2	0.2	525.3

Paving Override of Default Number of Vehicles	Default Number of Vehicles *Program-estimate*	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	CO2 pounds/day
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
		Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
		Cranes	0.00	0.00	0.00	0.00	0.00	0.00
		Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Excavators	0.00	0.00	0.00	0.00	0.00	0.00
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
		Graders	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	3	Pavers	0.86	8.52	8.96	0.44	0.40	1446.45
	3	Paving Equipment	0.65	8.08	6.60	0.33	0.30	1278.77
		Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
		Pumps	0.00	0.00	0.00	0.00	0.00	0.00
	5	Rollers	1.18	7.54	11.12	0.73	0.67	1397.19
		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Scrapers	0.00	0.00	0.00	0.00	0.00	0.00
	12	Signal Boards	2.95	15.09	14.20	0.79	0.72	1889.21
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
	4	Tractors/Loaders/Backhoes	0.98	6.27	9.39	0.63	0.58	1339.16
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Paving	pounds per day	6.6	45.5	50.3	2.9	2.7	7350.8
	Paving	tons per phase	0.1	0.6	0.7	0.0	0.0	97.0
Total Emissions all Phases (tons per construction period) =>			1.2	7.7	11.1	0.5	0.5	1425.8

Equipment default values for horsepower and hours/day can be overridden in cells C289 through C322 and E289 through E322.

Equipment		Default Values Horsepower		Default Values Hours/day
Aerial Lifts		63		8
Air Compressors		106		8
Bore/Drill Rigs		206		8
Cement and Mortar Mixers		10		8
Concrete/Industrial Saws		64		8
Cranes		226		8
Crawler Tractors		208		8
Crushing/Proc. Equipment		142		8
Excavators		163		8
Forklifts		89		8
Generator Sets		66		8
Graders		175		8
Off-Highway Tractors		123		8
Off-Highway Trucks		400		8
Other Construction Equipment		172		8
Other General Industrial Equipment		88		8
Other Material Handling Equipment		167		8
Pavers		126		8
Paving Equipment		131		8
Plate Compactors		8		8
Pressure Washers		26		8
Pumps		53		8
Rollers		81		8
Rough Terrain Forklifts		100		8
Rubber Tired Dozers		255		8
Rubber Tired Loaders		200		8
Scrapers		362		8
Signal Boards		20		8
Skid Steer Loaders		65		8
Surfacing Equipment		254		8
Sweepers/Scrubbers		64		8
Tractors/Loaders/Backhoes		98		8
Trenchers		81		8
Welders		45		8

0

END OF DATA ENTRY SHEET

Road Construction Emissions Model, Version 7.1.5.1

Emission Estimates for -> Backbone Y6 Project Phases (English Units)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	CO2 (lbs/day)
Grubbing/Land Clearing	4.2	26.9	26.5	51.3	1.3	50.0	11.5	1.1	10.4	4,525.7
Grading/Excavation	8.9	61.2	74.5	53.6	3.6	50.0	13.6	3.2	10.4	11,935.7
Drainage/Utilities/Sub-Grade	8.0	52.9	62.0	53.1	3.1	50.0	13.2	2.8	10.4	9,871.7
Paving	4.9	33.5	31.5	1.8	1.8	-	1.6	1.6	-	5,653.1
Maximum (pounds/day)	8.9	61.2	74.5	53.6	3.6	50.0	13.6	3.2	10.4	11,935.7
Total (tons/construction project)	0.7	4.5	5.2	4.0	0.3	3.7	1.0	0.2	0.8	838.6

Notes:

Project Start Year ->	2020
Project Length (months) ->	8
Total Project Area (acres) ->	35
Maximum Area Disturbed/Day (acres) ->	5
Total Soil Imported/Exported (yd^3/day)->	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns H and I. Total PM2.5 emissions shown in Column J are the sum of exhaust and fugitive dust emissions shown in columns K and L.

Emission Estimates for -> Backbone Y6 Project Phases (Metric Units)	ROG (kgs/day)	CO (kgs/day)	NOx (kgs/day)	Total PM10 (kgs/day)	Exhaust PM10 (kgs/day)	Fugitive Dust PM10 (kgs/day)	Total PM2.5 (kgs/day)	Exhaust PM2.5 (kgs/day)	Fugitive Dust PM2.5 (kgs/day)	CO2 (kgs/day)
Grubbing/Land Clearing	1.9	12.2	12.0	23.3	0.6	22.7	5.2	0.5	4.7	2,057.1
Grading/Excavation	4.0	27.8	33.9	24.3	1.6	22.7	6.2	1.5	4.7	5,425.3
Drainage/Utilities/Sub-Grade	3.6	24.1	28.2	24.2	1.4	22.7	6.0	1.3	4.7	4,487.1
Paving	2.2	15.2	14.3	0.8	0.8	-	0.7	0.7	-	2,569.6
Maximum (kilograms/day)	4.0	27.8	33.9	24.3	1.6	22.7	6.2	1.5	4.7	5,425.3
Total (megagrams/construction project)	0.6	4.0	4.7	3.6	0.2	3.4	0.9	0.2	0.7	760.7

Notes:

Project Start Year ->	2020
Project Length (months) ->	8
Total Project Area (hectares) ->	14
Maximum Area Disturbed/Day (hectares) ->	2
Total Soil Imported/Exported ($meters^3$/day)->	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns H and I. Total PM2.5 emissions shown in Column J are the sume of exhaust and fugitive dust emissions shown in columns K and L.

Road Construction Emissions Model

Version 7.1.5.1

Data Entry Worksheet

Note: Required data input sections have a yellow background.
Optional data input sections have a blue background. Only areas with a yellow or blue background can be modified. Program defaults have a white background.
The user is required to enter information in cells C10 through C25.

SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

Input Type		
Project Name	Backbone Y6	
Construction Start Year	2020	Enter a Year between 2009 and 2025 (inclusive)
Project Type	1	1 New Road Construction 2 Road Widening 3 Bridge/Overpass Construction
Project Construction Time	8.00	months
Predominant Soil/Site Type: Enter 1, 2, or 3	1	1. Sand Gravel 2. Weathered Rock-Earth 3. Blasted Rock
Project Length	6.72	miles
Total Project Area	35.00	acres
Maximum Area Disturbed/Day	5.00	acres
Water Trucks Used?	1	1. Yes 2. No
Soil Imported	0.00	yd^3/day
Soil Exported	0.00	yd^3/day
Average Truck Capacity	20	yd^3 (assume 20 if unknown)

To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.

The remaining sections of this sheet contain areas that can be modified by the user, although those modifications are optional.

Note: The program's estimates of construction period phase length can be overridden in cells C34 through C37.

Construction Periods	User Override of Construction Months	Program Calculated Months	2005	%	2006	%	2007	%
Grubbing/Land Clearing		0.80	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation		3.20	0.00	0.00	0.00	0.00	0.00	0.00
Drainage/Utilities/Sub-Grade		2.80	0.00	0.00	0.00	0.00	0.00	0.00
Paving		1.20	0.00	0.00	0.00	0.00	0.00	0.00
Totals	0.00	8.00						

NOTE: soil hauling emissions are included in the Grading/Excavation Construction Period Phase, therefore the Construction Period for Grading/Excavation cannot be zero if hauling is part of the project.

Hauling emission default values can be overridden in cells C45 through C46.

Soil Hauling Emissions

User Input	User Override of Soil Hauling Defaults	Default Values
Miles/round trip		30
Round trips/day		0
Vehicle miles traveled/day (calculated)		0

Hauling Emissions	ROG	NOx	CO	PM10	PM2.5	CO2
Emission rate (grams/mile)	0.16	4.67	0.71	0.16	0.09	1558.59
Emission rate (grams/trip)	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day	0.00	0.00	0.00	0.00	0.00	0.00
Tons per contruction period	0.00	0.00	0.00	0.00	0.00	0.00

Worker commute default values can be overridden in cells C60 through C65.

Worker Commute Emissions

	User Override of Worker Commute Default Values	Default Values
Miles/ one-way trip		20
One-way trips/day		2
No. of employees: Grubbing/Land Clearing		20
No. of employees: Grading/Excavation		33
No. of employees: Drainage/Utilities/Sub-Grade		30
No. of employees: Paving		26

	ROG	NOx	CO	PM10	PM2.5	CO2
Emission rate - Grubbing/Land Clearing (grams/mile)	0.105	0.129	1.196	0.047	0.020	441.856
Emission rate - Grading/Excavation (grams/mile)	0.105	0.129	1.196	0.047	0.020	441.856
Emission rate - Draining/Utilities/Sub-Grade (gr/mile)	0.105	0.129	1.196	0.047	0.020	441.856
Emission rate - Paving (grams/mile)	0.105	0.129	1.196	0.047	0.020	441.856
Emission rate - Grubbing/Land Clearing (grams/trip)	0.353	0.205	2.824	0.004	0.004	95.943
Emission rate - Grading/Excavation (grams/trip)	0.353	0.205	2.824	0.004	0.004	95.943
Emission rate - Draining/Utilities/Sub-Grade (gr/trip)	0.353	0.205	2.824	0.004	0.004	95.943
Emission rate - Paving (grams/trip)	0.353	0.205	2.824	0.004	0.004	95.943
Pounds per day - Grubbing/Land Clearing	0.217	0.245	2.356	0.083	0.035	787.054
Tons per const. Period - Grub/Land Clear	0.002	0.002	0.021	0.001	0.000	6.926
Pounds per day - Grading/Excavation	0.352	0.398	3.828	0.134	0.057	1278.962
Tons per const. Period - Grading/Excavation	0.012	0.014	0.135	0.005	0.002	45.019
Pounds per day - Drainage/Utilities/Sub-Grade	0.325	0.367	3.533	0.124	0.052	1180.580
Tons per const. Period - Drain/Util/Sub-Grade	0.010	0.011	0.109	0.004	0.002	36.362
Pounds per day - Paving	0.285	0.321	3.092	0.109	0.046	1033.008
Tons per const. Period - Paving	0.004	0.004	0.041	0.001	0.001	13.636
tons per construction period	0.028	0.032	0.305	0.011	0.005	101.943

Water truck default values can be overriden in cells C91 through C93 and E91 through E93.

Water Truck Emissions	User Override of Default # Water Trucks	Program Estimate of Number of Water Trucks	User Override of Truck Miles Traveled/Day	Default Values Miles Traveled/Day
Grubbing/Land Clearing - Exhaust		1		40
Grading/Excavation - Exhaust		1		40
Drainage/Utilities/Subgrade		1		40

	ROG	NOx	CO	PM10	PM2.5	CO2
Emission rate - Grubbing/Land Clearing (grams/mile)	0.16	4.67	0.71	0.16	0.09	1558.59
Emission rate - Grading/Excavation (grams/mile)	0.16	4.67	0.71	0.16	0.09	1558.59
Emission rate - Draining/Utilities/Sub-Grade (gr/mile)	0.16	4.67	0.71	0.16	0.09	1558.59
Pounds per day - Grubbing/Land Clearing	0.01	0.41	0.06	0.01	0.01	137.32
Tons per const. Period - Grub/Land Clear	0.00	0.00	0.00	0.00	0.00	1.21
Pound per day - Grading/Excavation	0.01	0.41	0.06	0.01	0.01	137.32
Tons per const. Period - Grading/Excavation	0.00	0.01	0.00	0.00	0.00	4.83
Pound per day - Drainage/Utilities/Subgrade	0.01	0.41	0.06	0.01	0.01	137.32
Tons per const. Period - Drainage/Utilities/Subgrade	0.00	0.01	0.00	0.00	0.00	4.23

Fugitive dust default values can be overridden in cells C110 through C112.

Fugitive Dust	User Override of Max Acreage Disturbed/Day	Default Maximum Acreage/Day	PM10 pounds/day	PM10 tons/per period	PM2.5 pounds/day	PM2.5 tons/per period
Fugitive Dust - Grubbing/Land Clearing		5	50.0	0.4	10.4	0.1
Fugitive Dust - Grading/Excavation		5	50.0	1.8	10.4	0.4
Fugitive Dust - Drainage/Utilities/Subgrade		5	50.0	1.5	10.4	0.3

Off-Road Equipment Emissions

Grubbing/Land Clearing Override of Default Number of Vehicles	Default Number of Vehicles *Program-estimate*	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	CO2 pounds/day
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
		Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
		Cranes	0.00	0.00	0.00	0.00	0.00	0.00
	1	Crawler Tractors	0.59	4.47	7.29	0.27	0.25	824.47
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	1	Excavators	0.27	2.79	2.49	0.12	0.11	572.76
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
		Graders	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Pavers	0.00	0.00	0.00	0.00	0.00	0.00
		Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
		Pumps	0.00	0.00	0.00	0.00	0.00	0.00
		Rollers	0.00	0.00	0.00	0.00	0.00	0.00
		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Scrapers	0.00	0.00	0.00	0.00	0.00	0.00
	14	Signal Boards	3.06	17.25	16.02	0.80	0.74	2204.07
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
		Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Grubbing/Land Clearing	pounds per day	3.9	24.5	25.8	1.2	1.1	3601.3
	Grubbing/Land Clearing	tons per phase	0.0	0.2	0.2	0.0	0.0	31.7

Grading/Excavation	Default Number of Vehicles		ROG	CO	NOx	PM10	PM2.5	CO2
Override of Default Number of Vehicles	*Program-estimate*	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
		Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
	0	Cranes	0.00	0.00	0.00	0.00	0.00	0.00
	1	Crawler Tractors	0.59	4.47	7.29	0.27	0.25	824.47
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	3	Excavators	0.80	8.37	7.48	0.36	0.33	1718.27
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
	1	Graders	0.75	3.46	6.96	0.39	0.36	666.39
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Pavers	0.00	0.00	0.00	0.00	0.00	0.00
		Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
		Pumps	0.00	0.00	0.00	0.00	0.00	0.00
	2	Rollers	0.43	3.02	4.13	0.26	0.24	558.94
		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
	1	Rubber Tired Loaders	0.39	3.11	4.36	0.14	0.13	662.32
	2	Scrapers	2.06	14.51	23.25	0.91	0.83	3215.57
	14	Signal Boards	3.06	17.25	16.02	0.80	0.74	2204.07
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
	2	Tractors/Loaders/Backhoes	0.44	3.13	4.23	0.27	0.25	669.38
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Grading/Excavation	pounds per day	8.5	57.3	73.7	3.4	3.1	10519.4
	Grading	tons per phase	0.3	2.0	2.6	0.1	0.1	370.3

Drainage/Utilities/Subgrade Override of Default Number of Vehicles	Default Number of Vehicles *Program-estimate*		ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	CO2 pounds/day
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
	1	Air Compressors	0.49	3.37	3.35	0.23	0.21	507.95
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
		Cranes	0.00	0.00	0.00	0.00	0.00	0.00
		Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Excavators	0.00	0.00	0.00	0.00	0.00	0.00
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
	1	Generator Sets	0.35	2.93	2.98	0.18	0.16	487.07
	1	Graders	0.75	3.46	6.96	0.39	0.36	666.39
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Pavers	0.00	0.00	0.00	0.00	0.00	0.00
		Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	1	Plate Compactors	0.04	0.21	0.25	0.01	0.01	34.45
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
	1	Pumps	0.30	2.43	2.46	0.15	0.14	396.14
		Rollers	0.00	0.00	0.00	0.00	0.00	0.00
	1	Rough Terrain Forklifts	0.14	2.03	1.74	0.07	0.07	372.80
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
	2	Scrapers	2.06	14.51	23.25	0.91	0.83	3215.57
	14	Signal Boards	3.06	17.25	16.02	0.80	0.74	2204.07
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
	2	Tractors/Loaders/Backhoes	0.44	3.13	4.23	0.27	0.25	669.38
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Drainage	pounds per day	7.6	49.3	61.3	3.0	2.8	8553.8
	Drainage	tons per phase	0.2	1.5	1.9	0.1	0.1	263.5

Paving	Default Number of Vehicles		ROG	CO	NOx	PM10	PM2.5	CO2
Override of Default Number of Vehicles	*Program-estimate*	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
		Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
		Cranes	0.00	0.00	0.00	0.00	0.00	0.00
		Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Excavators	0.00	0.00	0.00	0.00	0.00	0.00
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
		Graders	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	1	Pavers	0.26	2.84	2.69	0.13	0.12	482.04
	1	Paving Equipment	0.21	2.69	2.09	0.10	0.10	426.23
		Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
		Pumps	0.00	0.00	0.00	0.00	0.00	0.00
	3	Rollers	0.65	4.53	6.20	0.40	0.36	838.41
		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Scrapers	0.00	0.00	0.00	0.00	0.00	0.00
	14	Signal Boards	3.06	17.25	16.02	0.80	0.74	2204.07
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
	2	Tractors/Loaders/Backhoes	0.44	3.13	4.23	0.27	0.25	669.38
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Paving	pounds per day	4.6	30.4	31.2	1.7	1.6	4620.1
	Paving	tons per phase	0.1	0.4	0.4	0.0	0.0	61.0
Total Emissions all Phases (tons per construction period) =>			0.6	4.2	5.1	0.2	0.2	726.4

Equipment default values for horsepower and hours/day can be overridden in cells C289 through C322 and E289 through E322.

Equipment		Default Values Horsepower		Default Values Hours/day
Aerial Lifts		63		8
Air Compressors		106		8
Bore/Drill Rigs		206		8
Cement and Mortar Mixers		10		8
Concrete/Industrial Saws		64		8
Cranes		226		8
Crawler Tractors		208		8
Crushing/Proc. Equipment		142		8
Excavators		163		8
Forklifts		89		8
Generator Sets		66		8
Graders		175		8
Off-Highway Tractors		123		8
Off-Highway Trucks		400		8
Other Construction Equipment		172		8
Other General Industrial Equipment		88		8
Other Material Handling Equipment		167		8
Pavers		126		8
Paving Equipment		131		8
Plate Compactors		8		8
Pressure Washers		26		8
Pumps		53		8
Rollers		81		8
Rough Terrain Forklifts		100		8
Rubber Tired Dozers		255		8
Rubber Tired Loaders		200		8
Scrapers		362		8
Signal Boards		20		8
Skid Steer Loaders		65		8
Surfacing Equipment		254		8
Sweepers/Scrubbers		64		8
Tractors/Loaders/Backhoes		98		8
Trenchers		81		8
Welders		45		8

0

END OF DATA ENTRY SHEET

Road Construction Emissions Model, Version 7.1.5.1

Emission Estimates for -> Backbone Y7 Project Phases (English Units)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	CO2 (lbs/day)
Grubbing/Land Clearing	1.5	11.7	12.7	50.6	0.6	50.0	10.9	0.5	10.4	2,252.3
Grading/Excavation	5.8	45.9	56.0	52.6	2.6	50.0	12.7	2.3	10.4	9,665.5
Drainage/Utilities/Sub-Grade	4.9	37.4	44.2	52.1	2.1	50.0	12.3	1.9	10.4	7,601.3
Paving	2.2	18.2	17.4	1.0	1.0	-	0.9	0.9	-	3,380.3
Maximum (pounds/day)	5.8	45.9	56.0	52.6	2.6	50.0	12.7	2.3	10.4	9,665.5
Total (tons/construction project)	0.5	3.9	4.6	4.9	0.2	4.7	1.2	0.2	1.0	798.5

Notes:

Project Start Year ->	2021
Project Length (months) ->	10
Total Project Area (acres) ->	34
Maximum Area Disturbed/Day (acres) ->	5
Total Soil Imported/Exported (yd^3/day)->	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns H and I. Total PM2.5 emissions shown in Column J are the sum of exhaust and fugitive dust emissions shown in columns K and L.

Emission Estimates for -> Backbone Y7 Project Phases (Metric Units)	ROG (kgs/day)	CO (kgs/day)	NOx (kgs/day)	Total PM10 (kgs/day)	Exhaust PM10 (kgs/day)	Fugitive Dust PM10 (kgs/day)	Total PM2.5 (kgs/day)	Exhaust PM2.5 (kgs/day)	Fugitive Dust PM2.5 (kgs/day)	CO2 (kgs/day)
Grubbing/Land Clearing	0.7	5.3	5.8	23.0	0.3	22.7	5.0	0.2	4.7	1,023.8
Grading/Excavation	2.7	20.8	25.5	23.9	1.2	22.7	5.8	1.1	4.7	4,393.4
Drainage/Utilities/Sub-Grade	2.2	17.0	20.1	23.7	1.0	22.7	5.6	0.9	4.7	3,455.1
Paving	1.0	8.3	7.9	0.4	0.4	-	0.4	0.4	-	1,536.5
Maximum (kilograms/day)	2.7	20.8	25.5	23.9	1.2	22.7	5.8	1.1	4.7	4,393.4
Total (megagrams/construction project)	0.5	3.5	4.2	4.4	0.2	4.2	1.1	0.2	0.9	724.2

Notes:

Project Start Year ->	2021
Project Length (months) ->	10
Total Project Area (hectares) ->	14
Maximum Area Disturbed/Day (hectares) ->	2
Total Soil Imported/Exported (meters^3/day)->	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns H and I. Total PM2.5 emissions shown in Column J are the sume of exhaust and fugitive dust emissions shown in columns K and L.

Road Construction Emissions Model

Version 7.1.5.1

Data Entry Worksheet

Note: Required data input sections have a yellow background.
Optional data input sections have a blue background. Only areas with a yellow or blue background can be modified. Program defaults have a white background.
The user is required to enter information in cells C10 through C25.

SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

Input Type

Project Name	Backbone Y7	
Construction Start Year	2021	Enter a Year between 2009 and 2025 (inclusive)
Project Type	1	1 New Road Construction 2 Road Widening 3 Bridge/Overpass Construction
Project Construction Time	10.00	months
Predominant Soil/Site Type: Enter 1, 2, or 3	1	1. Sand Gravel 2. Weathered Rock-Earth 3. Blasted Rock
Project Length	1.23	miles
Total Project Area	33.50	acres
Maximum Area Disturbed/Day	5.00	acres
Water Trucks Used?	1	1. Yes 2. No
Soil Imported	0.00	yd^3/day
Soil Exported	0.00	yd^3/day
Average Truck Capacity	20	yd^3 (assume 20 if unknown)

To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.

The remaining sections of this sheet contain areas that can be modified by the user, although those modifications are optional.

Note: The program's estimates of construction period phase length can be overridden in cells C34 through C37.

Construction Periods	User Override of Construction Months	Program Calculated Months	2005	%	2006	%	2007	%
Grubbing/Land Clearing		1.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation		4.00	0.00	0.00	0.00	0.00	0.00	0.00
Drainage/Utilities/Sub-Grade		3.50	0.00	0.00	0.00	0.00	0.00	0.00
Paving		1.50	0.00	0.00	0.00	0.00	0.00	0.00
Totals	0.00	10.00						

NOTE: soil hauling emissions are included in the Grading/Excavation Construction Period Phase, therefore the Construction Period for Grading/Excavation cannot be zero if hauling is part of the project.

Hauling emission default values can be overridden in cells C45 through C46.

Soil Hauling Emissions

User Input	User Override of Soil Hauling Defaults	Default Values
Miles/round trip		30
Round trips/day		0
Vehicle miles traveled/day (calculated)		0

Hauling Emissions	ROG	NOx	CO	PM10	PM2.5	CO2
Emission rate (grams/mile)	0.17	2.87	0.77	0.15	0.09	1551.98
Emission rate (grams/trip)	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day	0.00	0.00	0.00	0.00	0.00	0.00
Tons per contruction period	0.00	0.00	0.00	0.00	0.00	0.00

Worker commute default values can be overridden in cells C60 through C65.

Worker Commute Emissions

	User Override of Worker Commute Default Values	Default Values
Miles/ one-way trip		20
One-way trips/day		2
No. of employees: Grubbing/Land Clearing		6
No. of employees: Grading/Excavation		19
No. of employees: Drainage/Utilities/Sub-Grade		16
No. of employees: Paving		13

	ROG	NOx	CO	PM10	PM2.5	CO2
Emission rate - Grubbing/Land Clearing (grams/mile)	0.101	0.120	1.122	0.047	0.020	441.814
Emission rate - Grading/Excavation (grams/mile)	0.101	0.120	1.122	0.047	0.020	441.814
Emission rate - Draining/Utilities/Sub-Grade (gr/mile)	0.101	0.120	1.122	0.047	0.020	441.814
Emission rate - Paving (grams/mile)	0.101	0.120	1.122	0.047	0.020	441.814
Emission rate - Grubbing/Land Clearing (grams/trip)	0.330	0.185	2.592	0.004	0.004	96.043
Emission rate - Grading/Excavation (grams/trip)	0.330	0.185	2.592	0.004	0.004	96.043
Emission rate - Draining/Utilities/Sub-Grade (gr/trip)	0.330	0.185	2.592	0.004	0.004	96.043
Emission rate - Paving (grams/trip)	0.330	0.185	2.592	0.004	0.004	96.043
Pounds per day - Grubbing/Land Clearing	0.065	0.071	0.689	0.026	0.011	245.934
Tons per const. Period - Grub/Land Clear	0.001	0.001	0.008	0.000	0.000	2.705
Pounds per day - Grading/Excavation	0.194	0.213	2.067	0.078	0.033	737.802
Tons per const. Period - Grading/Excavation	0.009	0.009	0.091	0.003	0.001	32.463
Pounds per day - Drainage/Utilities/Sub-Grade	0.168	0.185	1.792	0.067	0.028	639.429
Tons per const. Period - Drain/Util/Sub-Grade	0.006	0.007	0.069	0.003	0.001	24.618
Pounds per day - Paving	0.129	0.142	1.378	0.052	0.022	491.868
Tons per const. Period - Paving	0.002	0.002	0.023	0.001	0.000	8.116
tons per construction period	0.018	0.020	0.190	0.007	0.003	67.902

Water truck default values can be overriden in cells C91 through C93 and E91 through E93.

Water Truck Emissions	User Override of Default # Water Trucks	Program Estimate of Number of Water Trucks	User Override of Truck Miles Traveled/Day	Default Values Miles Traveled/Day
Grubbing/Land Clearing - Exhaust		1		40
Grading/Excavation - Exhaust		1		40
Drainage/Utilities/Subgrade		1		40

	ROG	NOx	CO	PM10	PM2.5	CO2
Emission rate - Grubbing/Land Clearing (grams/mile)	0.17	2.87	0.77	0.15	0.09	1551.98
Emission rate - Grading/Excavation (grams/mile)	0.17	2.87	0.77	0.15	0.09	1551.98
Emission rate - Draining/Utilities/Sub-Grade (gr/mile)	0.17	2.87	0.77	0.15	0.09	1551.98
Pounds per day - Grubbing/Land Clearing	0.01	0.25	0.07	0.01	0.01	136.74
Tons per const. Period - Grub/Land Clear	0.00	0.00	0.00	0.00	0.00	1.50
Pound per day - Grading/Excavation	0.01	0.25	0.07	0.01	0.01	136.74
Tons per const. Period - Grading/Excavation	0.00	0.01	0.00	0.00	0.00	6.02
Pound per day - Drainage/Utilities/Subgrade	0.01	0.25	0.07	0.01	0.01	136.74
Tons per const. Period - Drainage/Utilities/Subgrade	0.00	0.01	0.00	0.00	0.00	5.26

Fugitive dust default values can be overridden in cells C110 through C112.

Fugitive Dust	User Override of Max Acreage Disturbed/Day	Default Maximum Acreage/Day	PM10 pounds/day	PM10 tons/per period	PM2.5 pounds/day	PM2.5 tons/per period
Fugitive Dust - Grubbing/Land Clearing		5	50.0	0.6	10.4	0.1
Fugitive Dust - Grading/Excavation		5	50.0	2.2	10.4	0.5
Fugitive Dust - Drainage/Utilities/Subgrade		5	50.0	1.9	10.4	0.4

Off-Road Equipment Emissions

Grubbing/Land Clearing Override of Default Number of Vehicles	Default Number of Vehicles *Program-estimate*	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	CO2 pounds/day
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
		Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
		Cranes	0.00	0.00	0.00	0.00	0.00	0.00
	1	Crawler Tractors	0.56	4.47	6.82	0.26	0.24	824.44
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	1	Excavators	0.25	2.79	2.23	0.11	0.10	572.84
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
		Graders	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Pavers	0.00	0.00	0.00	0.00	0.00	0.00
		Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
		Pumps	0.00	0.00	0.00	0.00	0.00	0.00
		Rollers	0.00	0.00	0.00	0.00	0.00	0.00
		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Scrapers	0.00	0.00	0.00	0.00	0.00	0.00
	3	Signal Boards	0.59	3.64	3.33	0.15	0.14	472.30
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
		Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Grubbing/Land Clearing	pounds per day	1.4	10.9	12.4	0.5	0.5	1869.6
	Grubbing/Land Clearing	tons per phase	0.0	0.1	0.1	0.0	0.0	20.6

Grading/Excavation	Default Number of Vehicles		ROG	CO	NOx	PM10	PM2.5	CO2
Override of Default Number of Vehicles	*Program-estimate*	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
		Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
	0	Cranes	0.00	0.00	0.00	0.00	0.00	0.00
	1	Crawler Tractors	0.56	4.47	6.82	0.26	0.24	824.44
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	3	Excavators	0.74	8.37	6.68	0.32	0.30	1718.52
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
	1	Graders	0.67	3.46	6.09	0.34	0.31	667.07
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Pavers	0.00	0.00	0.00	0.00	0.00	0.00
		Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
		Pumps	0.00	0.00	0.00	0.00	0.00	0.00
	2	Rollers	0.39	3.02	3.82	0.23	0.21	558.99
		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
	1	Rubber Tired Loaders	0.35	3.11	3.82	0.13	0.12	662.39
	2	Scrapers	1.92	14.52	21.18	0.82	0.76	3217.54
	3	Signal Boards	0.59	3.64	3.33	0.15	0.14	472.30
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
	2	Tractors/Loaders/Backhoes	0.39	3.14	3.81	0.22	0.21	669.68
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Grading/Excavation	pounds per day	5.6	43.7	55.5	2.5	2.3	8790.9
	Grading	tons per phase	0.2	1.9	2.4	0.1	0.1	386.8

Drainage/Utilities/Subgrade Override of Default Number of Vehicles	Default Number of Vehicles *Program-estimate*		ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	CO2 pounds/day
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
	1	Air Compressors	0.41	3.28	2.83	0.18	0.16	507.95
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
		Cranes	0.00	0.00	0.00	0.00	0.00	0.00
		Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Excavators	0.00	0.00	0.00	0.00	0.00	0.00
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
	1	Generator Sets	0.29	2.88	2.55	0.14	0.13	487.07
	1	Graders	0.67	3.46	6.09	0.34	0.31	667.07
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Pavers	0.00	0.00	0.00	0.00	0.00	0.00
		Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	1	Plate Compactors	0.04	0.21	0.25	0.01	0.01	34.45
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
	1	Pumps	0.25	2.38	2.10	0.12	0.11	396.14
		Rollers	0.00	0.00	0.00	0.00	0.00	0.00
	1	Rough Terrain Forklifts	0.13	2.03	1.63	0.06	0.06	372.90
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
	2	Scrapers	1.92	14.52	21.18	0.82	0.76	3217.54
	3	Signal Boards	0.59	3.64	3.33	0.15	0.14	472.30
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
	2	Tractors/Loaders/Backhoes	0.39	3.14	3.81	0.22	0.21	669.68
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Drainage	pounds per day	4.7	35.5	43.8	2.0	1.9	6825.1
	Drainage	tons per phase	0.2	1.4	1.7	0.1	0.1	262.8

Paving Override of Default Number of Vehicles	Default Number of Vehicles *Program-estimate*	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	CO2 pounds/day
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
		Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
		Cranes	0.00	0.00	0.00	0.00	0.00	0.00
		Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Excavators	0.00	0.00	0.00	0.00	0.00	0.00
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
		Graders	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	1	Pavers	0.25	2.84	2.48	0.12	0.11	481.81
	1	Paving Equipment	0.20	2.69	1.89	0.09	0.09	426.15
		Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
		Pumps	0.00	0.00	0.00	0.00	0.00	0.00
	3	Rollers	0.59	4.53	5.73	0.35	0.32	838.48
		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Scrapers	0.00	0.00	0.00	0.00	0.00	0.00
	3	Signal Boards	0.59	3.64	3.33	0.15	0.14	472.30
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
	2	Tractors/Loaders/Backhoes	0.39	3.14	3.81	0.22	0.21	669.68
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Paving	pounds per day	2.0	16.8	17.2	0.9	0.9	2888.4
	Paving	tons per phase	0.0	0.3	0.3	0.0	0.0	47.7
Total Emissions all Phases (tons per construction period) =>			0.5	3.7	4.5	0.2	0.2	717.8

Equipment default values for horsepower and hours/day can be overridden in cells C289 through C322 and E289 through E322.

Equipment		Default Values Horsepower		Default Values Hours/day
Aerial Lifts		63		8
Air Compressors		106		8
Bore/Drill Rigs		206		8
Cement and Mortar Mixers		10		8
Concrete/Industrial Saws		64		8
Cranes		226		8
Crawler Tractors		208		8
Crushing/Proc. Equipment		142		8
Excavators		163		8
Forklifts		89		8
Generator Sets		66		8
Graders		175		8
Off-Highway Tractors		123		8
Off-Highway Trucks		400		8
Other Construction Equipment		172		8
Other General Industrial Equipment		88		8
Other Material Handling Equipment		167		8
Pavers		126		8
Paving Equipment		131		8
Plate Compactors		8		8
Pressure Washers		26		8
Pumps		53		8
Rollers		81		8
Rough Terrain Forklifts		100		8
Rubber Tired Dozers		255		8
Rubber Tired Loaders		200		8
Scrapers		362		8
Signal Boards		20		8
Skid Steer Loaders		65		8
Surfacing Equipment		254		8
Sweepers/Scrubbers		64		8
Tractors/Loaders/Backhoes		98		8
Trenchers		81		8
Welders		45		8

0

END OF DATA ENTRY SHEET

Road Construction Emissions Model, Version 7.1.5.1

Emission Estimates for -> Backbone Y10 Project Phases (English Units)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	CO2 (lbs/day)
Grubbing/Land Clearing	1.7	15.3	12.4	50.5	0.5	50.0	10.8	0.4	10.4	2,869.3
Grading/Excavation	5.1	49.3	42.9	51.9	1.9	50.0	12.1	1.7	10.4	10,287.5
Drainage/Utilities/Sub-Grade	4.4	40.9	36.2	51.6	1.6	50.0	11.8	1.4	10.4	8,224.4
Paving	2.2	21.8	16.8	0.8	0.8	-	0.7	0.7	-	4,002.2
Maximum (pounds/day)	5.1	49.3	42.9	51.9	1.9	50.0	12.1	1.7	10.4	10,287.5
Total (tons/construction project)	0.4	4.3	3.7	4.8	0.2	4.7	1.1	0.1	1.0	866.9

Notes:

Project Start Year ->	2024
Project Length (months) ->	10
Total Project Area (acres) ->	52
Maximum Area Disturbed/Day (acres) ->	5
Total Soil Imported/Exported (yd^3/day)->	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns H and I. Total PM2.5 emissions shown in Column J are the sum of exhaust and fugitive dust emissions shown in columns K and L.

Emission Estimates for -> Backbone Y10 Project Phases (Metric Units)	ROG (kgs/day)	CO (kgs/day)	NOx (kgs/day)	Total PM10 (kgs/day)	Exhaust PM10 (kgs/day)	Fugitive Dust PM10 (kgs/day)	Total PM2.5 (kgs/day)	Exhaust PM2.5 (kgs/day)	Fugitive Dust PM2.5 (kgs/day)	CO2 (kgs/day)
Grubbing/Land Clearing	0.8	7.0	5.6	23.0	0.2	22.7	4.9	0.2	4.7	1,304.2
Grading/Excavation	2.3	22.4	19.5	23.6	0.9	22.7	5.5	0.8	4.7	4,676.1
Drainage/Utilities/Sub-Grade	2.0	18.6	16.5	23.4	0.7	22.7	5.4	0.6	4.7	3,738.4
Paving	1.0	9.9	7.6	0.4	0.4	-	0.3	0.3	-	1,819.2
Maximum (kilograms/day)	2.3	22.4	19.5	23.6	0.9	22.7	5.5	0.8	4.7	4,676.1
Total (megagrams/construction project)	0.4	3.9	3.4	4.4	0.1	4.2	1.0	0.1	0.9	786.3

Notes:

Project Start Year ->	2024
Project Length (months) ->	10
Total Project Area (hectares) ->	21
Maximum Area Disturbed/Day (hectares) ->	2
Total Soil Imported/Exported (meters^3/day)->	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns H and I. Total PM2.5 emissions shown in Column J are the sume of exhaust and fugitive dust emissions shown in columns K and L.

Road Construction Emissions Model

Version 7.1.5.1

Data Entry Worksheet

Note: Required data input sections have a yellow background.
Optional data input sections have a blue background. Only areas with a yellow or blue background can be modified. Program defaults have a white background.
The user is required to enter information in cells C10 through C25.

SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

Input Type

Project Name	Backbone Y10	
Construction Start Year	2024	Enter a Year between 2009 and 2025 (inclusive)
Project Type	1	1 New Road Construction 2 Road Widening 3 Bridge/Overpass Construction
Project Construction Time	10.00	months
Predominant Soil/Site Type: Enter 1, 2, or 3	1	1. Sand Gravel 2. Weathered Rock-Earth 3. Blasted Rock
Project Length	2.73	miles
Total Project Area	52.20	acres
Maximum Area Disturbed/Day	5.00	acres
Water Trucks Used?	1	1. Yes 2. No
Soil Imported	0.00	yd^3/day
Soil Exported	0.00	yd^3/day
Average Truck Capacity	20	yd^3 (assume 20 if unknown)

To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.

The remaining sections of this sheet contain areas that can be modified by the user, although those modifications are optional.

Note: The program's estimates of construction period phase length can be overridden in cells C34 through C37.

Construction Periods	User Override of Construction Months	Program Calculated Months	2005	%	2006	%	2007	%
Grubbing/Land Clearing		1.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation		4.00	0.00	0.00	0.00	0.00	0.00	0.00
Drainage/Utilities/Sub-Grade		3.50	0.00	0.00	0.00	0.00	0.00	0.00
Paving		1.50	0.00	0.00	0.00	0.00	0.00	0.00
Totals	0.00	10.00						

NOTE: soil hauling emissions are included in the Grading/Excavation Construction Period Phase, therefore the Construction Period for Grading/Excavation cannot be zero if hauling is part of the project.

Hauling emission default values can be overridden in cells C45 through C46.

Soil Hauling Emissions	User Override of Soil Hauling Defaults	Default Values
User Input		
Miles/round trip		30
Round trips/day		0
Vehicle miles traveled/day (calculated)		0

Hauling Emissions	**ROG**	**NOx**	**CO**	**PM10**	**PM2.5**	**CO2**
Emission rate (grams/mile)	0.17	1.37	0.77	0.15	0.08	1541.90
Emission rate (grams/trip)	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day	0.00	0.00	0.00	0.00	0.00	0.00
Tons per contruction period	0.00	0.00	0.00	0.00	0.00	0.00

Worker commute default values can be overridden in cells C60 through C65.

Worker Commute Emissions	User Override of Worker Commute Default Values	Default Values
Miles/ one-way trip		20
One-way trips/day		2
No. of employees: Grubbing/Land Clearing		10
No. of employees: Grading/Excavation		23
No. of employees: Drainage/Utilities/Sub-Grade		20
No. of employees: Paving		16

	ROG	**NOx**	**CO**	**PM10**	**PM2.5**	**CO2**
Emission rate - Grubbing/Land Clearing (grams/mile)	0.090	0.099	0.953	0.047	0.020	441.648
Emission rate - Grading/Excavation (grams/mile)	0.090	0.099	0.953	0.047	0.020	441.648
Emission rate - Draining/Utilities/Sub-Grade (gr/mile)	0.090	0.099	0.953	0.047	0.020	441.648
Emission rate - Paving (grams/mile)	0.090	0.099	0.953	0.047	0.020	441.648
Emission rate - Grubbing/Land Clearing (grams/trip)	0.276	0.142	2.058	0.004	0.004	96.252
Emission rate - Grading/Excavation (grams/trip)	0.276	0.142	2.058	0.004	0.004	96.252
Emission rate - Draining/Utilities/Sub-Grade (gr/trip)	0.276	0.142	2.058	0.004	0.004	96.252
Emission rate - Paving (grams/trip)	0.276	0.142	2.058	0.004	0.004	96.252
Pounds per day - Grubbing/Land Clearing	0.091	0.094	0.930	0.041	0.017	393.357
Tons per const. Period - Grub/Land Clear	0.001	0.001	0.010	0.000	0.000	4.327
Pounds per day - Grading/Excavation	0.206	0.211	2.093	0.093	0.039	885.054
Tons per const. Period - Grading/Excavation	0.009	0.009	0.092	0.004	0.002	38.942
Pounds per day - Drainage/Utilities/Sub-Grade	0.183	0.188	1.861	0.083	0.035	786.714
Tons per const. Period - Drain/Util/Sub-Grade	0.007	0.007	0.072	0.003	0.001	30.289
Pounds per day - Paving	0.149	0.152	1.512	0.067	0.028	639.205
Tons per const. Period - Paving	0.002	0.003	0.025	0.001	0.000	10.547
tons per construction period	0.020	0.020	0.199	0.009	0.004	84.105

Water truck default values can be overriden in cells C91 through C93 and E91 through E93.

Water Truck Emissions	User Override of Default # Water Trucks	Program Estimate of Number of Water Trucks	User Override of Truck Miles Traveled/Day	Default Values Miles Traveled/Day
Grubbing/Land Clearing - Exhaust		1		40
Grading/Excavation - Exhaust		1		40
Drainage/Utilities/Subgrade		1		40

	ROG	NOx	CO	PM10	PM2.5	CO2
Emission rate - Grubbing/Land Clearing (grams/mile)	0.17	1.37	0.77	0.15	0.08	1541.90
Emission rate - Grading/Excavation (grams/mile)	0.17	1.37	0.77	0.15	0.08	1541.90
Emission rate - Draining/Utilities/Sub-Grade (gr/mile)	0.17	1.37	0.77	0.15	0.08	1541.90
Pounds per day - Grubbing/Land Clearing	0.01	0.12	0.07	0.01	0.01	135.85
Tons per const. Period - Grub/Land Clear	0.00	0.00	0.00	0.00	0.00	1.49
Pound per day - Grading/Excavation	0.01	0.12	0.07	0.01	0.01	135.85
Tons per const. Period - Grading/Excavation	0.00	0.01	0.00	0.00	0.00	5.98
Pound per day - Drainage/Utilities/Subgrade	0.01	0.12	0.07	0.01	0.01	135.85
Tons per const. Period - Drainage/Utilities/Subgrade	0.00	0.00	0.00	0.00	0.00	5.23

Fugitive dust default values can be overridden in cells C110 through C112.

Fugitive Dust	User Override of Max Acreage Disturbed/Day	Default Maximum Acreage/Day	PM10 pounds/day	PM10 tons/per period	PM2.5 pounds/day	PM2.5 tons/per period
Fugitive Dust - Grubbing/Land Clearing		5	50.0	0.6	10.4	0.1
Fugitive Dust - Grading/Excavation		5	50.0	2.2	10.4	0.5
Fugitive Dust - Drainage/Utilities/Subgrade		5	50.0	1.9	10.4	0.4

Off-Road Equipment Emissions

Grubbing/Land Clearing Override of Default Number of Vehicles	Default Number of Vehicles *Program-estimate*	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	CO2 pounds/day
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
		Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
		Cranes	0.00	0.00	0.00	0.00	0.00	0.00
	1	Crawler Tractors	0.43	4.46	4.65	0.18	0.17	822.59
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	1	Excavators	0.20	2.79	1.45	0.07	0.07	572.92
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
		Graders	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Pavers	0.00	0.00	0.00	0.00	0.00	0.00
		Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
		Pumps	0.00	0.00	0.00	0.00	0.00	0.00
		Rollers	0.00	0.00	0.00	0.00	0.00	0.00
		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Scrapers	0.00	0.00	0.00	0.00	0.00	0.00
	6	Signal Boards	0.93	7.06	6.09	0.19	0.18	944.60
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
		Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Grubbing/Land Clearing	pounds per day	1.6	14.3	12.2	0.4	0.4	2340.1
	Grubbing/Land Clearing	tons per phase	0.0	0.2	0.1	0.0	0.0	25.7

Grading/Excavation	Default Number of Vehicles		ROG	CO	NOx	PM10	PM2.5	CO2
Override of Default Number of Vehicles	*Program-estimate*	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
		Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
	0	Cranes	0.00	0.00	0.00	0.00	0.00	0.00
	1	Crawler Tractors	0.43	4.46	4.65	0.18	0.17	822.59
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	3	Excavators	0.59	8.37	4.35	0.21	0.20	1718.77
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
	1	Graders	0.48	3.46	4.03	0.22	0.20	667.03
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Pavers	0.00	0.00	0.00	0.00	0.00	0.00
		Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
		Pumps	0.00	0.00	0.00	0.00	0.00	0.00
	2	Rollers	0.30	3.02	3.03	0.16	0.15	559.11
		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
	1	Rubber Tired Loaders	0.26	3.12	2.30	0.08	0.07	662.70
	2	Scrapers	1.57	14.53	15.23	0.60	0.55	3220.14
	6	Signal Boards	0.93	7.06	6.09	0.19	0.18	944.60
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
	2	Tractors/Loaders/Backhoes	0.30	3.15	2.91	0.13	0.12	671.61
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Grading/Excavation	pounds per day	4.9	47.2	42.6	1.8	1.6	9266.6
	Grading	tons per phase	0.2	2.1	1.9	0.1	0.1	407.7

Drainage/Utilities/Subgrade Override of Default Number of Vehicles	Default Number of Vehicles *Program-estimate*		ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	CO2 pounds/day
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
	1	Air Compressors	0.34	3.27	2.28	0.12	0.11	507.95
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
		Cranes	0.00	0.00	0.00	0.00	0.00	0.00
		Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Excavators	0.00	0.00	0.00	0.00	0.00	0.00
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
	1	Generator Sets	0.23	2.87	2.06	0.09	0.09	487.07
	1	Graders	0.48	3.46	4.03	0.22	0.20	667.03
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Pavers	0.00	0.00	0.00	0.00	0.00	0.00
		Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	1	Plate Compactors	0.04	0.21	0.25	0.01	0.01	34.45
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
	1	Pumps	0.20	2.37	1.70	0.08	0.07	396.14
		Rollers	0.00	0.00	0.00	0.00	0.00	0.00
	1	Rough Terrain Forklifts	0.11	2.03	1.36	0.04	0.04	372.86
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
	2	Scrapers	1.57	14.53	15.23	0.60	0.55	3220.14
	6	Signal Boards	0.93	7.06	6.09	0.19	0.18	944.60
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
	2	Tractors/Loaders/Backhoes	0.30	3.15	2.91	0.13	0.12	671.61
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Drainage	pounds per day	4.2	38.9	35.9	1.5	1.4	7301.8
	Drainage	tons per phase	0.2	1.5	1.4	0.1	0.1	281.1

Paving Override of Default Number of Vehicles	Default Number of Vehicles *Program-estimate*	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	CO2 pounds/day
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
		Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
		Cranes	0.00	0.00	0.00	0.00	0.00	0.00
		Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Excavators	0.00	0.00	0.00	0.00	0.00	0.00
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
		Graders	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	1	Pavers	0.18	2.84	1.66	0.08	0.07	481.92
	1	Paving Equipment	0.17	2.69	1.46	0.07	0.06	426.16
		Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
		Pumps	0.00	0.00	0.00	0.00	0.00	0.00
	3	Rollers	0.45	4.53	4.54	0.24	0.22	838.67
		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Scrapers	0.00	0.00	0.00	0.00	0.00	0.00
	6	Signal Boards	0.93	7.06	6.09	0.19	0.18	944.60
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
	2	Tractors/Loaders/Backhoes	0.30	3.15	2.91	0.13	0.12	671.61
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Paving	pounds per day	2.0	20.3	16.7	0.7	0.7	3363.0
	Paving	tons per phase	0.0	0.3	0.3	0.0	0.0	55.5
Total Emissions all Phases (tons per construction period) =>			0.4	4.1	3.7	0.2	0.1	770.1

Equipment default values for horsepower and hours/day can be overridden in cells C289 through C322 and E289 through E322.

Equipment		Default Values Horsepower		Default Values Hours/day
Aerial Lifts		63		8
Air Compressors		106		8
Bore/Drill Rigs		206		8
Cement and Mortar Mixers		10		8
Concrete/Industrial Saws		64		8
Cranes		226		8
Crawler Tractors		208		8
Crushing/Proc. Equipment		142		8
Excavators		163		8
Forklifts		89		8
Generator Sets		66		8
Graders		175		8
Off-Highway Tractors		123		8
Off-Highway Trucks		400		8
Other Construction Equipment		172		8
Other General Industrial Equipment		88		8
Other Material Handling Equipment		167		8
Pavers		126		8
Paving Equipment		131		8
Plate Compactors		8		8
Pressure Washers		26		8
Pumps		53		8
Rollers		81		8
Rough Terrain Forklifts		100		8
Rubber Tired Dozers		255		8
Rubber Tired Loaders		200		8
Scrapers		362		8
Signal Boards		20		8
Skid Steer Loaders		65		8
Surfacing Equipment		254		8
Sweepers/Scrubbers		64		8
Tractors/Loaders/Backhoes		98		8
Trenchers		81		8
Welders		45		8

0

END OF DATA ENTRY SHEET

Road Construction Emissions Model, Version 7.1.5.1

Emission Estimates for -> Backbone Y12 Project Phases (English Units)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	CO2 (lbs/day)
Grubbing/Land Clearing	1.7	16.5	12.3	50.5	0.5	50.0	10.8	0.4	10.4	3,075.5
Grading/Excavation	4.8	50.4	38.4	51.6	1.6	50.0	11.9	1.5	10.4	10,492.3
Drainage/Utilities/Sub-Grade	4.2	42.0	33.2	51.4	1.4	50.0	11.6	1.2	10.4	8,429.4
Paving	2.2	22.9	16.8	0.7	0.7	-	0.6	0.6	-	4,208.7
Maximum (pounds/day)	4.8	50.4	38.4	51.6	1.6	50.0	11.9	1.5	10.4	10,492.3
Total (tons/construction project)	0.4	4.4	3.4	4.8	0.1	4.7	1.1	0.1	1.0	889.5

Notes:

Project Start Year ->	2026
Project Length (months) ->	10
Total Project Area (acres) ->	65
Maximum Area Disturbed/Day (acres) ->	5
Total Soil Imported/Exported (yd^3/day)->	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns H and I. Total PM2.5 emissions shown in Column J are the sum of exhaust and fugitive dust emissions shown in columns K and L.

Emission Estimates for -> Backbone Y12 Project Phases (Metric Units)	ROG (kgs/day)	CO (kgs/day)	NOx (kgs/day)	Total PM10 (kgs/day)	Exhaust PM10 (kgs/day)	Fugitive Dust PM10 (kgs/day)	Total PM2.5 (kgs/day)	Exhaust PM2.5 (kgs/day)	Fugitive Dust PM2.5 (kgs/day)	CO2 (kgs/day)
Grubbing/Land Clearing	0.8	7.5	5.6	22.9	0.2	22.7	4.9	0.2	4.7	1,398.0
Grading/Excavation	2.2	22.9	17.4	23.5	0.7	22.7	5.4	0.7	4.7	4,769.2
Drainage/Utilities/Sub-Grade	1.9	19.1	15.1	23.4	0.6	22.7	5.3	0.6	4.7	3,831.6
Paving	1.0	10.4	7.6	0.3	0.3	-	0.3	0.3	-	1,913.0
Maximum (kilograms/day)	2.2	22.9	17.4	23.5	0.7	22.7	5.4	0.7	4.7	4,769.2
Total (megagrams/construction project)	0.4	4.0	3.1	4.4	0.1	4.2	1.0	0.1	0.9	806.8

Notes:

Project Start Year ->	2026
Project Length (months) ->	10
Total Project Area (hectares) ->	26
Maximum Area Disturbed/Day (hectares) ->	2
Total Soil Imported/Exported (meters^3/day)->	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns H and I. Total PM2.5 emissions shown in Column J are the sume of exhaust and fugitive dust emissions shown in columns K and L.

Road Construction Emissions Model

Version 7.1.5.1

Data Entry Worksheet

Note: Required data input sections have a yellow background.
Optional data input sections have a blue background. Only areas with a yellow or blue background can be modified. Program defaults have a white background.
The user is required to enter information in cells C10 through C25.

SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

Input Type			
Project Name	Backbone Y12		
Construction Start Year	2026	Enter a Year between 2009 and 2025 (inclusive)	**WARNING:Start Year must be between 2005 and 2025 inclusive**
Project Type	1	1 New Road Construction 2 Road Widening 3 Bridge/Overpass Construction	
Project Construction Time	10.00	months	
Predominant Soil/Site Type: Enter 1, 2, or 3	1	1. Sand Gravel 2. Weathered Rock-Earth 3. Blasted Rock	
Project Length	3.41	miles	
Total Project Area	65.30	acres	
Maximum Area Disturbed/Day	5.00	acres	
Water Trucks Used?	1	1. Yes 2. No	
Soil Imported	0.00	yd^3/day	
Soil Exported	0.00	yd^3/day	
Average Truck Capacity	20	yd^3 (assume 20 if unknown)	

To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.

The remaining sections of this sheet contain areas that can be modified by the user, although those modifications are optional.

Note: The program's estimates of construction period phase length can be overridden in cells C34 through C37.

Construction Periods	User Override of Construction Months	Program Calculated Months	2005	%	2006	%	2007	%
Grubbing/Land Clearing		1.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation		4.00	0.00	0.00	0.00	0.00	0.00	0.00
Drainage/Utilities/Sub-Grade		3.50	0.00	0.00	0.00	0.00	0.00	0.00
Paving		1.50	0.00	0.00	0.00	0.00	0.00	0.00
Totals	0.00	10.00						

NOTE: soil hauling emissions are included in the Grading/Excavation Construction Period Phase, therefore the Construction Period for Grading/Excavation cannot be zero if hauling is part of the project.

Hauling emission default values can be overridden in cells C45 through C46.

Soil Hauling Emissions

User Input	User Override of Soil Hauling Defaults	Default Values
Miles/round trip		30
Round trips/day		0
Vehicle miles traveled/day (calculated)		0

Hauling Emissions	ROG	NOx	CO	PM10	PM2.5	CO2
Emission rate (grams/mile)	0.17	1.38	0.78	0.15	0.08	1541.89
Emission rate (grams/trip)	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day	0.00	0.00	0.00	0.00	0.00	0.00
Tons per contruction period	0.00	0.00	0.00	0.00	0.00	0.00

Worker commute default values can be overridden in cells C60 through C65.

Worker Commute Emissions

	User Override of Worker Commute Default Values	Default Values
Miles/ one-way trip		20
One-way trips/day		2
No. of employees: Grubbing/Land Clearing		11
No. of employees: Grading/Excavation		24
No. of employees: Drainage/Utilities/Sub-Grade		21
No. of employees: Paving		18

	ROG	NOx	CO	PM10	PM2.5	CO2
Emission rate - Grubbing/Land Clearing (grams/mile)	0.087	0.095	0.914	0.047	0.020	441.584
Emission rate - Grading/Excavation (grams/mile)	0.087	0.095	0.914	0.047	0.020	441.584
Emission rate - Draining/Utilities/Sub-Grade (gr/mile)	0.087	0.095	0.914	0.047	0.020	441.584
Emission rate - Paving (grams/mile)	0.087	0.095	0.914	0.047	0.020	441.584
Emission rate - Grubbing/Land Clearing (grams/trip)	0.263	0.131	1.931	0.004	0.004	96.298
Emission rate - Grading/Excavation (grams/trip)	0.263	0.131	1.931	0.004	0.004	96.298
Emission rate - Draining/Utilities/Sub-Grade (gr/trip)	0.263	0.131	1.931	0.004	0.004	96.298
Emission rate - Paving (grams/trip)	0.263	0.131	1.931	0.004	0.004	96.298
Pounds per day - Grubbing/Land Clearing	0.100	0.100	1.001	0.047	0.020	442.466
Tons per const. Period - Grub/Land Clear	0.001	0.001	0.011	0.001	0.000	4.867
Pounds per day - Grading/Excavation	0.210	0.212	2.114	0.098	0.041	934.094
Tons per const. Period - Grading/Excavation	0.009	0.009	0.093	0.004	0.002	41.100
Pounds per day - Drainage/Utilities/Sub-Grade	0.188	0.189	1.892	0.088	0.037	835.769
Tons per const. Period - Drain/Util/Sub-Grade	0.007	0.007	0.073	0.003	0.001	32.177
Pounds per day - Paving	0.155	0.156	1.558	0.072	0.031	688.280
Tons per const. Period - Paving	0.003	0.003	0.026	0.001	0.001	11.357
tons per construction period	0.020	0.020	0.203	0.009	0.004	89.501

Water truck default values can be overriden in cells C91 through C93 and E91 through E93.

Water Truck Emissions	User Override of Default # Water Trucks	Program Estimate of Number of Water Trucks	User Override of Truck Miles Traveled/Day	Default Values Miles Traveled/Day
Grubbing/Land Clearing - Exhaust		1		40
Grading/Excavation - Exhaust		1		40
Drainage/Utilities/Subgrade		1		40

	ROG	NOx	CO	PM10	PM2.5	CO2
Emission rate - Grubbing/Land Clearing (grams/mile)	0.17	1.38	0.78	0.15	0.02	1541.89
Emission rate - Grading/Excavation (grams/mile)	0.17	1.38	0.78	0.15	0.08	1541.89
Emission rate - Draining/Utilities/Sub-Grade (gr/mile)	0.17	1.38	0.78	0.15	0.08	1541.89
Pounds per day - Grubbing/Land Clearing	0.01	0.12	0.07	0.01	0.00	135.85
Tons per const. Period - Grub/Land Clear	0.00	0.00	0.00	0.00	0.00	1.49
Pound per day - Grading/Excavation	0.01	0.12	0.07	0.01	0.01	135.85
Tons per const. Period - Grading/Excavation	0.00	0.01	0.00	0.00	0.00	5.98
Pound per day - Drainage/Utilities/Subgrade	0.01	0.12	0.07	0.01	0.01	135.85
Tons per const. Period - Drainage/Utilities/Subgrade	0.00	0.00	0.00	0.00	0.00	5.23

Fugitive dust default values can be overridden in cells C110 through C112.

Fugitive Dust	User Override of Max Acreage Disturbed/Day	Default Maximum Acreage/Day	PM10 pounds/day	PM10 tons/per period	PM2.5 pounds/day	PM2.5 tons/per period
Fugitive Dust - Grubbing/Land Clearing		5	50.0	0.6	10.4	0.1
Fugitive Dust - Grading/Excavation		5	50.0	2.2	10.4	0.5
Fugitive Dust - Drainage/Utilities/Subgrade		5	50.0	1.9	10.4	0.4

Off-Road Equipment Emissions

Grubbing/Land Clearing Override of Default Number of Vehicles	Default Number of Vehicles *Program-estimate*	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	CO2 pounds/day
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
		Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
		Cranes	0.00	0.00	0.00	0.00	0.00	0.00
	1	Crawler Tractors	0.38	4.45	3.87	0.15	0.14	822.17
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	1	Excavators	0.18	2.79	1.26	0.06	0.06	573.01
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
		Graders	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Pavers	0.00	0.00	0.00	0.00	0.00	0.00
		Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
		Pumps	0.00	0.00	0.00	0.00	0.00	0.00
		Rollers	0.00	0.00	0.00	0.00	0.00	0.00
		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Scrapers	0.00	0.00	0.00	0.00	0.00	0.00
	7	Signal Boards	1.01	8.18	6.91	0.19	0.18	1102.04
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
		Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Grubbing/Land Clearing	pounds per day	1.6	15.4	12.0	0.4	0.4	2497.2
	Grubbing/Land Clearing	tons per phase	0.0	0.2	0.1	0.0	0.0	27.5

Grading/Excavation	Default Number of Vehicles		ROG	CO	NOx	PM10	PM2.5	CO2
Override of Default Number of Vehicles	*Program-estimate*	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
		Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
	0	Cranes	0.00	0.00	0.00	0.00	0.00	0.00
	1	Crawler Tractors	0.38	4.45	3.87	0.15	0.14	822.17
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	3	Excavators	0.54	8.37	3.79	0.19	0.17	1719.02
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
	1	Graders	0.43	3.46	3.49	0.19	0.18	667.04
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Pavers	0.00	0.00	0.00	0.00	0.00	0.00
		Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
		Pumps	0.00	0.00	0.00	0.00	0.00	0.00
	2	Rollers	0.28	3.02	2.87	0.14	0.13	558.93
		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
	1	Rubber Tired Loaders	0.24	3.12	1.84	0.06	0.06	662.82
	2	Scrapers	1.39	14.52	12.60	0.50	0.46	3218.06
	7	Signal Boards	1.01	8.18	6.91	0.19	0.18	1102.04
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
	2	Tractors/Loaders/Backhoes	0.28	3.15	2.68	0.11	0.10	672.25
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Grading/Excavation	pounds per day	4.6	48.3	38.0	1.5	1.4	9422.3
	Grading	tons per phase	0.2	2.1	1.7	0.1	0.1	414.6

Drainage/Utilities/Subgrade Override of Default Number of Vehicles	Default Number of Vehicles *Program-estimate*		ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	CO2 pounds/day
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
	1	Air Compressors	0.32	3.27	2.15	0.10	0.09	507.95
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
		Cranes	0.00	0.00	0.00	0.00	0.00	0.00
		Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Excavators	0.00	0.00	0.00	0.00	0.00	0.00
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
	1	Generator Sets	0.22	2.87	1.94	0.08	0.07	487.07
	1	Graders	0.43	3.46	3.49	0.19	0.18	667.04
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Pavers	0.00	0.00	0.00	0.00	0.00	0.00
		Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	1	Plate Compactors	0.04	0.21	0.25	0.01	0.01	34.45
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
	1	Pumps	0.19	2.37	1.60	0.07	0.06	396.14
		Rollers	0.00	0.00	0.00	0.00	0.00	0.00
	1	Rough Terrain Forklifts	0.10	2.03	1.30	0.04	0.03	372.84
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
	2	Scrapers	1.39	14.52	12.60	0.50	0.46	3218.06
	7	Signal Boards	1.01	8.18	6.91	0.19	0.18	1102.04
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
	2	Tractors/Loaders/Backhoes	0.28	3.15	2.68	0.11	0.10	672.25
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Drainage	pounds per day	4.0	40.1	32.9	1.3	1.2	7457.8
	Drainage	tons per phase	0.2	1.5	1.3	0.0	0.0	287.1

Paving Override of Default Number of Vehicles	Default Number of Vehicles *Program-estimate*	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	CO2 pounds/day
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
		Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
		Cranes	0.00	0.00	0.00	0.00	0.00	0.00
		Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Excavators	0.00	0.00	0.00	0.00	0.00	0.00
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
		Graders	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	1	Pavers	0.17	2.84	1.51	0.07	0.07	481.74
	1	Paving Equipment	0.15	2.69	1.23	0.06	0.06	426.00
		Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
		Pumps	0.00	0.00	0.00	0.00	0.00	0.00
	3	Rollers	0.43	4.53	4.30	0.22	0.20	838.39
		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Scrapers	0.00	0.00	0.00	0.00	0.00	0.00
	7	Signal Boards	1.01	8.18	6.91	0.19	0.18	1102.04
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
	2	Tractors/Loaders/Backhoes	0.28	3.15	2.68	0.11	0.10	672.25
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Paving	pounds per day	2.0	21.4	16.6	0.6	0.6	3520.4
	Paving	tons per phase	0.0	0.4	0.3	0.0	0.0	58.1
Total Emissions all Phases (tons per construction period) =>			0.4	4.2	3.3	0.1	0.1	787.3

Equipment default values for horsepower and hours/day can be overridden in cells C289 through C322 and E289 through E322.

Equipment		Default Values Horsepower		Default Values Hours/day
Aerial Lifts		63		8
Air Compressors		106		8
Bore/Drill Rigs		206		8
Cement and Mortar Mixers		10		8
Concrete/Industrial Saws		64		8
Cranes		226		8
Crawler Tractors		208		8
Crushing/Proc. Equipment		142		8
Excavators		163		8
Forklifts		89		8
Generator Sets		66		8
Graders		175		8
Off-Highway Tractors		123		8
Off-Highway Trucks		400		8
Other Construction Equipment		172		8
Other General Industrial Equipment		88		8
Other Material Handling Equipment		167		8
Pavers		126		8
Paving Equipment		131		8
Plate Compactors		8		8
Pressure Washers		26		8
Pumps		53		8
Rollers		81		8
Rough Terrain Forklifts		100		8
Rubber Tired Dozers		255		8
Rubber Tired Loaders		200		8
Scrapers		362		8
Signal Boards		20		8
Skid Steer Loaders		65		8
Surfacing Equipment		254		8
Sweepers/Scrubbers		64		8
Tractors/Loaders/Backhoes		98		8
Trenchers		81		8
Welders		45		8

0

END OF DATA ENTRY SHEET

Road Construction Emissions Model, Version 7.1.5.1

Emission Estimates for -> Backbone Y13 Project Phases (English Units)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	CO2 (lbs/day)
Grubbing/Land Clearing	1.1	13.0	8.5	20.4	0.4	20.0	4.5	0.3	4.2	2,664.7
Grading/Excavation	4.8	51.0	39.6	21.8	1.8	20.0	5.8	1.6	4.2	10,946.1
Drainage/Utilities/Sub-Grade	2.9	29.9	23.3	21.0	1.0	20.0	5.1	0.9	4.2	6,123.6
Paving	1.4	16.6	11.7	0.5	0.5	-	0.5	0.5	-	3,232.4
Maximum (pounds/day)	4.8	51.0	39.6	21.8	1.8	20.0	5.8	1.6	4.2	10,946.1
Total (tons/construction project)	0.1	1.1	0.9	0.6	0.0	0.6	0.2	0.0	0.1	240.0

Notes: Project Start Year -> 2027
Project Length (months) -> 3
Total Project Area (acres) -> 10
Maximum Area Disturbed/Day (acres) -> 2
Total Soil Imported/Exported (yd^3/day)-> 0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns H and I. Total PM2.5 emissions shown in Column J are the sum of exhaust and fugitive dust emissions shown in columns K and L.

Emission Estimates for -> Backbone Y13 Project Phases (Metric Units)	ROG (kgs/day)	CO (kgs/day)	NOx (kgs/day)	Total PM10 (kgs/day)	Exhaust PM10 (kgs/day)	Fugitive Dust PM10 (kgs/day)	Total PM2.5 (kgs/day)	Exhaust PM2.5 (kgs/day)	Fugitive Dust PM2.5 (kgs/day)	CO2 (kgs/day)
Grubbing/Land Clearing	0.5	5.9	3.9	9.3	0.2	9.1	2.0	0.1	1.9	1,211.2
Grading/Excavation	2.2	23.2	18.0	9.9	0.8	9.1	2.6	0.7	1.9	4,975.5
Drainage/Utilities/Sub-Grade	1.3	13.6	10.6	9.6	0.5	9.1	2.3	0.4	1.9	2,783.4
Paving	0.6	7.5	5.3	0.2	0.2	-	0.2	0.2	-	1,469.3
Maximum (kilograms/day)	2.2	23.2	18.0	9.9	0.8	9.1	2.6	0.7	1.9	4,975.5
Total (megagrams/construction project)	0.1	1.0	0.8	0.5	0.0	0.5	0.1	0.0	0.1	217.7

Notes: Project Start Year -> 2027
Project Length (months) -> 3
Total Project Area (hectares) -> 4
Maximum Area Disturbed/Day (hectares) -> 1
Total Soil Imported/Exported ($meters^3$/day)-> 0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns H and I. Total PM2.5 emissions shown in Column J are the sume of exhaust and fugitive dust emissions shown in columns K and L.

Road Construction Emissions Model

Version 7.1.5.1

Data Entry Worksheet

Note: Required data input sections have a yellow background.
Optional data input sections have a blue background. Only areas with a yellow or blue background can be modified. Program defaults have a white background.
The user is required to enter information in cells C10 through C25.

SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

Input Type			
Project Name	Backbone Y13		
Construction Start Year	2027	Enter a Year between 2009 and 2025 (inclusive)	**WARNING:Start Year must be between 2005 and 2025 inclusive**
Project Type	2	1 New Road Construction 2 Road Widening 3 Bridge/Overpass Construction	
Project Construction Time	3.00	months	
Predominant Soil/Site Type: Enter 1, 2, or 3	1	1. Sand Gravel 2. Weathered Rock-Earth 3. Blasted Rock	
Project Length	0.76	miles	
Total Project Area	10.00	acres	
Maximum Area Disturbed/Day	2.00	acres	
Water Trucks Used?	1	1. Yes 2. No	
Soil Imported	0.00	yd^3/day	
Soil Exported	0.00	yd^3/day	
Average Truck Capacity	20	yd^3 (assume 20 if unknown)	

To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.

The remaining sections of this sheet contain areas that can be modified by the user, although those modifications are optional.

Note: The program's estimates of construction period phase length can be overridden in cells C34 through C37.

Construction Periods	User Override of Construction Months	Program Calculated Months	2005	%	2006	%	2007	%
Grubbing/Land Clearing		0.30	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation		1.20	0.00	0.00	0.00	0.00	0.00	0.00
Drainage/Utilities/Sub-Grade		1.05	0.00	0.00	0.00	0.00	0.00	0.00
Paving		0.45	0.00	0.00	0.00	0.00	0.00	0.00
Totals	0.00	3.00						

NOTE: soil hauling emissions are included in the Grading/Excavation Construction Period Phase, therefore the Construction Period for Grading/Excavation cannot be zero if hauling is part of the project.

Hauling emission default values can be overridden in cells C45 through C46.

Soil Hauling Emissions

User Input	User Override of Soil Hauling Defaults	Default Values
Miles/round trip		30
Round trips/day		0
Vehicle miles traveled/day (calculated)		0

Hauling Emissions	ROG	NOx	CO	PM10	PM2.5	CO2
Emission rate (grams/mile)	0.17	1.38	0.78	0.15	0.08	1541.89
Emission rate (grams/trip)	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day	0.00	0.00	0.00	0.00	0.00	0.00
Tons per contruction period	0.00	0.00	0.00	0.00	0.00	0.00

Worker commute default values can be overridden in cells C60 through C65.

Worker Commute Emissions

	User Override of Worker Commute Default Values	Default Values
Miles/ one-way trip		20
One-way trips/day		2
No. of employees: Grubbing/Land Clearing		6
No. of employees: Grading/Excavation		21
No. of employees: Drainage/Utilities/Sub-Grade		15
No. of employees: Paving		11

	ROG	NOx	CO	PM10	PM2.5	CO2
Emission rate - Grubbing/Land Clearing (grams/mile)	0.087	0.095	0.914	0.047	0.020	441.584
Emission rate - Grading/Excavation (grams/mile)	0.087	0.095	0.914	0.047	0.020	441.584
Emission rate - Draining/Utilities/Sub-Grade (gr/mile)	0.087	0.095	0.914	0.047	0.020	441.584
Emission rate - Paving (grams/mile)	0.087	0.095	0.914	0.047	0.020	441.584
Emission rate - Grubbing/Land Clearing (grams/trip)	0.263	0.131	1.931	0.004	0.004	96.298
Emission rate - Grading/Excavation (grams/trip)	0.263	0.131	1.931	0.004	0.004	96.298
Emission rate - Draining/Utilities/Sub-Grade (gr/trip)	0.263	0.131	1.931	0.004	0.004	96.298
Emission rate - Paving (grams/trip)	0.263	0.131	1.931	0.004	0.004	96.298
Pounds per day - Grubbing/Land Clearing	0.055	0.056	0.556	0.026	0.011	245.814
Tons per const. Period - Grub/Land Clear	0.000	0.000	0.002	0.000	0.000	0.811
Pounds per day - Grading/Excavation	0.188	0.189	1.892	0.088	0.037	835.769
Tons per const. Period - Grading/Excavation	0.002	0.003	0.025	0.001	0.000	11.032
Pounds per day - Drainage/Utilities/Sub-Grade	0.133	0.134	1.335	0.062	0.026	589.954
Tons per const. Period - Drain/Util/Sub-Grade	0.002	0.002	0.015	0.001	0.000	6.814
Pounds per day - Paving	0.100	0.100	1.001	0.047	0.020	442.466
Tons per const. Period - Paving	0.000	0.000	0.005	0.000	0.000	2.190
tons per construction period	0.005	0.005	0.047	0.002	0.001	20.848

Water truck default values can be overriden in cells C91 through C93 and E91 through E93.

Water Truck Emissions	User Override of Default # Water Trucks	Program Estimate of Number of Water Trucks	User Override of Truck Miles Traveled/Day	Default Values Miles Traveled/Day
Grubbing/Land Clearing - Exhaust		1		40
Grading/Excavation - Exhaust		1		40
Drainage/Utilities/Subgrade		1		40

	ROG	NOx	CO	PM10	PM2.5	CO2
Emission rate - Grubbing/Land Clearing (grams/mile)	0.17	1.38	0.78	0.15	0.02	1541.89
Emission rate - Grading/Excavation (grams/mile)	0.17	1.38	0.78	0.15	0.08	1541.89
Emission rate - Draining/Utilities/Sub-Grade (gr/mile)	0.17	1.38	0.78	0.15	0.08	1541.89
Pounds per day - Grubbing/Land Clearing	0.01	0.12	0.07	0.01	0.00	135.85
Tons per const. Period - Grub/Land Clear	0.00	0.00	0.00	0.00	0.00	0.45
Pound per day - Grading/Excavation	0.01	0.12	0.07	0.01	0.01	135.85
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	1.79
Pound per day - Drainage/Utilities/Subgrade	0.01	0.12	0.07	0.01	0.01	135.85
Tons per const. Period - Drainage/Utilities/Subgrade	0.00	0.00	0.00	0.00	0.00	1.57

Fugitive dust default values can be overridden in cells C110 through C112.

Fugitive Dust	User Override of Max Acreage Disturbed/Day	Default Maximum Acreage/Day	PM10 pounds/day	PM10 tons/per period	PM2.5 pounds/day	PM2.5 tons/per period
Fugitive Dust - Grubbing/Land Clearing		2	20.0	0.1	4.2	0.0
Fugitive Dust - Grading/Excavation		2	20.0	0.3	4.2	0.1
Fugitive Dust - Drainage/Utilities/Subgrade		2	20.0	0.2	4.2	0.0

Off-Road Equipment Emissions

Grubbing/Land Clearing Override of Default Number of Vehicles	Default Number of Vehicles *Program-estimate*	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	CO2 pounds/day
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
		Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
		Cranes	0.00	0.00	0.00	0.00	0.00	0.00
	1	Crawler Tractors	0.38	4.45	3.87	0.15	0.14	822.17
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	2	Excavators	0.36	5.58	2.53	0.12	0.11	1146.01
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
		Graders	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Pavers	0.00	0.00	0.00	0.00	0.00	0.00
		Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
		Pumps	0.00	0.00	0.00	0.00	0.00	0.00
		Rollers	0.00	0.00	0.00	0.00	0.00	0.00
		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Scrapers	0.00	0.00	0.00	0.00	0.00	0.00
	2	Signal Boards	0.29	2.34	1.97	0.05	0.05	314.87
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
		Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Grubbing/Land Clearing	pounds per day	1.0	12.4	8.4	0.3	0.3	2283.1
	Grubbing/Land Clearing	tons per phase	0.0	0.0	0.0	0.0	0.0	7.5

Grading/Excavation	Default Number of Vehicles		ROG	CO	NOx	PM10	PM2.5	CO2
Override of Default Number of Vehicles	*Program-estimate*	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
		Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
	0	Cranes	0.00	0.00	0.00	0.00	0.00	0.00
	1	Crawler Tractors	0.38	4.45	3.87	0.15	0.14	822.17
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	3	Excavators	0.54	8.37	3.79	0.19	0.17	1719.02
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
	2	Graders	0.87	6.92	6.98	0.38	0.35	1334.08
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Pavers	0.00	0.00	0.00	0.00	0.00	0.00
		Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
		Pumps	0.00	0.00	0.00	0.00	0.00	0.00
	2	Rollers	0.28	3.02	2.87	0.14	0.13	558.93
		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
	1	Rubber Tired Loaders	0.24	3.12	1.84	0.06	0.06	662.82
	2	Scrapers	1.39	14.52	12.60	0.50	0.46	3218.06
	2	Signal Boards	0.29	2.34	1.97	0.05	0.05	314.87
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
	4	Tractors/Loaders/Backhoes	0.56	6.30	5.36	0.22	0.20	1344.50
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Grading/Excavation	pounds per day	4.5	49.0	39.3	1.7	1.6	9974.5
	Grading	tons per phase	0.1	0.6	0.5	0.0	0.0	131.7

Drainage/Utilities/Subgrade Override of Default Number of Vehicles	Default Number of Vehicles *Program-estimate*		ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	CO2 pounds/day
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
	1	Air Compressors	0.32	3.27	2.15	0.10	0.09	507.95
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
		Cranes	0.00	0.00	0.00	0.00	0.00	0.00
		Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Excavators	0.00	0.00	0.00	0.00	0.00	0.00
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
	1	Generator Sets	0.22	2.87	1.94	0.08	0.07	487.07
	1	Graders	0.43	3.46	3.49	0.19	0.18	667.04
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Pavers	0.00	0.00	0.00	0.00	0.00	0.00
		Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	1	Plate Compactors	0.04	0.21	0.25	0.01	0.01	34.45
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
	1	Pumps	0.19	2.37	1.60	0.07	0.06	396.14
		Rollers	0.00	0.00	0.00	0.00	0.00	0.00
	1	Rough Terrain Forklifts	0.10	2.03	1.30	0.04	0.03	372.84
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
	1	Scrapers	0.70	7.26	6.30	0.25	0.23	1609.03
	2	Signal Boards	0.29	2.34	1.97	0.05	0.05	314.87
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
	3	Tractors/Loaders/Backhoes	0.42	4.72	4.02	0.16	0.15	1008.38
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Drainage	pounds per day	2.7	28.5	23.0	1.0	0.9	5397.8
	Drainage	tons per phase	0.0	0.3	0.3	0.0	0.0	62.3

Paving Override of Default Number of Vehicles	Default Number of Vehicles *Program-estimate*	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	CO2 pounds/day
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
		Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
		Cranes	0.00	0.00	0.00	0.00	0.00	0.00
		Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Excavators	0.00	0.00	0.00	0.00	0.00	0.00
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
		Graders	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	1	Pavers	0.17	2.84	1.51	0.07	0.07	481.74
	1	Paving Equipment	0.15	2.69	1.23	0.06	0.06	426.00
		Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
		Pumps	0.00	0.00	0.00	0.00	0.00	0.00
	2	Rollers	0.28	3.02	2.87	0.14	0.13	558.93
		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Scrapers	0.00	0.00	0.00	0.00	0.00	0.00
	2	Signal Boards	0.29	2.34	1.97	0.05	0.05	314.87
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
	3	Tractors/Loaders/Backhoes	0.42	4.72	4.02	0.16	0.15	1008.38
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Paving	pounds per day	1.3	15.6	11.6	0.5	0.5	2789.9
	Paving	tons per phase	0.0	0.1	0.1	0.0	0.0	13.8
Total Emissions all Phases (tons per construction period) =>			0.1	1.1	0.9	0.0	0.0	215.4

Equipment default values for horsepower and hours/day can be overridden in cells C289 through C322 and E289 through E322.

Equipment		Default Values Horsepower		Default Values Hours/day
Aerial Lifts		63		8
Air Compressors		106		8
Bore/Drill Rigs		206		8
Cement and Mortar Mixers		10		8
Concrete/Industrial Saws		64		8
Cranes		226		8
Crawler Tractors		208		8
Crushing/Proc. Equipment		142		8
Excavators		163		8
Forklifts		89		8
Generator Sets		66		8
Graders		175		8
Off-Highway Tractors		123		8
Off-Highway Trucks		400		8
Other Construction Equipment		172		8
Other General Industrial Equipment		88		8
Other Material Handling Equipment		167		8
Pavers		126		8
Paving Equipment		131		8
Plate Compactors		8		8
Pressure Washers		26		8
Pumps		53		8
Rollers		81		8
Rough Terrain Forklifts		100		8
Rubber Tired Dozers		255		8
Rubber Tired Loaders		200		8
Scrapers		362		8
Signal Boards		20		8
Skid Steer Loaders		65		8
Surfacing Equipment		254		8
Sweepers/Scrubbers		64		8
Tractors/Loaders/Backhoes		98		8
Trenchers		81		8
Welders		45		8

0

END OF DATA ENTRY SHEET

Road Construction Emissions Model, Version 7.1.5.1

Emission Estimates for -> Backbone Y15 Project Phases (English Units)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	CO2 (lbs/day)
Grubbing/Land Clearing	0.8	8.8	6.3	20.3	0.3	20.0	4.4	0.2	4.2	1,836.0
Grading/Excavation	3.9	42.8	32.4	21.4	1.4	20.0	5.5	1.3	4.2	9,252.7
Drainage/Utilities/Sub-Grade	3.3	34.3	27.2	21.2	1.2	20.0	5.2	1.1	4.2	7,189.9
Paving	1.3	15.3	10.8	0.5	0.5	-	0.5	0.5	-	2,969.1
Maximum (pounds/day)	3.9	42.8	32.4	21.4	1.4	20.0	5.5	1.3	4.2	9,252.7
Total (tons/construction project)	0.3	2.8	2.2	1.6	0.1	1.5	0.4	0.1	0.3	602.5

Notes:

Project Start Year ->	2029
Project Length (months) ->	8
Total Project Area (acres) ->	5
Maximum Area Disturbed/Day (acres) ->	2
Total Soil Imported/Exported (yd^3/day)->	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns H and I. Total PM2.5 emissions shown in Column J are the sum of exhaust and fugitive dust emissions shown in columns K and L.

Emission Estimates for -> Backbone Y15 Project Phases (Metric Units)	ROG (kgs/day)	CO (kgs/day)	NOx (kgs/day)	Total PM10 (kgs/day)	Exhaust PM10 (kgs/day)	Fugitive Dust PM10 (kgs/day)	Total PM2.5 (kgs/day)	Exhaust PM2.5 (kgs/day)	Fugitive Dust PM2.5 (kgs/day)	CO2 (kgs/day)
Grubbing/Land Clearing	0.3	4.0	2.9	9.2	0.1	9.1	2.0	0.1	1.9	834.5
Grading/Excavation	1.8	19.4	14.7	9.7	0.7	9.1	2.5	0.6	1.9	4,205.8
Drainage/Utilities/Sub-Grade	1.5	15.6	12.4	9.6	0.5	9.1	2.4	0.5	1.9	3,268.1
Paving	0.6	6.9	4.9	0.2	0.2	-	0.2	0.2	-	1,349.6
Maximum (kilograms/day)	1.8	19.4	14.7	9.7	0.7	9.1	2.5	0.6	1.9	4,205.8
Total (megagrams/construction project)	0.2	2.6	2.0	1.4	0.1	1.4	0.4	0.1	0.3	546.5

Notes:

Project Start Year ->	2029
Project Length (months) ->	8
Total Project Area (hectares) ->	2
Maximum Area Disturbed/Day (hectares) ->	1
Total Soil Imported/Exported ($meters^3$/day)->	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns H and I. Total PM2.5 emissions shown in Column J are the sume of exhaust and fugitive dust emissions shown in columns K and L.

Road Construction Emissions Model

Version 7.1.5.1

Data Entry Worksheet

Note: Required data input sections have a yellow background.
Optional data input sections have a blue background. Only areas with a yellow or blue background can be modified. Program defaults have a white background.
The user is required to enter information in cells C10 through C25.

SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

Input Type

Project Name	Backbone Y15		
Construction Start Year	2029	Enter a Year between 2009 and 2025 (inclusive)	**WARNING:Start Year must be between 2005 and 2025 inclusive**
Project Type	1	1 New Road Construction 2 Road Widening 3 Bridge/Overpass Construction	
Project Construction Time	8.00	months	
Predominant Soil/Site Type: Enter 1, 2, or 3	1	1. Sand Gravel 2. Weathered Rock-Earth 3. Blasted Rock	
Project Length	0.38	miles	
Total Project Area	5.00	acres	
Maximum Area Disturbed/Day	2.00	acres	
Water Trucks Used?	1	1. Yes 2. No	
Soil Imported	0.00	yd^3/day	
Soil Exported	0.00	yd^3/day	
Average Truck Capacity	20	yd^3 (assume 20 if unknown)	

To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.

The remaining sections of this sheet contain areas that can be modified by the user, although those modifications are optional.

Note: The program's estimates of construction period phase length can be overridden in cells C34 through C37.

Construction Periods	User Override of Construction Months	Program Calculated Months	2005	%	2006	%	2007	%
Grubbing/Land Clearing		0.80	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation		3.20	0.00	0.00	0.00	0.00	0.00	0.00
Drainage/Utilities/Sub-Grade		2.80	0.00	0.00	0.00	0.00	0.00	0.00
Paving		1.20	0.00	0.00	0.00	0.00	0.00	0.00
Totals	0.00	8.00						

NOTE: soil hauling emissions are included in the Grading/Excavation Construction Period Phase, therefore the Construction Period for Grading/Excavation cannot be zero if hauling is part of the project.

Hauling emission default values can be overridden in cells C45 through C46.

Soil Hauling Emissions

User Input	User Override of Soil Hauling Defaults	Default Values
Miles/round trip		30
Round trips/day		0
Vehicle miles traveled/day (calculated)		0

Hauling Emissions	ROG	NOx	CO	PM10	PM2.5	CO2
Emission rate (grams/mile)	0.17	1.38	0.78	0.15	0.08	1541.89
Emission rate (grams/trip)	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day	0.00	0.00	0.00	0.00	0.00	0.00
Tons per contruction period	0.00	0.00	0.00	0.00	0.00	0.00

Worker commute default values can be overridden in cells C60 through C65.

Worker Commute Emissions

	User Override of Worker Commute Default Values	Default Values
Miles/ one-way trip		20
One-way trips/day		2
No. of employees: Grubbing/Land Clearing		4
No. of employees: Grading/Excavation		16
No. of employees: Drainage/Utilities/Sub-Grade		14
No. of employees: Paving		10

	ROG	NOx	CO	PM10	PM2.5	CO2
Emission rate - Grubbing/Land Clearing (grams/mile)	0.087	0.095	0.914	0.047	0.020	441.584
Emission rate - Grading/Excavation (grams/mile)	0.087	0.095	0.914	0.047	0.020	441.584
Emission rate - Draining/Utilities/Sub-Grade (gr/mile)	0.087	0.095	0.914	0.047	0.020	441.584
Emission rate - Paving (grams/mile)	0.087	0.095	0.914	0.047	0.020	441.584
Emission rate - Grubbing/Land Clearing (grams/trip)	0.263	0.131	1.931	0.004	0.004	96.298
Emission rate - Grading/Excavation (grams/trip)	0.263	0.131	1.931	0.004	0.004	96.298
Emission rate - Draining/Utilities/Sub-Grade (gr/trip)	0.263	0.131	1.931	0.004	0.004	96.298
Emission rate - Paving (grams/trip)	0.263	0.131	1.931	0.004	0.004	96.298
Pounds per day - Grubbing/Land Clearing	0.033	0.033	0.334	0.016	0.007	147.489
Tons per const. Period - Grub/Land Clear	0.000	0.000	0.003	0.000	0.000	1.298
Pounds per day - Grading/Excavation	0.144	0.145	1.447	0.067	0.028	639.117
Tons per const. Period - Grading/Excavation	0.005	0.005	0.051	0.002	0.001	22.497
Pounds per day - Drainage/Utilities/Sub-Grade	0.122	0.123	1.224	0.057	0.024	540.791
Tons per const. Period - Drain/Util/Sub-Grade	0.004	0.004	0.038	0.002	0.001	16.656
Pounds per day - Paving	0.089	0.089	0.890	0.041	0.017	393.303
Tons per const. Period - Paving	0.001	0.001	0.012	0.001	0.000	5.192
tons per construction period	0.010	0.010	0.103	0.005	0.002	45.643

Water truck default values can be overriden in cells C91 through C93 and E91 through E93.

Water Truck Emissions	User Override of Default # Water Trucks	Program Estimate of Number of Water Trucks	User Override of Truck Miles Traveled/Day	Default Values Miles Traveled/Day
Grubbing/Land Clearing - Exhaust		1		40
Grading/Excavation - Exhaust		1		40
Drainage/Utilities/Subgrade		1		40

	ROG	NOx	CO	PM10	PM2.5	CO2
Emission rate - Grubbing/Land Clearing (grams/mile)	0.17	1.38	0.78	0.15	0.02	1541.89
Emission rate - Grading/Excavation (grams/mile)	0.17	1.38	0.78	0.15	0.08	1541.89
Emission rate - Draining/Utilities/Sub-Grade (gr/mile)	0.17	1.38	0.78	0.15	0.08	1541.89
Pounds per day - Grubbing/Land Clearing	0.01	0.12	0.07	0.01	0.00	135.85
Tons per const. Period - Grub/Land Clear	0.00	0.00	0.00	0.00	0.00	1.20
Pound per day - Grading/Excavation	0.01	0.12	0.07	0.01	0.01	135.85
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	4.78
Pound per day - Drainage/Utilities/Subgrade	0.01	0.12	0.07	0.01	0.01	135.85
Tons per const. Period - Drainage/Utilities/Subgrade	0.00	0.00	0.00	0.00	0.00	4.18

Fugitive dust default values can be overridden in cells C110 through C112.

Fugitive Dust	User Override of Max Acreage Disturbed/Day	Default Maximum Acreage/Day	PM10 pounds/day	PM10 tons/per period	PM2.5 pounds/day	PM2.5 tons/per period
Fugitive Dust - Grubbing/Land Clearing		2	20.0	0.2	4.2	0.0
Fugitive Dust - Grading/Excavation		2	20.0	0.7	4.2	0.1
Fugitive Dust - Drainage/Utilities/Subgrade		2	20.0	0.6	4.2	0.1

Off-Road Equipment Emissions

Grubbing/Land Clearing Override of Default Number of Vehicles	Default Number of Vehicles *Program-estimate*	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	CO2 pounds/day
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
		Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
		Cranes	0.00	0.00	0.00	0.00	0.00	0.00
	1	Crawler Tractors	0.38	4.45	3.87	0.15	0.14	822.17
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	1	Excavators	0.18	2.79	1.26	0.06	0.06	573.01
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
		Graders	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Pavers	0.00	0.00	0.00	0.00	0.00	0.00
		Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
		Pumps	0.00	0.00	0.00	0.00	0.00	0.00
		Rollers	0.00	0.00	0.00	0.00	0.00	0.00
		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Scrapers	0.00	0.00	0.00	0.00	0.00	0.00
	1	Signal Boards	0.14	1.17	0.99	0.03	0.03	157.43
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
		Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Grubbing/Land Clearing	pounds per day	0.7	8.4	6.1	0.2	0.2	1552.6
	Grubbing/Land Clearing	tons per phase	0.0	0.1	0.1	0.0	0.0	13.7

Grading/Excavation	Default Number of Vehicles		ROG	CO	NOx	PM10	PM2.5	CO2
Override of Default Number of Vehicles	*Program-estimate*	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
		Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
	0	Cranes	0.00	0.00	0.00	0.00	0.00	0.00
	1	Crawler Tractors	0.38	4.45	3.87	0.15	0.14	822.17
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	3	Excavators	0.54	8.37	3.79	0.19	0.17	1719.02
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
	1	Graders	0.43	3.46	3.49	0.19	0.18	667.04
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Pavers	0.00	0.00	0.00	0.00	0.00	0.00
		Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
		Pumps	0.00	0.00	0.00	0.00	0.00	0.00
	2	Rollers	0.28	3.02	2.87	0.14	0.13	558.93
		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
	1	Rubber Tired Loaders	0.24	3.12	1.84	0.06	0.06	662.82
	2	Scrapers	1.39	14.52	12.60	0.50	0.46	3218.06
	1	Signal Boards	0.14	1.17	0.99	0.03	0.03	157.43
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
	2	Tractors/Loaders/Backhoes	0.28	3.15	2.68	0.11	0.10	672.25
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Grading/Excavation	pounds per day	3.7	41.3	32.1	1.4	1.3	8477.7
	Grading	tons per phase	0.1	1.5	1.1	0.0	0.0	298.4

Drainage/Utilities/Subgrade Override of Default Number of Vehicles	Default Number of Vehicles *Program-estimate*		ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	CO2 pounds/day
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
	1	Air Compressors	0.32	3.27	2.15	0.10	0.09	507.95
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
		Cranes	0.00	0.00	0.00	0.00	0.00	0.00
		Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Excavators	0.00	0.00	0.00	0.00	0.00	0.00
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
	1	Generator Sets	0.22	2.87	1.94	0.08	0.07	487.07
	1	Graders	0.43	3.46	3.49	0.19	0.18	667.04
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Pavers	0.00	0.00	0.00	0.00	0.00	0.00
		Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	1	Plate Compactors	0.04	0.21	0.25	0.01	0.01	34.45
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
	1	Pumps	0.19	2.37	1.60	0.07	0.06	396.14
		Rollers	0.00	0.00	0.00	0.00	0.00	0.00
	1	Rough Terrain Forklifts	0.10	2.03	1.30	0.04	0.03	372.84
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
	2	Scrapers	1.39	14.52	12.60	0.50	0.46	3218.06
	1	Signal Boards	0.14	1.17	0.99	0.03	0.03	157.43
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
	2	Tractors/Loaders/Backhoes	0.28	3.15	2.68	0.11	0.10	672.25
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Drainage	pounds per day	3.1	33.0	27.0	1.1	1.0	6513.2
	Drainage	tons per phase	0.1	1.0	0.8	0.0	0.0	200.6

Paving Override of Default Number of Vehicles	Default Number of Vehicles *Program-estimate*	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	CO2 pounds/day
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
		Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
		Cranes	0.00	0.00	0.00	0.00	0.00	0.00
		Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Excavators	0.00	0.00	0.00	0.00	0.00	0.00
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
		Graders	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	1	Pavers	0.17	2.84	1.51	0.07	0.07	481.74
	1	Paving Equipment	0.15	2.69	1.23	0.06	0.06	426.00
		Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
		Pumps	0.00	0.00	0.00	0.00	0.00	0.00
	3	Rollers	0.43	4.53	4.30	0.22	0.20	838.39
		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Scrapers	0.00	0.00	0.00	0.00	0.00	0.00
	1	Signal Boards	0.14	1.17	0.99	0.03	0.03	157.43
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
	2	Tractors/Loaders/Backhoes	0.28	3.15	2.68	0.11	0.10	672.25
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Paving	pounds per day	1.2	14.4	10.7	0.5	0.4	2575.8
	Paving	tons per phase	0.0	0.2	0.1	0.0	0.0	34.0
Total Emissions all Phases (tons per construction period) =>			0.2	2.7	2.2	0.1	0.1	546.7

Equipment default values for horsepower and hours/day can be overridden in cells C289 through C322 and E289 through E322.

Equipment		Default Values Horsepower		Default Values Hours/day
Aerial Lifts		63		8
Air Compressors		106		8
Bore/Drill Rigs		206		8
Cement and Mortar Mixers		10		8
Concrete/Industrial Saws		64		8
Cranes		226		8
Crawler Tractors		208		8
Crushing/Proc. Equipment		142		8
Excavators		163		8
Forklifts		89		8
Generator Sets		66		8
Graders		175		8
Off-Highway Tractors		123		8
Off-Highway Trucks		400		8
Other Construction Equipment		172		8
Other General Industrial Equipment		88		8
Other Material Handling Equipment		167		8
Pavers		126		8
Paving Equipment		131		8
Plate Compactors		8		8
Pressure Washers		26		8
Pumps		53		8
Rollers		81		8
Rough Terrain Forklifts		100		8
Rubber Tired Dozers		255		8
Rubber Tired Loaders		200		8
Scrapers		362		8
Signal Boards		20		8
Skid Steer Loaders		65		8
Surfacing Equipment		254		8
Sweepers/Scrubbers		64		8
Tractors/Loaders/Backhoes		98		8
Trenchers		81		8
Welders		45		8

0

END OF DATA ENTRY SHEET

APPENDIX B

Biological Resources Report

4.3 BIOLOGICAL RESOURCES

4.3.1 INTRODUCTION

The Biological Resources chapter of the Draft EIR evaluates the biological resources that occur in the Folsom Specific Plan Backbone Infrastructure project area. The backbone infrastructure is part of the Folsom Specific Plan Area (SPA). The backbone infrastructure project area (project area) is 868.04 acres, of which 167.88 acres are considered off-site (i.e. off-site refers to areas outside of the SPA boundary). Existing plant communities, wetlands, wildlife habitats, and potential for special-status species and communities are discussed for the backbone infrastructure project area. The information contained in this analysis is primarily based on the *2010 Volume I, Draft EIR/EIS, South of U.S. 50 Specific Plan Project*.

4.3.2 EXISTING ENVIRONMENTAL SETTING

The following sections describe the existing environmental setting and biological resources occurring, or potentially occurring, in the proposed project area.

Regional Setting

The project area is located in the eastern portion of Sacramento County, in the City of Folsom, California. The City of Folsom is in the Sierra Nevada foothills, at the eastern edge of the alluvial Sacramento Valley. The Sierra Nevada province is characterized by steep-sided hills and narrow, rocky stream channels. The Sacramento Valley is characterized by flat alluvial plains. Climate in the Folsom area is characterized by warm, dry summers with no rain and mild winters with light rain.

Project Setting

The project area is characterized by rolling foothill topography. Elevations within the project area range from approximately 240 feet to 800 feet above mean sea level. Historic land uses in the area include cattle ranching, farming, and mining activities, primarily gold mining. The project area is predominantly characterized by annual grassland on gently sloping topography. In addition, blue oak woodland, seasonal wetland, freshwater seeps, swales, marshes, ponds, riparian woodland and scrub, and intermittent and perennial drainages (Alder Creek) are also present within the project area.

<u>Vegetation</u>

The project area is characterized by annual grassland and blue oak woodland. In addition, a mosaic of vernal pools and swales, and seasonal wetlands interspersed within a matrix of annual grassland vegetation. Plant communities found within the project area are described below.

Annual Grassland

Annual grassland covers the majority of the project area and is characterized by a dense cover of nonnative annual grasses interspersed with numerous species of nonnative annual forbs and native wildflowers. Characteristic grass species include ripgut brome (*Bromus diandrus*), soft chess (*Bromus hordeaceus*), ryegrass (*Festuca perennis*), and medusahead (*Elymus caput-medusae*). Common nonnative forbs include cut-leaved geranium (*Geranium dissectum*), Klamath weed (*Hypericum perforatum*), prickly sow thistle (*Sonchus asper*), yellow starthistle (*Centaurea solstitialis*), and Italian thistle (*Carduus pycnocephalus*). Native wildflowers observed in the annual grassland within the project site include wild hyacinth (*Triteleia hyacinthina*), Ithuriel's spear (*Triteleia laxa*), purple owl's-clover (*Castilleja exserta*), valley tassels (*Castilleja attenuata*), harvest brodiaea (*Brodiaea elegans*), and Fremont's tidy-tips (*Layia fremontii*).

Valley Needlegrass Grassland

Small inclusions of valley needlegrass grassland may be present within the project area, interspersed within the annual grassland community described above. Valley needlegrass grassland is characterized by purple needlegrass (*Stipa pulchra*), a native perennial bunchgrass. Associate species are primarily native and nonnative annual forbs, including blowwives (*Achyrachaena mollis*), purple clarkia (*Clarkia purpurea ssp. quadrivulnera*), California poppy (*Eschscholzia californica*), hayfield tarweed (*Hemizonia congesta ssp. luzulifolia*), valley tassels (*Castilleja attenuata*), and species characteristic of the annual grassland community. This community type has not been mapped and quantified within the project area, but has been observed on several of the properties within the SPA and may be present within the project area.

Blue Oak Woodland

As defined by the California Oak Woodlands Conservation Act of 2001, oak woodlands are stands of oak trees with greater than 10% canopy cover. Approximately 102.78 acres of blue oak woodland is present within the on-site elements of the project area. Blue oak woodland within the off-site elements has not been quantified; however, blue oak woodland could occur within the off-site areas. Blue oak woodland is a broadleaved deciduous woodland plant community with a grassy understory. The tree layer is dominated by blue oak (*Quercus douglasii*) while the understory is dominated by grasses and other herbaceous species similar to those found in the annual grassland community.

Freshwater Seeps

A seep is a wetland plant community characterized by dense cover of perennial herb species usually dominated by rushes, sedges, and grasses. Freshwater seep communities occur on sites with permanently moist or wet soils resulting from daylighting groundwater. Characteristic plant species found in seeps within the project area include Baltic rush (*Juncus balticus*), iris-leaved rush (*Juncus xiphioides*), common spikerush (*Eleocharis macrostachya*), white hedge-nettle (*Stachys albens*), rice cutgrass (*Leersia oryzoides*), and dense-flowered willowherb (*Epilobium densiflorum*). There is approximately 0.618 acre of seeps within the project area, of which 0.516 acre is onsite and 0.102 acre is off-site. All acreage of the seep habitat on-site has been determined to fall under USACE jurisdiction. Acreage of seep habitat in the off-site elements is

assessment level only and likely subject to USACE jurisdiction; however, a formal wetland delineation has not been completed and verified by USACE for the off-site elements.

Vernal Pools

Vernal pools are natural ephemeral wetlands that form in shallow depressions underlain by an impervious or restrictive soil layer near the surface that restricts the percolation of water. Vernal pools are supported by direct precipitation and surface runoff. They pond during the wet season and typically become dry by late spring. Vernal pools are typically characterized by a high percentage of native plant species, many of which may be endemic (restricted) to vernal pools. Many of the vernal pools located on the northeastern portion of the project area appear to have been created by human activities, probably from mining test holes.

Characteristic vernal pool species within the project area include annual hairgrass (*Deschampsia danthonioides*), Fremont's goldfields (*Lasthenia fremontii*), common spikerush, coyote thistle (*Eryngium vaseyi*), stipitate popcorn flower (*Plagiobothrys stipitatus*), white-headed navarretia (*Navarretia leucocephala*), and horned downingia (*Downingia bicornuta*). There are approximately 1.050 acres of vernal pools within the project area, of which 0.734 acre is on-site and 0.316 acre is off-site. All acreage of the vernal pool habitat on-site has been determined to fall under USACE jurisdiction. Acreage of vernal pool habitat in the off-site elements is assessment level only and likely subject to USACE jurisdiction; however, a formal wetland delineation has not been completed and verified by USACE for the off-site elements.

Seasonal Wetlands

Seasonal wetlands are present within the project area in both topographic depressions and swales. Hydrologically, seasonal wetlands are similar to vernal pools because they remain inundated or saturated for extended periods during winter and spring. Seasonal wetland swales do not pond water appreciably, but are inundated by flowing water during rainfall and support a saturated upper soil horizon for an extended period of time during the growing season. Characteristic plant species in seasonal wetlands and seasonal wetland swales within the project area include coyote thistle, toad rush (*Juncus bufonius*), hyssop loosestrife (*Lythrum hyssopifolium*), foothill meadowfoam (*Limnanthes striata*), dallis grass (*Paspalum dilatatum*), rabbitsfoot grass (*Polypogon monspeliensis*), common spikerush, and ryegrass. There are approximately 1.265 acres of depressional seasonal wetlands within the project area, of which 1.199 acres are on-site and 0.066 acre is off-site. In addition, there are 6.932 acres of seasonal wetland swales within the project area, of which 6.853 acres are on-site and 0.079 acre is offsite. All acres of the depressional seasonal wetlands and seasonal wetland swales within the on-site portion of the project area have been determined to fall under USA CE jurisdiction. Acreage of depressional seasonal wetland and seasonal wetland swale habitat in the off-site elements is assessment level only and likely subject to USACE jurisdiction; however, a formal wetland delineation has not been completed and verified by USACE for the off-site elements.

Drainage Channels

Drainage channels occur throughout the project area. These include intermittent to nearly permanent stream channels. Alder Creek is an intermittent to perennial stream that transects the SPA from the south-central portion at White Rock Road to the northwest corner at Prairie City Road, flowing generally in a northwesterly direction. Portions of Alder Creek support surface

flow all year because flows are supplemented by runoff from adjacent developed areas, but upstream segments of the creek within the project area are intermittent. Intermittent stream channels support flowing water through winter and spring, but dry up by summer. Many of the other intermittent channels present within the project area are tributary to Alder Creek. There are 1.780 acres of perennial stream channel within the project area, of which 1.345 acres are on-site and 0.435 acre is off-site. In addition, there are 1.788 acres of intermittent drainage channel within the project area, of which 1.744 acres are on-site and 0.044 acre is off-site. All on-site acreages of perennial stream channel and intermittent drainage channel have been determined to be fall under USACE jurisdiction. Acreage of perennial stream channel and intermittent drainage habitat in the off-site elements is assessment level only, and is likely subject to USACE jurisdiction; however, a formal wetland delineation has not been completed and verified by USACE for the off-site elements.

Hydrophytic plant species (i.e., plants adapted to grow in water), such as cattail (*Typha* sp.), dense sedge (*Carex densa*), slender rush (*Juncus tenuis*), hardstem bulrush (*Schoenoplectus acutus*), and dallisgrass, occur within the Ordinary High Water Mark (OHWM) of the drainage channels within the project area. Vegetation cover becomes denser in flatter portions of the drainages where the channels are wide and relatively shallow. Riparian vegetation occurs within the OHWM and along the banks of Alder Creek. Much of the riparian habitat is characterized by dense monocultures of Himalayan blackberry (*Rubus armeniacus*) and would best be described as blackberry scrub. There are scattered patches of riparian woodland that include typical riparian species such as black willow (*Salix goodingii*), arroyo willow (*Salix lasiolepis*), purpletop vervain (*Verbena bonariensis*), and tall flatsedge (*Cyperus eragrostis*). Riparian habitat within the project area has not been quantified.

Ditches are also present throughout the project area. Ditches are excavated channels surrounded by levees. Many of these features follow topographic contours and may represent relics from historic hydraulic gold mining activities, while others may have been excavated to transport irrigation water. Some ditches within the project area support hydrophytic vegetation such as rabbitsfoot grass, curly dock (*Rumex crispus*), and common yellow monkeyflower (*Mimulus guttatus*). Approximately 0.551 acre of ditches is present throughout the project area, of which 0.476 acre is on-site and 0.007 acre is off-site. Of the 0.476 acre of on-site ditches, 0.432 acre has been determined to fall under USACE jurisdiction, and 0.051 acre has been determined to be non-jurisdictional, although these waters are still considered waters of the state. Acreage of drainage ditch habitat in the off-site elements is assessment level only and is likely subject to USACE jurisdiction; however, a formal wetland delineation has not been completed and verified by USACE for the off-site elements.

Freshwater Marsh

Freshwater marsh is an emergent wetland plant community occurring in areas that are permanently or nearly permanently inundated. In the project area, this community type was found in association with a few of the drainage channels described above. Dominant plant species identified in the freshwater marsh include cattail and common tule (*Scirpus acutus*). Approximately 1.459 acres of freshwater marsh occur within the project area, of which 0.007 acre is on-site and 1.452 acres are off-site. All of the freshwater acreage present within the on-site elements has been determined to fall under USACE jurisdiction. Acreage of freshwater

marsh habitat in the off-site elements is assessment level only and is likely subject to USACE jurisdiction; however, a formal wetland delineation has not been completed and verified by USACE for the off-site elements.

Ponds

Approximately 0.971 acre of ponds, all onsite, is present throughout the project area, of which 0.852 acre has been determined to fall under USACE jurisdiction. The remaining 0.119 acre has been determined to be non-jurisdictional, although these waters are still considered waters of the state. These include ponds created through impoundment of stream channels and excavated basins. The ponds are typically inundated year round and some support sparse cover of emergent vegetation along the shallow margins, and black willow and Fremont cottonwood (*Populus fremontii*) on their banks. In contrast to seasonal wetlands, seeps, and marshes, ponds are characterized predominantly by open water or bare ground and are not vegetated wetlands. No ponds have been observed in the off-site elements; however, this data is assessment level only and a formal wetland delineation has not been completed and verified by USACE for the off-site elements.

Wildlife

The project area supports an abundant and diverse fauna. This large and mostly contiguous block of open space, dominated by natural plant communities, is particularly important to native wildlife species associated with grassland, oak woodland, and riparian habitats. The project area provides habitat for both resident breeding and migratory raptors that prefer large tracks of open grassland for foraging. The oak woodland and riparian communities are attractive to many of the common wildlife species in Sacramento County, as well as a few special-status wildlife species, which are discussed separately below.

A few of the many common wildlife species expected to occur within the project area include red-tailed hawk (*Buteo jamaicensis*), western kingbird (*Tyrannus verticalis*), oak titmouse (*Baeolophus inornatus*), savannah sparrow (*Passerculus sandwichensis*), western meadowlark (*Sturnella neglecta*), gopher snake (*Pituophis catenifer*), western fence lizard (*Sceloporus occidentalis*), coyote (*Canis latrans*), and black-tailed hare (*Lepus californicus*).

Special-Status Species

Special-status species include plants and animals in the following categories:

- species officially listed by the State of California or the Federal government as endangered, threatened, or rare;
- candidates for state or Federal listing as endangered, threatened, or rare;
- taxa (i.e., taxonomic categories or groups) that meet the criteria for listing, even if not currently included on any list, as described in California Code of Regulations (CCR) Section 15380 of the State CEQA Guidelines;
- species identified by the California Department of Fish and Wildlife (CDFW) as species of special concern;
- species listed as Fully Protected under the California Fish and Game Code;
- species afforded protection under local or regional planning documents; and

- taxa considered by the California Native Plant Society (CNPS) to be "rare, threatened, or endangered in California." The CNPS includes five ranks [California Rare Plant Ranks (CRPR)] for categorizing plant species of concern, which are summarized as follows:
  - CRPR 1A—Plants presumed to be extinct in California;
  - CRPR 1B—Plants that are rare, threatened, or endangered in California and elsewhere;
  - CRPR 2A— Plants presumed to be extinct in California, but more common elsewhere.
  - CRPR 2B—Plants that are rare, threatened, or endangered in California but more common elsewhere;
  - CRPR 3—Plants about which more information is needed (a review list); and
  - CRPR 4—Plants of limited distribution (a watch list).

Plant inventories prepared by CNPS provide one source of substantial evidence that is used by lead agencies to determine what plants meet the definition of endangered, rare, or threatened species, as described in CCR Section 15380 of the State CEQA Guidelines. For purposes of this document, the relevant inventories are CRPR 1A, 1B, 2A, and 2B. All plants listed in the CNPS Inventory (CNPS 2014) are considered "special plants" by CDFW. The term "special plants" is a broad term used by CDFW to refer to all of the plant taxa inventoried by the California Natural Diversity Database (CNDDB), regardless of their legal or protection status. Notation as a CRPR 1B or 2 plant species does not automatically qualify the species as endangered, rare, or threatened within the definition of State CEQA Guidelines CCR Section 15380. Rather, CNPS designations are considered along with other available information about the status, threats, and population condition of plant species to determine whether a species warrants evaluation as an endangered, rare, or threatened species under CEQA. Plants on CRPR 1A, 1B, 2A and 2B of the CNPS Inventory may qualify for listing, and CDFW recommends—and local governments may require—that these species be addressed during CEQA review of proposed projects. However, a plant species need not be in the CNPS Inventory to be considered a rare, threatened, or endangered species under CEQA.

The term California species of special concern is applied by CDFW to animals not listed under the Federal ESA or the CESA, but that are nonetheless declining at a rate that could result in listing, or historically occurred in low numbers and known threats to their persistence currently exist. CDFW's fully protected status was California's first attempt to identify and protect animals that were rare or facing extinction. Most species listed as fully protected were eventually listed as threatened or endangered under CESA, however some species remain listed as fully protected but do not have simultaneous listing under CESA. Fully protected species may not be taken or possessed at any time and no take permits can be issued for these species except for scientific research purposes or for relocation to protect livestock.

Table 1 below provides a list of special-status species known to occur or with potential to occur within the project area. These lists were developed through review of biological studies previously conducted within the project area and in the vicinity, on inventory lists available from the CNDDB (2014) and CNPS Inventory (2014) for the Folsom, Folsom SE, Clarksville, and

Buffalo Creek U.S. Geological Survey (USGS) quadrangles, and on the list of potentially occurring special-status species prepared for the *2010 Volume I, Draft EIR/EIS, South of U.S. 50 Specific Plan Project*. Species may have been added or removed from the original 2010 Volume Draft EIR/EIS based on listing status changes and/or new species information. Figure 4.3-1 shows all of the CNDDB occurrences within a five-mile radius of the project area.

Listed and Special-Status Plants

Based on the habitat and elevation range of the project area, it was determined that 12 special status plants have at least some potential to be present within the project area (Table 1). Focused surveys for special-status plant species have been conducted on all properties within the SPA except for Javanifard and Zarghami and Folsom Heights properties, which included all on-site elements of the project area. In addition, all of the off-site elements have been surveyed for special-status plants with the exception of three areas: two north of U.S. Highway 50 and one area just north of the Prairie City Road and White Rock Road intersection in the southwestern corner of the project area. No special-status plant species were found during any of the focused on-site or off-site surveys. There is low potential for special-status plant species to occur in the remaining properties and three off-site elements.

Listed and Special-Status Wildlife

Several special-status wildlife species have potential to occur within the Project area (Table 1). These include four special-status invertebrates, three special-status amphibians, two special-status reptiles, 13 special-status birds, and six special-status mammals.

No special-status fish species are known or have potential to occur within the Alder Creek watershed. Anadromous Chinook salmon (*Oncorhynchus tshawytscha*) and steelhead (*Oncorhynchus mykiss*) use the lower American River below Nimbus Dam for spawning and rearing. Both of these species may have historically used Alder Creek prior to the construction of Nimbus Dam; however, the natural pre-development flow patterns that were more ephemeral and intermittent likely limited habitat values for these species.

Sensitive Natural Communities

Sensitive Natural Communities include those that are of special concern to CDFW, or that are afforded specific consideration through CEQA, Section 1602 of the California Fish and Game Code, the Porter-Cologne Water Quality Act, and/or Section 404 of the CWA. Sensitive Natural Communities may be of special concern to these agencies and to conservation organizations for a variety of reasons, including their locally or regionally declining status, or because they provide important habitat to common and special-status species. Many of these communities are tracked in the CNDDB.

Natural communities present within the project area that would be considered sensitive by regulatory agencies include vernal pools, seasonal wetland swales, seasonal wetlands, freshwater marsh, seeps, riparian habitats, valley needlegrass grassland, and blue oak woodland.

Wetlands and Other Waters of the U.S.

Wetland delineations for all of the properties within the SPA have been conducted by ECORP, EDAW/AECOM (now AECOM), Foothill Associates, and Gibson and Skordal between June 2005 and May 2007. These delineations covered the on-site elements of project area and all of the wetland delineations have been verified by the USACE. The delineations identified a total of 13.675 acres of waters of the U.S., including wetlands, within the on-site elements of the project area. Waters of the U.S. delineated consist of 0.516 acre of seeps, 0.734 acre of vernal pools, 1.199 acres of seasonal wetlands, 6.853 acres of seasonal wetland swales, 1.345 acres of perennial stream channels (including Alder Creek), 1.744 acres of intermittent stream channels, 0.425 acre of ditches, 0.007 acre of freshwater marsh, and 0.852 acre of ponds.

The on-site elements of the project area also contains 0.51 acre of ditch and 0.119 acre of pond, which USACE determined to be nonnavigable, isolated, and intrastate waters with no apparent interstate commerce connection and therefore not at this time considered jurisdictional waters of the U.S. (non-jurisdictional). Although these aquatic features are not subject to USACE jurisdiction under Section 404 of the CWA, they may be considered waters of the state under California's Porter-Cologne Act, and therefore subject to regulation by the Central Valley Regional Water Quality Control Board (RWQCB).

Wetlands and other waters of the U.S. within the project area, as well as waters of the state, provide important ecological functions within the watershed. Wetland functions are processes or services that take place in a wetland and they fall into the broad categories of habitat, hydrologic, and water quality functions. Habitat functions are those services that benefit wildlife and include providing food, shelter, water, and breeding grounds. Hydrologic functions of the wetlands and other waters within the project area include groundwater recharge and moderation of discharge, water storage, and reduction of flow velocity. Water quality functions include nutrient cycling, removal of nutrients and compounds, and trapping sediment. Many wetland functions are interdependent and if one function becomes impaired, it can adversely affect other wetland functions.

In addition to the on-site waters of the U.S. within the project area, it is estimated that the off-site elements of the project area support approximately 2.502 acres of waters of the U.S. consisting of 0.102 acre of seeps, 0.316 acre of vernal pools, 0.066 acre of seasonal wetlands, 0.079 acre of seasonal wetland swales, 0.435 acre of perennial stream channel, 0.044 acre of intermittent drainage channels, 0.007 acre of ditch and 1.452 acres of freshwater marsh. Off-site areas are considered assessment levels and a formal wetland delineation has not been completed and verified by USACE for the off-site elements.

4.3.3 REGULATORY SETTING

A number of federal, State, and local policies provide the regulatory framework that guides the protection of biological resources. The following discussion summarizes those laws that are most relevant to biological resources in the vicinity of the project site.

Federal Regulations

Federal Endangered Species Act

The United States Congress passed the Federal Endangered Species Act (FESA) in 1973 to protect those species that are endangered or threatened with extinction. The FESA is intended to operate in conjunction with the National Environmental Policy Act (NEPA) to help protect the ecosystems upon which endangered and threatened species depend.

The FESA prohibits the "take" of endangered or threatened wildlife species. "Take" is defined as harassing, harming (including significantly modifying or degrading habitat), pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collecting wildlife species, or any attempt to engage in such conduct (16 USC 1532, 50 CFR 17.3). Taking can result in civil or criminal penalties.

The FESA and NEPA Section 404 guidelines prohibit the issuance of wetland permits for projects that would jeopardize the existence of threatened or endangered wildlife or plant species. The U.S. Army Corps of Engineers (USACE) must consult with the U.S. Fish and Wildlife Service (USFWS) and National Oceanic Atmospheric Administration (NOAA) when threatened or endangered species may be affected by a proposed project to determine whether issuance of a Section 404 permit would jeopardize the species.

Migratory Bird Treaty Act

Raptors (birds of prey), migratory birds, and other avian species are protected by a number of state and federal laws. The federal Migratory Bird Treaty Act (MBTA) prohibits the killing, possessing, or trading of migratory birds except in accordance with regulations prescribed by the Secretary of Interior. Section 3503.5 of the California Fish and Wildlife Code states, "It is unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes (birds-of-prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto."

Clean Water Act

The USACE regulates discharge of dredged or fill material into Waters of the United States under Section 404 of the Clean Water Act (CWA). "Discharge of fill material" is defined as the addition of fill material into Waters of the U.S., including but not limited to the following: placement of fill that is necessary for the construction of any structure, or impoundment requiring rock, sand, dirt, or other material for its construction; site-development fills for

recreational, industrial, commercial, residential, and other uses; causeways or road fills; and fill for intake and outfall pipes and sub-aqueous utility lines (33 C.F.R. §328.2[f]). In addition, Section 401 of the CWA (33 U.S.C. 1341) requires any applicant for a federal license or permit to conduct any activity that may result in a discharge of a pollutant into Waters of the United States to obtain a certification that the discharge will comply with the applicable effluent limitations and water quality standards.

Waters of the United States include a range of wet environments such as lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, and wet meadows. Wetlands are defined as "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 C.F.R. §328.3[b]).

Furthermore, Jurisdictional Waters of the United States can be defined by exhibiting a defined bed and bank and ordinary high water mark (OHWM). The OHWM is defined by the USACE as "that line on shore established by the fluctuations of water and indicated by physical character of the soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas" (33 C.F.R. §328.3[e]).

State Regulations

California Endangered Species Act

The State of California enacted the California Endangered Species Act (CESA) in 1984. The CESA is similar to the FESA but pertains to State-listed endangered and threatened species. CESA requires state agencies to consult with the CDFW when preparing California Environmental Quality Act (CEQA) documents to ensure that the state lead agency actions do not jeopardize the existence of listed species. CESA directs agencies to consult with CDFW on projects or actions that could affect listed species, directs CDFW to determine whether jeopardy would occur, and allows CDFW to identify "reasonable and prudent alternatives" to the project consistent with conserving the species. Agencies can approve a project that affects a listed species if they determine that "overriding considerations" exist; however, the agencies are prohibited from approving projects that would result in the extinction of a listed species.

The CESA prohibits the taking of State-listed endangered or threatened plant and wildlife species. CDFW exercises authority over mitigation projects involving state-listed species, including those resulting from CEQA mitigation requirements. CDFW may authorize taking if an approved habitat management plan or management agreement that avoids or compensates for possible jeopardy is implemented. CDFG requires preparation of mitigation plans in accordance with published guidelines.

The CDFW exercises jurisdiction over wetland and riparian resources associated with rivers, streams, and lakes under California Fish and Game Code Sections 1600 to 1607. The CDFW has the authority to regulate work that will substantially divert, obstruct, or change the natural flow

of a river, stream, or lake; substantially change the bed, channel, or bank of a river, stream, or lake; or use material from a streambed.

In addition, CDFW enforces the Fish & Wildlife Code of California, which provides protection for "fully protected birds" (§3511), "fully protected mammals" (§4700), "fully protected reptiles and amphibians" (§5050), and "fully protected fish" (§5515). The California Code of Federal Regulations (Title 14) prohibits the take of Protected amphibians (Chapter 5, §41), Protected reptiles (Chapter 5, §42) and Protected furbearers (Chapter 5, §460). The California Endangered Species Act, which prohibits 'take' of state-listed Endangered or Threatened species, is also enforced by CDFW.

For projects resulting in significant impacts to biological resources, mitigation measures are required to minimize adverse environmental effects. Mitigation measures often include, for example, replacement of removed trees and mitigation for impacts to wetlands and/or waters. Depending on the quality and extent of the area impacted, the mitigation ratio can vary from 1:1 (mitigation: impact) and 5:1. For non-water-dependent projects located near creeks, the CDFW also typically requires the establishment of a buffer zone immediately adjacent to creeks and wetlands. Depending upon the specific project components and the presence of State- or federally-listed species, the buffer zone may be as little as 50 feet or as much as 300 feet.

CDFW Species of Special Concern

In addition to formal listing under FESA and CESA, plant and wildlife species receive consideration during the CEQA process. Species that may be considered for review are included on a list of "Species of Special Concern" developed by the CDFW. CDFW tracks species in California whose numbers, reproductive success, or habitat may be threatened.

Local Regulations

The following are the local government environmental goals and policies relevant to the CEQA review process.

City of Folsom 1993 General Plan

The following goals and policies from the Folsom 1993 General Plan are applicable to biological resources:

Goal 24 To ensure that projects contain landscaping and trees that complement the City's natural character.

Policy 24.1 Development projects shall contain landscaping of common or public areas, surface parking areas, and streets bordering the project.

Policy 24.2 Prior to the granting of a building permit, a project must have an approved landscaping plan showing the location, type, and proposed maintenance of landscaping.

Policy 24.3 The developer or property owners shall be responsible for maintaining landscaping required as part of the project approval for residential developments where there are common areas, and for all commercial and industrial developments. The City will require the establishment of a landscaping maintenance district or other legally binding maintenance agreement and sin reserve the power to enforce the maintenance agreement through appropriate means.

Policy 24.4 The City shall adopt a landscaping ordinance with standards for:

1. Preferred types of plants and materials.
2. Agreements to ensure the continued maintenance of landscaped areas.
3. Minimum size of trees upon planting.
4. Amount of landscaping area.

Goal 25 Wherever feasible, to preserve, acquire, rehabilitate, enhance, and maintain the identified resources for the use and enjoyment of the present and future generations. The identified resources include, but are not limited to:

15. Tricolored Blackbird
16. Swainson's hawk
17. Tiger Salamander
18. Valley Elderberry Longhorn Beetle

Policy 25.3 Sensitive habitat areas and open space shall have their borders defined by public access ways, and/or shall have views from adjacent buildings oriented toward the areas.

Policy 25.4 The City shall require that a qualified biologist conduce a vegetative/wildlife field survey, and analysis prior to consideration of development, applications for projects within or adjacent to sensitive habitat areas and potential habitats for sensitive wildlife and floral species.

Other Statutes, Codes, and Policies Affording Limited Species Protection

California Native Plant Society

CNPS maintains the Inventory of Rare and Endangered Plants of California (CNPS 2014), which provides a list of plant species native to California that are threatened with extinction, have limited distributions, and/or low populations. Plant species meeting one of these criteria are assigned to one of six ranks (i.e. CRPR). The rank system was developed in collaboration with government, academia, non-governmental organizations, and private sector botanists, and is jointly managed by the California Department of Fish and Wildlife (CDFW) and the CNPS. The ranks are currently recognized in the California Natural Diversity Database (CNDDB). The following are definitions of the CNPS CRPR:

- CRPR 1A – presumed extirpated in California and either rare or extinct elsewhere;
- CRPR 1B – rare, threatened, or endangered in California and elsewhere;
- CRPR 2A – presumed extirpated in California, but more common elsewhere;
- CRPR 2B – rare, threatened, or endangered in California but more common elsewhere;
- CRPR 3 – a review list of plants about which more information is needed; and
- CRPR 4 – a watch list of plants of limited distribution.

Additionally, the CNPS has defined Threat Ranks that are added as part of the rank for plant species listed in the Inventory of Rare and Endangered Plants of California (CNPS 2014). Threat Ranks designate the level of threat on a scale of 0.1 through 0.3, with 0.1 being the most threatened and 0.3 being the least threatened. Threat Ranks are generally present for all plants ranked 1B, 2B, or 4, and for the majority of plants ranked 3. Plant species ranked 1A and 2A (presumed extirpated in California), and some species ranked 3, which lack threat information, do not typically have a Threat Rank extension. The following are definitions of the CNPS Threat Ranks:

- Threat Rank 0.1 – Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat);
- Threat Rank 0.2 – Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat) ; and
- Threat Rank 0.3 – Not very threatened in California (<20% of occurrences threatened / low degree and immediacy of threat or no current threats known).

Factors, such as habitat vulnerability and specificity, distribution, and condition of occurrences, are considered in setting the Threat Rank, and differences in Threat Ranks do not constitute additional or different protection (CNPS 2014). Depending on the policy of the lead agency, substantial impacts to plants listed as CRPR 1A, 1B, or 2 (regardless of threat rank) are typically considered significant under CEQA Guidelines Section 15380. For CRPR 3 and 4 species (regardless of threat rank), significance under CEQA is typically evaluated if the lead agency has determined those plants to be of local significance or regional importance. Such plants may be identified in local Habitat Conservation Plans (HCPs) or City or County General Plans.

4.3.4 IMPACTS AND MITIGATION MEASURES

This section describes the standards of significance and methodology utilized to analyze and determine the proposed project's potential impacts related to biological resources.

Standards of Significance

Consistent with Appendix G of the CEQA Guidelines, the City's General Plan, the Folsom South of U.S. 50 Specific Plan, and professional judgment, a significant impact would occur if the proposed project would result in the following:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFW or USFWS;
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the CDFW or USFWS;
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the CWA (including, but not limited to marshes, vernal pools, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance;
- Conflict with the provisions of an adopted Habitat Conservation Plan (HCP), Natural Community Conservation Plan (NCCP), or other local, regional, or State habitat conservation plan.

Method of Analysis

This analysis of impacts on biological resources resulting from implementation of the proposed project is based on review of existing biological resources documented on or near the project area, as listed previously in this section and information obtained from the *2010 Volume I, Draft EIR/EIS, South of U.S. 50 Specific Plan Project*. All biological resources are analyzed at project level detail based on the proposed backbone infrastructure.

4.3 Project-Specific Impacts and Mitigation Measures

The following discussion of biological resources impacts is based on implementation of the proposed project in comparison to existing conditions and the standards of significance presented above.

4.3-1 Special-status plant species. Based on the analysis below and with the implementation of mitigation, the impact is *potentially significant.*

Determinate-level presence/absence surveys for special-status plant species have been conducted on all properties within the Backbone except for the Javanifard and Zarghami and Folsom Heights portions and the off-site areas. The on-site elements of the backbone infrastructure were surveyed over two seasons per U.S. Fish and Wildlife Guidelines (USFWS 2000). In addition, surveys have been conducted in the off-site elements with the exception of three areas, two north of U.S. Highway 50 and one area just north of the Prairie City Road and White Rock Road intersection in the southwestern corner of the SPA. No special-status plant species were found during any of the focused surveys. The potential occurrence of special-status plant species remains on properties that have not been surveyed, to date.

If special-status plants are found on any of the remaining unsurveyed properties, project development could result in take of individual plants and/or populations. Project development could indirect effect special-status plants including an increase in pollutants transported by urban runoff and other means, changes to the vegetation composition as a result of changes in land use and management practices, altered hydrology from the construction of adjacent development and roadways, habitat fragmentation, and increased competition with invasive plant species or noxious weeds resulting from habitat fragmentation.

Special-status species could be present in the areas discussed above that have not been surveyed, and therefore, project development could result in impacts to special-status plant species. Thus, direct and indirect impacts on special-status plant species are considered ***potentially significant***.

Mitigation Measure(s)

4.3.1 ***Conduct Special-Status Plant Surveys; Implement Avoidance and Mitigation Measures or Compensatory Mitigation***

Determinate- level presence/absence plant surveys have not been conducted for all of the properties within the Backbone and the off-site areas. These areas may support suitable habitat for special status plants. The following measures are should be implemented to mitigate for impacts to special status plant to less-than-significant:

- *The project applicant(s), shall retain a qualified botanist to conduct protocol level special-status plant surveys for the remaining unsurveyed areas within the Backbone and off-site areas. If no special-status plants are found during focused surveys, the botanist shall document the findings in a letter report to USFWS, CDFW and, the City of Folsom, and no further mitigation shall be required.*

- *If special-status plant populations are found, the project applicant(s) shall consult with CDFW and USFWS, as appropriate depending on species status, to determine the appropriate mitigation measures for direct and indirect impacts on any special-status plant population that could occur as a result of project implementation. Mitigation measures may include preserving and enhancing existing populations, creation of off-site populations on project mitigation sites through seed collection or transplantation, and/or restoring or creating suitable habitat in sufficient quantities to achieve no net loss of occupied habitat or individuals.*
- *If potential impacts on special-status plant species are likely, a mitigation and monitoring plan shall be developed before the approval of grading plans or any ground-breaking activity within 250 feet of a special-status plant population. The mitigation plan shall be submitted to the City of Folsom for review and approval. It shall be submitted concurrently to CDFW or USFWS, as appropriate depending on species status, for review and comment. For Federally-listed species, the plan shall require maintaining viable plant populations on-site and shall identify avoidance measures for any existing population(s) to be retained and compensatory measures for any populations directly affected. Possible avoidance measures include fencing populations before construction and exclusion of project activities from the fenced-off areas, and construction monitoring by a qualified botanist to keep construction crews away from the population. The mitigation plan shall also include monitoring and reporting requirements for populations to be preserved on site or protected or enhanced off-site.*
- *If relocation efforts are part of the mitigation plan, the plan shall include details on the methods to be used, including collection, storage, propagation, receptor site preparation, installation, long-term protection and management, monitoring and reporting requirements, and remedial action responsibilities should the initial effort fail to meet long-term monitoring requirements.*
- *If off-site mitigation includes dedication of conservation easements, purchase of mitigation credits or other off-site conservation measures, the details of these measures shall be included in the mitigation plan, including information on responsible parties for long-term management, conservation easement holders, long-term management requirements, and other details, as appropriate to target the preservation on long term viable populations.*

Implementation of the above mitigation measure would reduce the proposed project's potential impact during construction to special-status plant species to a *less-than-significant* level by requiring a pre-construction special-status plant survey and consultation with CDFW and USFWS (if required depending on species status) and

preparation of a mitigation and monitoring plan if special-status plant species are found on-site.

4.3-2 Special-status wildlife species and nesting birds protected under the Migratory Bird Treaty Act. Based on the analysis below and with the implementation of mitigation, the impact is *less than significant*.

Project development could result in impacts to a number of special-status wildlife species. Potentially occurring special-status wildlife listed under ESA include vernal pool fairy shrimp, vernal pool tadpole shrimp, and valley elderberry longhorn beetle. Special-status wildlife listed under CESA includes Swainson's hawk. Impacts on these five listed species would be considered significant and are discussed in detail below. Others special-status species such as western spadefoot, tricolored blackbird burrowing owl and special-status bats could also be adversely affected, and are discussed further below. Impacts on all other special-status wildlife species are considered less than significant with the implementation of mitigation measures.

Vernal Pool Invertebrates

Vernal pools, seasonal wetlands, and seasonal wetland swales within the project area represent potential habitat for vernal pool fairy shrimp, vernal pool tadpole shrimp, and western spadefoot toad. Vernal pool tadpole shrimp is Federally listed as endangered. Vernal pool fairy shrimp is Federally listed as threatened.

Protocol level surveys (two wet-seasons or consecutive wet- and dry-season surveys) have been conducted for all properties within the Backbone except for the Javanifard and Zarghami and Folsom Heights portions; the USFWS in its Biological Opinion for the SPA determined that the Folsom Heights property did not contain suitable habitat for these species (USFWS 2014). In addition, surveys for the majority of the off-site elements were also surveyed for Federally listed vernal pool. Vernal pool fairy shrimp have been documented in two locations within the Prairie City Road Business Park property at the northwest corner of the project area during wet-season surveys in 2008-2009. In addition, vernal pool tadpole shrimp have been documented in one vernal pool south of White Rock Road in the off-site infrastructure area. Federally listed vernal pool crustaceans may also occur in areas of the project area (both on-site and off-site) that have not yet been surveyed yet.

Implementation of the project, including off-site elements, would permanently impact approximately 9.247 acres of potential habitat for special-status vernal pool crustaceans, which includes approximately 1.05 acres of vernal pools, 1.265 acres of seasonal wetland, and 6.932 acres of seasonal wetland swale. However, wetland types and acreage within the off-site elements is considered assessment level only and has not been verified by the USACE.

In addition to the direct effects to on-site habitat, suitable habitat off-site may be indirectly affected by project activities. Indirect effects include habitat degradation that

could result from degradation of water quality caused by urban runoff, erosion, or siltation; intrusion of humans and domestic animals; and introduction of invasive plant species. In addition, the hydrology of the wetland habitats for vernal pool crustaceans and western spadefoot could be altered by grading of the site. All portions of the project area would be subject to contour grading, which could affect wetland hydrology and water quality. Overall site topography would be substantially altered to achieve level ground for development. Construction of new roadways and roadway improvements associated with development of the backbone infrastructure could disrupt or eliminate hydrologic and biological connectivity that is important to support wetlands and associated wildlife species. In addition, western spadefoot, if they occur within the project area, could be indirectly affected by an increase in vehicular traffic on the site, which could result in mortality during dispersal or seasonal movements between aquatic and upland habitats.

Mitigation Measure

4.3-2A ***Implement Conditions of the Biological Opinion for Federally Listed Vernal Pool Invertebrates***

A biological opinion [#81420-2010-F-0620-1(BO)] was issued by USFWS for the Proposed Folsom Area Specific Plan Project, which includes the backbone infrastructure project. No project construction shall proceed in areas supporting potential habitat for Federally listed vernal pool invertebrates, or within adequate buffer areas (250 feet or lesser distance deemed sufficiently protective by a qualified biologist with approval from USFWS), until the project applicant(s) have abided by the conditions of the BO (including conservation and minimization measures) intended to be completed before on-site construction..

Implementation of the above mitigation measure would reduce the proposed project's potential impact during construction to special-status species associated with vernal pools to a *less-than-significant* level by requiring appropriate conservation minimization measures to be implanted to minimize impacts to special-status species associated with vernal pools.

Valley Elderberry Longhorn Beetle

The valley elderberry longhorn beetle (VELB) is Federally listed as threatened.. Six elderberry shrubs with 26 stems greater than 1.0 inch in diameter at ground level, which provide potential habitat for valley elderberry longhorn beetle have been documented throughout the project area. Stems of 1.0 inch or greater in diameter are considered potential VELB habitat (USFWS 2014). A beetle exit hole was identified on one of these shrubs. In addition, off-site elements have not been surveyed for elderberry shrubs, and they may occur in these unsurveyed areas. Implementation of the project, including off-site elements, could result in the direct or indirect loss of valley elderberry longhorn beetles or their habitat. All six elderberry shrubs will be impacted by project implementation. Removal of elderberry shrubs containing valley elderberry longhorn

beetle larvae would result in a direct take of a Federally-threatened species, which would result in a significant impact. Indirect impacts could also result if the health of elderberry shrubs containing valley elderberry longhorn beetle larvae is adversely affected. Indirect impacts could occur if herbicides or insecticides are used in habitats adjacent to elderberry shrubs, if earthmoving activities disturb elderberry shrub roots, or if the topography and/or hydrology of the surrounding area are altered to the extent that it reduces the soil moisture surrounding the elderberry shrub.

Mitigation Measure

4.3.2B ***Implement Conditions of the Biological Opinion for Impacts on Valley Elderberry Longhorn Beetle***

A biological opinion [#81420-2010-F-0620-1(BO)] has been issued by USFWS that identifies impacts to 6 elderberry shrubs with 26 stems measuring one inch or larger in diameter at ground level with project implementation. Prior to project implementation, the project applicant(s) shall abide by all pertinent conditions in the BO relating to the proposed construction, including conservation and minimization measures, intended to be completed before on-site construction. As identified in the BO, all impacted shrubs will be removed and transplanted in accordance with the Service's 1999 Conservation Guidelines for the Valley Elderberry Longhorn Beetle to a Service approved conservation bank within the service are of the project or another location approved by the service. In addition, compensatory mitigation for elderberry shrubs that would be removed and transplanted from their current locations shall include purchasing beetle conservation credits at a Service-approved conservation bank within a service area encompassing the project area. Credits will be determined in the amended BO through consultation with USFWS.

The population of valley elderberry longhorn beetles, the general condition of the conservation area, and the condition of the elderberry and associated native plantings in the conservation area must be monitored over a period of either ten consecutive years or for seven years over a 15-year period. A minimum survival rate of at least 60% of the elderberry plants and 60% of the associated native plants must be maintained throughout the monitoring period. Within one year of discovering that survival has dropped below 60%, the project proponent shall replace failed plantings to bring survival above this level. Detailed information on monitoring success of relocated and planted shrubs and measures to compensate (should success criteria not be met) would be required in the amended BO.

Implementation of the above mitigation measure would reduce the proposed project's potential impact during construction to valley elderberry longhorn beetle to a ***less-than-significant*** level by requiring compensation for loss of habitat and implementation of conservation and minimization measures during project implementation.

Amphibians and Reptiles

Focused surveys for western spadefoot were conducted in April 2006 on approximately 40% of the SPA and were not detected within these areas (MJM Properties 2006d). The aquatic habitats surveyed were determined to be unsuitable for western spadefoot due to the abundance of predatory bullfrogs. Although habitat conditions may not be suitable for successful reproduction of western spadefoot within the survey areas, this species has been documented in Mather Regional Park, approximately 5 miles from the project area. In addition surveys for this species have not been conducted throughout the entire Backbone. Therefore this species has the potential to occur in areas that have not been surveyed within the project area.

Although vernal pools, seasonal wetlands, ponds and grasslands on site may provide suitable habitat for California tiger salamander, this species have not been detected in Sacramento County north of the Cosumnes River (Folsom and USACE 2010). In a survey transect that extended along the west side of the Sacramento Valley from Shasta County to Solano County, California tiger salamanders were recorded only at the Jepson Prairie in Solano County (Folsom and USACE 2010). Surveys of vernal pool habitats on and near the project area have not incidentally detected California tiger salamander. Given that the closest known population is 15 miles to the south of the project area and the lack of known populations in the project region, California tiger salamander is not expected to occur within the project area. As a result, no direct or indirect impacts to California tiger salamander would occur.

Suitable habitat for western pond turtle occurs in two large ponds within the oak woodland community in the west-central portion of the SPA and in perennial portions of Alder Creek and tributaries. Implementation of the project would fill approximately 0.852 acres of USACE jurisdictional ponds and 0.119 of non-jurisdictional ponds within the project area. The majority of the ponds however, in the western-central portion of the SPA and the perennial portions of Alder Creek and its tributaries, and upland habitats suitable for western pond turtle nesting habitat would not be impacted by the backbone infrastructure.

Mitigation Measure

Determinate- level presence/absence western spadefoot surveys have not been conducted for all of the properties within the Backbone and the off-site areas. These areas may support suitable habitat for western spadefoot. The following measures should be implemented to mitigate the impacts to western spadefoot to less-than-significant:

- *The project applicant(s), shall retain a qualified biologist to conduct protocol level western spadefoot surveys for the remaining unsurveyed*

areas within the Backbone and off-site areas. If no western spadefoot are found during focused surveys, the biologist shall document the findings in a letter report to CDFW and the City of Folsom, and no further mitigation shall be required.

- *If western spadefoot populations are found, the project applicant(s) shall consult with CDFW, to determine the appropriate mitigation measures for direct impacts to the western spadefoot population that could occur as a result of project implementation. Mitigation measures may include relocation of aquatic larvae, construction monitoring, or preserving and enhancing existing populations.*

The vast majority of suitable western pond turtle habitat within the project will not be impacted. However, a small portion of the aquatic habitat that may support pond turtles is proposed to be impacted by the project. Therefore, following measures should be implemented to mitigate the impacts to western pond turtles to less-than-significant:

- *The project applicant(s), shall retain a qualified biologist to conduct preconstruction western pond turtle survey within 48 hours of the initiation of construction activity within the ponds. If no western pond turtles are found during the preconstruction survey, the biologist shall document the findings in a letter report to CDFW and the City of Folsom, and no further mitigation shall be required.*
- *If western pond turtles are found, the qualified biologist shall capture and relocate the turtles to a suitable preserved location in the vicinity of the project.*

Several other special-status species with potential to occur within the project area include western pond turtle and American badger.

Swainson's Hawk

Swainson's hawk, a species state-listed as threatened, is one of several raptors that may nest and/or forage within the project area. All raptors and their nests are protected under Section 3503.5 of the California Fish and Game Code. Common raptors that could nest within the project area include Cooper's hawk, American kestrel, red-tailed hawk, red-shouldered hawk, western screech-owl, great horned owl, and barn owl.

Implementation of the project, including off-site elements, could have an adverse effect on nesting and foraging habitat for raptors. Tall trees within open woodlands, isolated trees, and trees within riparian corridors are generally considered potential nesting habitat. Approximately 102.78 acres of existing oak woodland on-site that is considered potential nesting habitat for Swainson's hawk and other tree-nesting raptors would be removed (Figure 4.3-2 Oak Woodland Impacts). Blue oak woodland within the off-site elements has not been quantified; however, there is potential for blue oak woodland to

occur within these areas. Project implementation (e.g. tree removal, construction grading) could result in impacts to active nests.

The 563.252 acres of grassland habitat present within the on-site elements of the project area is considered foraging habitat for raptors, including Swainson's hawk and could be used for nesting by burrowing owl and northern harrier (Figure 4.3-3. SWHA Foraging Habitat Impacts). Grassland habitat within the off-site elements has not been quantified; however, there is potential for annual grassland to occur. The grading, paving, and other ground disturbances in the project footprint could indirectly affect nesting and foraging raptors by reducing the population of the small mammal prey base of many raptors over the entire project area through conversion of natural vegetation cover. Large raptors generally require large areas of suitable foraging habitat. Implementation of the project would result in permanent impacts (installation of roads and other infrastructure) and temporary impacts (grading around roads and infrastructure) to grassland habitat present within the on-site elements of the project area. Of the 563.252 acres of habitat present in the on-site areas, only a portion would be permanently impacted. A determination of permanent versus temporary impacts will be calculated once grading plans are finalized.

As a consequence of direct loss of nesting and foraging habitat and indirect effects to nest success and foraging habitat quality, implementation of the project could eventually lead to the permanent displacement of some raptors from the project area.

Mitigation Measure

Nesting Habitat

> *To mitigate impacts on Swainson's hawk a qualified biologist shall be retained to conduct preconstruction surveys and to identify active nests on and within 0.5 mile of the project area. The surveys shall be conducted before the approval of grading and/or improvement plans (as applicable) and no less than 14 days and no more than 30 days before the beginning of construction. To the extent feasible, guidelines provided in Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in the Central Valley (Swainson's Hawk Technical Advisory Committee 2000) shall be followed for surveys for Swainson's hawk. If no nests are found, no further mitigation is required.*
>
> *If active nests are found, impacts on nesting Swainson's hawks shall be avoided by establishing appropriate buffers around the nests. No project activity shall commence within the buffer area until the young have fledged, the nest is no longer active, or until a qualified biologist has determined in coordination with CDFW that reducing the buffer would not result in nest abandonment. CDFW guidelines recommend implementation of 0.25- or 0.5-mile-wide buffers, but the size of the buffer may be adjusted if a qualified biologist and the City, in consultation with CDFW, determine that such an adjustment would not be likely to adversely affect*

the nest. Monitoring of the nest by a qualified biologist during and after construction activities will be required if the activity has potential to adversely affect the nest.

Foraging Habitat

To mitigate for the loss of Swainson's hawk foraging habitat, the project applicant(s) shall identify permanent impacts to foraging habitat and prepare and implement a Swainson's hawk mitigation plan including, but not limited to the requirements described below.

Before the approval of grading and improvement plans or before any ground-disturbing activities, whichever occurs first, the project applicant(s), to the satisfaction of the City suitable Swainson's hawk foraging habitat to ensure 1:1 mitigation of habitat value for Swainson's hawk foraging habitat that is permanently lost as a result of the project, as determined by the City after consultation with CDFW and a qualified biologist.

The 1:1 habitat value shall be based on Swainson's hawk nesting distribution and an assessment of habitat quality, availability, and use within the City's planning area, or Sacramento County jurisdiction. The mitigation ratio shall be consistent with the 1994 DFG Swainson's Hawk Guidelines included in the Staff Report Regarding Mitigation for Impacts to Swainson's Hawks (Buteo swainsoni) in the Central Valley of California. Such mitigation shall be accomplished through either the transfer of fee title or perpetual conservation easement. The mitigation land shall be located within the known foraging area and within Sacramento County. The City after consultation with CDFW, will determine the appropriateness of the mitigation land.

The project applicant(s) shall transfer said Swainson's hawk mitigation land, through either conservation easement or fee title, to a third-party, nonprofit conservation organization (Conservation Operator), with the City and CDFW named as third-party beneficiaries. The Conservation Operator shall be a qualified conservation easement land manager that manages land as its primary function. Additionally, the Conservation Operator shall be a tax-exempt nonprofit conservation organization that meets the criteria of Civil Code Section 815.3(a) and shall be selected or approved by the City or County, after consultation with CDFW. The City, or County, after consultation with CDFW and the Conservation Operator, shall approve the content and form of the conservation easement. The City, or County, CDFW, and the Conservation Operator shall each have the power to enforce the terms of the conservation easement. The

Conservation Operator shall monitor the easement in perpetuity to assure compliance with the terms of the easement.

The project applicant(s), after consultation with the City CDFW, and the Conservation Operator, shall establish an endowment or some other financial mechanism that is sufficient to fund in perpetuity the operation, maintenance, management, and enforcement of the conservation easement. If an endowment is used, either the endowment funds shall be submitted to the City for impacts on lands within the City's jurisdiction to an appropriate third-party nonprofit conservation agency, or they shall be submitted directly to the third-party nonprofit conservation agency in exchange for an agreement to manage and maintain the lands in perpetuity. The Conservation Operator shall not sell, lease, or transfer any interest of any conservation easement or mitigation land it acquires without prior written approval of the City and CDFW. Mitigation lands established or acquired for impacts incurred at the off-site elements shall require approval from Sacramento County prior to sale or transfer of mitigation lands or conservation easement.

If the Conservation Operator ceases to exist, the duty to hold, administer, manage, maintain, and enforce the interest shall be transferred to another entity acceptable to the City and CDFW. The City Planning Department shall ensure that mitigation habitat established for impacts on habitat within the City's planning area is properly established and is functioning as habitat by conducting regular monitoring of the mitigation site(s) for the first 10 years after establishment of the easement. Sacramento County shall monitor habitat and ensure success for impacts on habitat at the off-site detention basin.

Other Raptors

All raptors and their nests are protected under Section 3503.5 of the California Fish and Game Code. Special status raptors that could nest within the project area include northern harrier, white-tailed kite, Cooper's hawk, western burrowing owl. Common raptors that could nest within the project area include American kestrel, red-tailed hawk, red-shouldered hawk, western screech-owl, great horned owl, and barn owl.

The grassland community within the project support suitable foraging habitat for wintering raptors, some of which are special status species. These are: bald eagle, ferruginous hawk, golden eagle, short-eared owl, merlin, and prairie falcon. The implementation of Mitigation measure ##-## (Swainson's Hawk foraging habitat) should reduce the impacts to winter raptor foraging habitat to less-than-significant.

The following measures should be implemented to mitigate the impacts to nesting raptors to less-than-significant:

Mitigation Measure

To mitigate impacts on nesting raptors a qualified biologist shall be retained to conduct preconstruction surveys and to identify active nests and occupied burrows on and within 0.5 mile of the project area. The surveys shall be conducted before the approval of grading and/or improvement plans (as applicable) and no less than 14 days and no more than 30 days before the beginning of construction.

If active nests are found, impacts on nesting raptors shall be avoided by establishing appropriate buffers around the nests. No project activity shall commence within the buffer area until the young have fledged, the nest is no longer active, or until a qualified biologist has determined in coordination with CDFW that reducing the buffer would not result in nest abandonment. The buffer may be adjusted if a qualified biologist and the City, in consultation with CDFW, determine that such an adjustment would not be likely to adversely affect the nest. Monitoring of the nest by a qualified biologist during and after construction activities will be required if the activity has potential to adversely affect the nest.

If active burrowing owl burrows are found, a mitigation plan shall be submitted to the City for review and approval before any ground-disturbing activities. The City shall consult with CDFW. The mitigation plan may consist of installation of one-way doors on all burrows to allow owls to exit, but not reenter, and construction of artificial burrows within the project vicinity, as needed; however, burrow owl exclusions may only be used if a qualified biologist verifies that the burrow does not contain eggs or dependent young. If active burrows contain eggs and/or young, no construction shall occur within 200-500 meters (depending on level of disturbance (CDFW 2012)) of the burrow until young have fledged. Once it is confirmed that there are no owls inside burrows, these burrows may be collapsed.

Tricolored Blackbird

Nesting habitat for tricolored blackbird is found in riparian habitat and blackberry brambles along Alder Creek and adjacent to several ponds within the SPA, and some of this habitat is present within the project area. Tricolored blackbirds nest in colonies of 100s to 10,000s of individuals. Nesting colonies will often occur in the same location over many years, but colonies may also shift locations if nest failure occurs. An abundant insect source near the nesting colony is an important habitat component and nesting colonies are often associated with dairies, feedlots, or wastewater treatment ponds. Although tricolored blackbirds are not known to nest on the project area and suitable nesting and foraging habitat is limited, several tricolored blackbird colonies are known from within 5 miles of the project area (Folsom and USACE 2010). Disturbance during

construction could result in nest abandonment and loss of eggs or young if an active tricolored blackbird nesting colony were to be present during ground-disturbing activities.

Mitigation Measure

Because project activities adjacent to potential nesting habitat may result in impacts to tricolored blackbird nesting colonies, the following measures should be implemented to mitigate the impacts to less-than-significant:

> *To avoid and minimize impacts to tricolored blackbird, a qualified biologist shall conduct a preconstruction survey for any project activity that would occur during the tricolored blackbird's nesting season (March 1–August 31). The preconstruction survey shall be conducted before any activity occurring within 500 feet of suitable nesting habitat, including freshwater marsh and areas of riparian scrub vegetation. The survey shall be conducted within 14 days before project activity begins.*
>
> *If no tricolored blackbird colony is present, no further mitigation is required. If a colony is found, the qualified biologist shall establish a buffer around the nesting colony. No project activity shall commence within the buffer area until a qualified biologist confirms that the colony is no longer active. The size of the buffer shall be determined in consultation with CDFW. Buffer size is anticipated to range from 100 to 500 feet, depending on the nature of the project activity, the extent of existing disturbance in the area, and other relevant circumstances.*

Other Nesting Special Status Birds

The project area provides potential nesting habitat for loggerhead shrike, grasshopper sparrow, and Modesto song sparrow. Individuals of these species may nest in open woodland, grassland, or riparian habitats, respectively, within the project area.

Mitigation Measure

Because project activities may impact nesting of these special status birds, the following measures should be implemented to mitigate the impacts to less-than-significant:

> *To avoid and minimize impacts to nesting special status birds, a qualified biologist shall conduct a preconstruction survey for any project activity that would occur during the nesting season (approximately March 1–August 31). The preconstruction survey shall be conducted before any activity occurring within 100 feet of suitable nesting habitat. The survey shall be conducted within 14 days before project activity begins.*

If no active special status bird nests present, no further mitigation is required. If an active nest is found, the qualified biologist shall establish a buffer around the nest. No project activity shall commence within the buffer area until a qualified biologist confirms that the nest is no longer active. The size of the buffer shall be determined in consultation with CDFW. Buffer size is anticipated to range from 50 to 100 feet, depending on the nature of the project activity, the extent of existing disturbance in the area, and other relevant circumstances.

Birds Protected Under the Migratory Bird Treaty Act

The project area provides potential nesting habitat for many bird species protected under the federal Migratory Bird Treaty Act. These include many common species, such as northern mockingbird, American robin, and house finch.

Mitigation Measure

Because project activities may impact nesting of MBTA birds, the following measures should be implemented to mitigate the impacts to less-than-significant:

To avoid and minimize impacts to nesting MBTA birds, a qualified biologist shall conduct a preconstruction survey for any project activity that would occur during the nesting season (approximately March 1–August 31). The preconstruction survey shall be conducted before any activity occurring on-site. The survey shall be conducted within 14 days before project activity begins.

If no active MBTA bird nests are present, no further mitigation is required. If an active nest is found, the qualified biologist shall establish a buffer around the nest. No project activity shall commence within the buffer area until a qualified biologist confirms that the nest is no longer active. The size of the buffer shall be determined in consultation with CDFW. Buffer size is anticipated to range from 10 to 100 feet, depending on the species found, nature of the project activity, the extent of existing disturbance in the area, and other relevant circumstances.

Special-Status Bats

Several special-status bat species have potential to occur within the project area, including pallid bat, Townsend's big-eared bat, western mastiff bat, and western red bat. These species may forage over open grassland and woodland areas, as well as riparian areas. Roosting habitat is typically a limiting factor to bat distribution. Western mastiff bat is unlikely to roost on-site due to habitat preference to use tall cliffs and rocks, which are absent from the site. Western red bat roosts in tree foliage, especially in cottonwoods, sycamore, and other broad-leaved deciduous riparian trees (Folsom and USACE 2010); suitable roosting habitat for western red bat is lacking from the site, as the riparian habitat

along Alder Creek mostly consists of willow and blackberry scrub Several abandoned mine shafts are present throughout the SPA and would be impacted by the backbone infrastructure. It is unknown if this mine shafts provide suitable thermal or structural conditions for roosting bats. However, if the mine shafts are used as a day roost, hibernation roost, or maternity colony roost, implementation of the project could result in injury and mortality of pallid bat, Townsend's big-eared bat, or other common bat species. Day roosts are used throughout the spring and summer and maternity colony roosts can be active from approximately early April until mid-October. Hibernation roosts may be used from approximately November to early March.

Mitigation Measure

> *The project applicant(s) shall retain a qualified biologist to conduct surveys for roosting bats. Surveys shall be conducted in the fall to determine if the mine shafts are used as a hibernaculum and in spring and/or summer to determine if it is used as a maternity or day roost. Surveys shall consist of evening emergence surveys to note the presence or absence of bats and could consist of visual surveys at the time of emergence. If evidence of bat use is observed, the number and species of bats using the roost shall be determined. Bat detectors may be used to supplement survey efforts. If no bat roosts are found, then no further study shall be required.*
>
> *If roosts of pallid bat or Townsend's big-eared bats are determined to be present and must be removed, the bats shall be excluded from the roosting site before the mine shaft is removed. A mitigation program addressing compensation, exclusion methods, and roost removal procedures shall be developed in consultation with CDFW before implementation. Exclusion methods may include use of one-way doors at roost entrances (bats may leave but not reenter), or sealing roost entrances when the site can be confirmed to contain no bats. Exclusion efforts may be restricted during periods of sensitive activity (e.g., during hibernation or while females in maternity colonies are nursing young). The loss of each roost (if any) will be replaced in consultation with CDFW and may include construction and installation of bat boxes suitable to the bat species and colony size excluded from the original roosting site. Roost replacement will be implemented before bats are excluded from the original roost sites. Once the replacement roosts are constructed and it is confirmed that bats are not present in the original roost site, the mine shaft may be removed.*

Implementation of the above mitigation measure would reduce the proposed project's potential impact during construction to special-status bat species to a ***less-than-significant*** level by avoiding impacts during roosting through surveys and exclusion efforts.

American Badger

American badger is a wide-ranging species that uses grassland and oak woodland habitats. American badger has been documented adjacent to the project area by Matus (Folsom and USACE 2010), and nearly the entire SPA provides suitable habitat. It is unknown if the species currently occurs within the project area. Although implementation of the project would result in loss of habitat for American badger, the loss of habitat from the project would not be likely to cause loss of individuals or have a significant effect in the local populations due to the presence of adequate suitable foraging and denning habitat in the areas adjacent to the project to support the local populations. Therefore, ***direct and indirect*** impacts to American badger are considered ***less than significant.***

Mitigation Measure

American badger have been documented to occur in the vicinity of the project. Therefore, following measures should be implemented to mitigate the impacts to American badger to less-than-significant:

- *The project applicant(s), shall retain a qualified biologist to conduct preconstruction American badger burrow survey within 48 hours of the initiation of construction activity within the ponds. If no potential American badger burrows are found during the preconstruction survey, the biologist shall document the findings in a letter report to CDFW and the City of Folsom, and no further mitigation shall be required.*
- *If potential American badger burrows are found, the qualified biologist shall consult with CDFW to determine appropriate measures.*

4.3.2D ***Avoid Direct Loss of Swainson's Hawk and Other Raptor Nests***

4.3-3 Riparian habitat, federally protected wetlands, or other sensitive natural community. Based on the analysis below with the implementation of mitigation, the impact is *less than significant.*

Waters of the U.S., including Wetlands, and Waters of the State

Implementation of the project, including off-site elements, would result in direct impacts from the loss of waters of the U.S. resulting from the placement of fill material into approximately 13.675 acres of Federally jurisdictional waters of the U.S. on-site and approximately 2.502 acres off-site, including wetlands (Figure 4.3-4. Wetland Impacts). Off-site waters have not been verified by the USACE and represent assessment level data only. Waters of the U.S. (both verified and assessed) that would be filled consist of 1.050 acres of vernal pools, 1.265 acres of seasonal wetland, 6.932 acres of seasonal wetland swale, 1.459 acre of freshwater marsh, 0.618 acres of freshwater seep, 0.852 acres of pond, 1.780 acres of creek/channel, 1.788 acres of intermittent drainage channel, and 0.432 acres of ditches. In addition, 0.17 acre of waters that USACE determined to be non-jurisdictional would also be filled by the project. The non-jurisdictional waters

impacted consist of 0.051 acre of ditch and 0.119 of pond. Though the placement of fill material into these waters does not require a permit from USACE under Section 404 of the CWA, they are considered waters of the state subject to the jurisdiction of the Central Valley RWQCB under the Porter-Cologne Act. The conversion of these waters of the U.S. to uplands from the placement of fill material would result in a complete loss of the functions of the waters of the U.S.

In addition to direct impacts, the project would result in indirect effects on wetlands from increased urbanization and population, including reduction in water quality caused by urban runoff, erosion, and siltation; intrusion of humans and domestic animals; and introduction of invasive plant species that could result in habitat degradation. On-site wetlands and other waters would be indirectly affected by substantial grading and creation of impervious surfaces proposed for adjacent uplands. All portions of the project area would be subject to contour grading, which could affect wetland hydrology and water quality. Overall site topography would be substantially altered to achieve level ground for development. These earthmoving activities and resulting gradient changes across the project area could alter hydrologic patterns and adversely affect wetlands and drainage channels retained within the SPA, as well as off-site wetlands, by altering hydration periods, peak flows, runoff volumes, and runoff durations.

The loss and degradation of USACE jurisdictional vernal pools and other wetland habitats and other waters of the U.S. (e.g., ponds and drainage channels) that would occur with project implementation constitutes a substantial adverse effect on Federally jurisdictional waters of the U.S., including wetlands, as defined by Section 404 of the CWA. Removal of 0.17 acres non USACE jurisdictional wetlands in the project area constitutes an adverse effect on waters of the state subject to Central Valley RWQCB jurisdiction.

As a result, the implementation of the proposed project would have a ***significant direct and indirect*** impact to any riparian habitat, seasonal wetlands, or vernal pools.

Mitigation Measure(s)

4.3.3A ***Design Stormwater Drainage Plans and Erosion and Sediment Control Plans to Avoid and Minimize Erosion and Runoff to All Wetlands and Other Waters That Are to Remain in the Project Area and Use Low Impact Development Features***

To minimize indirect effects on water quality and wetland hydrology, the project applicant(s) shall include a stormwater drainage plan and an erosion and sediment control plan in the improvement plans and shall submit these plans to the City Public Works Department for review and approval. Before approval of these improvement plans, the project applicant(s) shall obtain a NPDES MS4 Municipal Stormwater Permit and Grading Permit, comply with the City's Grading Ordinance and County drainage and stormwater quality standards, and commit to

implementing all measures in their drainage plans and erosion and sediment control plans to avoid and minimize erosion and runoff into Alder Creek and all wetlands and other waters that would remain on-site

The project applicant(s) shall implement stormwater quality treatment controls consistent with the Stormwater Quality Design Manual for Sacramento and South Placer Regions (Sacramento Stormwater Quality Control Partnership 2007). Appropriate runoff controls such as berms, storm gates, off-stream detention basins, overflow collection areas, filtration systems, and sediment traps shall be implemented to control siltation and the potential discharge of pollutants. Development plans shall incorporate Low Impact Development (LID) features, such as pervious strips, permeable pavements, bioretention ponds, vegetated swales, disconnected rain gutter downspouts, and rain gardens, where appropriate. Use of LID features is recommended by the EPA to minimize impacts on water quality, hydrology, and stream geomorphology. In addition, free spanning bridge systems shall be used for all roadway crossings over wetlands and other waters that are retained in the on-site open space. These bridge systems would maintain the natural and restored channels of creeks, including the associated wetlands, and would be designed with sufficient span width and depth to provide for wildlife movement along the creek corridors even during high-flow or flood events.

In addition to compliance with City ordinances, the project applicant shall obtain a General Construction Stormwater Permit from the Central Valley RWQCB, prepare a Stormwater Pollution Prevention Plan (SWPPP), and implement Best Management Practices (BMPs) to reduce water quality effects during construction.

Each project phase shall result in no net change to peak flows into Alder Creek and associated tributaries, or to Buffalo Creek, Carson Creek, and Coyote Creek. The project applicant shall establish a baseline of conditions for drainage on-site. The baseline-flow conditions shall be established for 2-, 5-, 10-, and 20-year storm events. These baseline conditions shall be used to develop monitoring standards for the stormwater system within the project area. The baseline conditions, monitoring standards, and a monitoring program shall be submitted to USACE and the City for their approval. Water quality and detention basins shall be designed and constructed to ensure that the performance standards are met and shall be designed as off-stream detention basins. Discharge sites into Alder Creek and associated tributaries, as well as tributaries to Carson Creek, Coyote Creek, and Buffalo Creek, shall be monitored to ensure that pre-project conditions are being met. Corrective measures shall be implemented as necessary. The mitigation measures will be satisfied when the monitoring standards are met for 5 consecutive

years without undertaking corrective measures to meet the performance standard.

4.3.3B ***Secure Amended Clean Water Act Section 404 Permit and Section 401 Permit and Implement All Permit Conditions; Ensure No Net Loss of Functions of Wetlands, Other Waters of the U.S., and Waters of the State***

Before the approval of grading and improvement plans and before any groundbreaking activity associated with each distinct project phase, the project applicant(s) shall amend all necessary permits obtained under Sections 401 and 404 of the CWA or the state's Porter-Cologne Act for the original backbone infrastructure, if necessary. All amended and/or revised permits, regulatory approvals, and permit conditions for effects on wetland habitats shall be secured before implementation of any grading activities within 250 feet of waters of the U.S. or wetland habitats, including waters of the state, that potentially support Federally listed species, or within 100 feet of any other waters of the U.S. or wetland habitats, including waters of the state. The project applicant shall adhere to all conditions outlined in the amended and/or revised permits. The project applicant shall commit to replace, restore, or enhance on a "no net loss" basis (in accordance with USACE and the Central Valley RWQCB) the acreage of all wetlands and other waters of the U.S. that would be removed, lost, and/or degraded with implementation of project plan. Wetland habitat shall be restored, enhanced, and/or replaced at an acreage and location and by methods agreeable to USACE, the Central Valley RWQCB, and the City, as appropriate, depending on agency jurisdiction, and as determined during the Section 401 and Section 404 permitting processes.

As identified in the original Section 404 permit, compensation for the loss of waters of the U.S. shall occur through the purchase of mitigation credits from the Cosumnes Floodplain Mitigation Bank and/or the Toad Hill Mitigation bank at the following compensation to impact ratios for aquatic resources, unless otherwise revised in the amended section 404 permit:

- *For loss of jurisdictional ditches, ponds, and marshes, purchase floodplain mosaic re-establishment credits from the Cosumnes Floodplain Mitigation Bank at a ratio of 1:1;*
- *For loss of creeks/channels and intermittent drainages located in the Lower American River watershed (018020111), purchase floodplain riparian re-establishment credits from the Cosumnes Floodplain Mitigation Bank at a ratio of 2:1;*
- *For loss of creeks/channels and intermittent drainages located in the Upper Cosumnes River (18040013), purchase floodplain*

riparian re-establishment credits from the Cosumnes Floodplain Mitigation Bank at a ratio of 1:1;

- *For loss of seasonal wetlands and seasonal wetland swales located in the Lower American River watershed (018020111), purchase floodplain mosaic re-establishment credits from the Cosumnes Floodplain Mitigation Bank at a ratio of 1.3:1;*
- *For loss of seasonal wetlands and seasonal wetland swales located in the Upper Cosumnes River (18040013), purchase floodplain mosaic re-establishment credits from the Cosumnes Floodplain Mitigation Bank at a ratio of 1:1;*
- *For loss of seasonal wetlands and seasonal wetland swales located in the Lower American River watershed (018020111), purchase floodplain mosaic re-establishment credits from the Cosumnes Floodplain Mitigation Bank at a ratio of 4:1;*
- *For loss of seeps located in the Upper Cosumnes River (18040013), purchase floodplain mosaic re-establishment credits from the Cosumnes Floodplain Mitigation Bank at a ratio of 3:1;*
- *For the loss of vernal pools, purchase creation credits from the Toad Hill Mitigation Bank at a ratio of 1:1.*

All mitigation requirements to satisfy the requirements of the City and the Central Valley RWQCB, for impacts on the non-jurisdictional wetlands beyond the jurisdiction of USACE, shall be determined and implemented before grading plans are approved.

An amended Water quality certification pursuant to Section 401 of the CWA will be required before issuance of the record of decision and before issuance of the amended Section 404 permit. Before construction in any areas containing wetland features, the project applicant(s) shall obtain water quality certification for the project. Any measures required as part of the issuance of water quality certification shall be implemented.

Implementation of the above mitigation measures would reduce the proposed project's potential impacts to the loss and degradation of Waters of the U.S., including wetlands, and Waters of the State to a ***less-than-significant*** level by requiring appropriate compensation for loss of waters of the U.S. and waters of the state.

Other Natural Communities

The project area supports riparian habitat. Project implementation would result in removal of riparian habitat associated with Alder Creek and its tributaries. The total amount of riparian habitat within the project area has not been quantified yet.

Potential indirect impacts on riparian habitat include degradation caused by pollutants transported by urban runoff, changes in vegetation as a result of changes in land use and management practices, altered site hydrology from the construction of adjacent roadways, and the introduction of invasive species or noxious weeds from the surrounding development, and intrusion by humans and domestic animals that could disturb riparian vegetation and reduce habitat values.

The project area may also support valley needlegrass grassland, a community identified as sensitive by CDFW and tracked in the CNDDB. Although plant communities in the project area were mapped by ECORP, valley needlegrass grassland blends in with annual grassland and often occurs as small patches in large expanses of annual grassland. For this reason it is easily overlooked unless someone is specifically searching for it and may be present in patches too small to have been identified at the coarse scale that upland habitats were mapped. Valley needlegrass grassland has been identified on several properties within the SPA, but has not been quantified within the project area. If present, valley needlegrass grassland could be removed as a result of project implementation. The loss and degradation of valley needlegrass grassland that would occur with project implementation constitutes an adverse effect on a sensitive natural community regulated by CDFW under Section 1602 of the California Fish and Game Code. Therefore, a ***direct and indirect significant impact*** would result.

The loss of valley needlegrass grassland would be an adverse effect on a sensitive natural community. Because it is unknown if this community is present within the project area, this is considered a ***potentially significant direct impact***.

Mitigation Measure(s)

4.3.3C ***Implement Section 1602 Master Streambed Alteration Agreement***

The project applicant(s) shall amend, if necessary, and implement the original Section 1602 Master Streambed Alteration Agreement received from CDFW for all construction activities that would occur in the bed and bank of Alder Creek and other drainage channels and ponds within SPA. As outlined in the Master agreement, the project applicant(s) shall submit a Subnotification Form (SNF) to CDFW 60 days prior to the commencement of construction to notify CDFW of the project.

Any conditions of issuance of the Master Streambed Alteration Agreement shall be implemented as part of project construction activities that adversely affect the bed and bank and riparian habitat associated with Alder Creek and other drainage channels and ponds that are within the project area that is subject to CDFW jurisdiction. The agreement shall be executed by the project applicant(s) and CDFW before the approval of any grading or improvement plans or any construction activities in any project phase that could potentially affect the bed and bank of Alder Creek

and other on-site or off-site drainage channels under CDFW jurisdiction and their associated freshwater marsh and riparian habitat.

4.3.3d ***Conduct Surveys to Identify and Map Valley Needlegrass Grassland; Implement Avoidance and Minimization Measures or Compensatory Mitigation***

The project applicant(s) shall retain a qualified botanist to conduct preconstruction surveys to determine if valley needlegrass grassland is present within the project area. This could be done concurrently with any special-status plant surveys conducted on-site as special-status plant surveys are floristic in nature, i.e. require that all species encountered be identified. If valley needlegrass grassland is not found within the project area, the botanist shall document the findings in a letter report to the City of Folsom, and no further mitigation shall be required.

If valley needlegrass grassland is found within the project area, the location and extent of the community shall be mapped and the acreage of this community type, if any, that would be removed by project implementation shall be calculated. The project applicant(s) shall consult with CDFW and the City of Folsom to determine appropriate mitigation for removal of valley needlegrass grassland resulting from project implementation. Mitigation measures may include establishment of valley needlegrass grassland within project's open space areas currently characterized by annual grassland, establishment of valley needlegrass grassland off-site, or preservation and enhancement of existing valley needlegrass grassland either on or off the project area.

Implementation of the above mitigation measures would reduce impacts to riparian habitat and valley needlegrass grassland habitat associated with project construction to a *less-than-significant* level by requiring appropriate compensation for riparian habitat and surveys for valley needlegrass grassland habitat.

4.3.4 Loss of Blue Oak Woodland and Individual Oak Trees. Based on the analysis below with the implementation of mitigation, the impact is *less than significant*

Implementation of the project would result in the removal or disturbance of approximately 102.780 acres of blue oak woodland habitat. However, oak woodland within the off-site elements has not been quantified.

Development of the project would also involve contour grading, mitigation planting, road and trail development, and creation of impervious surfaces within and immediately adjacent to SPA's open space areas containing protected oak trees. These activities could result in indirect impacts affecting oak tree root

systems such as trenching, grading, soil compaction, placement of fill, impervious surfaces, irrigation, and landscaping within the drip lines of oak trees, which can lead to root damage ultimately resulting in death of the tree. Additional indirect impacts could result from habitat fragmentation, introduction of invasive species or noxious weeds, vegetation management practices (e.g., clearing for fire control), and intrusion by humans and domestic animals that could disturb oak woodland vegetation and reduce habitat values. Removal of blue oak woodland and individual oak trees and other trees meeting minimum DBH criteria would conflict with local ordinances, specifically Folsom Municipal Code, as would damage to the root zones of protected trees that leads to eventual death of the trees. Furthermore, blue oak woodland is considered a sensitive natural community by CDFW and California Public Resources Code 21083.4 requires counties to consider the environmental effects of oak woodland conversion. Therefore, a ***direct and indirect significant*** impact would result.

Mitigation Measure(s)

4.3.4A ***Conduct Tree Survey, Prepare and Implement an Oak Woodland Mitigation Plan, Replace Native Oak Trees Removed, and Implement Measures to Avoid and Minimize Indirect Impacts on Oak Trees and Oak Woodland Habitat Retained On Site***

The project applicant(s) shall prepare an oak woodland mitigation and monitoring plan and adhere to the requirements outlined in California Public Resources Code 21083.4. Pursuant to Sacramento County General Plan policy, the acreage of oak woodland habitat for determining impacts and mitigation requirements shall be calculated as the oak tree canopy area within stands of oak trees having greater than 10% cover plus a 30-foot-radius buffer measured from the outer edge of the tree canopy. Oak trees located in areas greater than 30 feet from stands meeting the greater than 10% tree canopy cover criterion shall be considered isolated trees and not part of the blue oak woodland community.

Mitigation for impacts to oak woodland habitat shall include:

- *Following ground verification by certified arborist of the oak woodland habitat on-site, preservation of existing oak woodlands*
- *Creation of new oak woodland on-site in pre-approved locations. Follow the oak woodland mitigation planting criteria outlined in California Public Resources Code 21083.4.*
- *Preserve and protect existing off-site oak woodland habitat. Existing, unprotected oak woodland habitat within Sacramento may be secured and placed under*

conservation easement in lieu of onsite mitigation measures if necessary. The off-site locations would be managed as oak woodland habitat in perpetuity.

- *Create oak woodlands off site. Plant a combination of blue oak acorns, seedlings, and trees at off-site location(s), if needed to achieve the creation goal determined by the mitigation plan of new blue oak woodland habitat. Off-site creation shall follow the same guidelines as outlined in the Mitigation Planting Criteria for on-site creation. Off-site tree planting shall occur at sites within Sacramento County that should naturally support blue oak woodland and shall be used to restore former blue oak woodland habitat that has been degraded or removed through human activities. Restoration shall be designed to result in species composition and densities similar to those within the project area prior to project development. Planted areas shall be placed under conservation easement and managed as oak woodland habitat in perpetuity.*
- *The oak woodland mitigation plan prepared by the project applicant(s) shall include a maintenance and monitoring program for any replacement trees. The program shall include monitoring and reporting requirements, schedule, and success criteria. Replacement oak trees shall be maintained and monitored for a minimum of eight years from the date of planting and irrigation shall be provided to planted trees for the first five years after planting. Any replacement trees that die during the monitoring period shall be replaced. The mitigation planting site must achieve 80% survival of planted trees by the end of the eight-year maintenance and monitoring period or dead and dying trees shall be replaced and monitoring continued until 80% survivorship is achieved. Security acceptable to the City and sufficient to cover maintenance and monitoring costs for eight years shall be provided to the City Planning Department. The security will be forfeited if the project applicant or designated responsible party fails to provide maintenance and monitoring and meet the success criteria.*

The project applicant(s) for areas containing individual trees that will be impacted shall develop a map depicting the tree canopy of all oak trees in the survey area and identifying the acreage of tree canopy that would be preserved and the acreage that would be removed. A tree permit for

removal of isolated oak trees (those not located within the delineated boundary of oak woodland habitat) shall be obtained from the City Planning Director. As a condition of the tree removal permit, project applicant(s) shall be required to develop a Planting and Maintenance Agreement. The City's Tree Preservation Code requires compensatory mitigation and the City and the project applicant(s) have developed a plan, as set forth Section 10 of the Folsom Plan Area Specific Plan specifically to avoid and minimize adverse effects on individual oak trees from project development and to provide compensatory mitigation for removal of protected trees within the project area. In addition to the language contained in the Folsom Plan Area Specific Plan, the following elements shall be included in a protected tree mitigation plan to be developed by the project applicant(s) and agreed upon by the City:

- *Project applicant(s) shall retain a certified arborist or registered professional forester to perform a determinate survey of tree species, size (dbh), condition, and location for all areas of the project site proposed for tree removal and encroachment of development. The condition of individual trees shall be assessed according to the American Society of Consulting Arborists rating system with the following added explanations:*
    - *5 = Excellent; No problems – tree has no structural problems, branches are properly spaced and tree characteristics are nearly perfect for the species.*
    - *4 = Good; No apparent problems – tree is in good condition and no apparent problems from visual inspection. If potential structural or health problems are tended at this stage, future hazard can be reduced and more serious health problems can be averted.*
    - *3 = Fair; Minor problems – There are some minor structural or health problems that pose no immediate danger. When the recommended actions in an arborist report are completed correctly the defect(s) can be minimized or eliminated.*
    - *2 = Poor; Major problems – the tree is in poor condition, but the condition could be improved with correct arboricultural work including, but not limited to: pruning, cabling, bracing, bolting, guying, spraying, mistletoe removal, vertical mulching, and fertilization. If the recommended actions are completed correctly, hazard can be reduced and the rating can be elevated to a 3. If no action is taken the tree is considered a liability and should be removed.*
    - *1 = Hazardous or non-correctable condition – the tree is in extremely poor condition and in nonreversible decline. This rating is assigned to a tree that has structural and/or health problems that no amount of*

tree care work or effort can change. The issues may or may not be considered a dangerous situation. The tree may also be infested with a disease or pest(s) that is noncontrollable at this time and is causing an unacceptable risk of spreading the disease or pests(s) to other trees.

- *0 = Dead – the tree has no significant signs of life (dead or very close to being dead).*

- *The determination for whether an individual tree shall be preserved, removed without compensation, or removed with compensatory mitigation shall be based on the condition and size of the tree as follows:*
  - *Trees rated 0 or 1 may be removed with no mitigation.*
  - *Trees rated 2 may be removed at 50% of the normal Folsom Municipal Code mitigation.*
  - *Trees rated 3, 4, and/or 5 may be removed at the normal Folsom Municipal Code mitigation.*
  - *Native oaks measuring 24 inches or greater dbh for a single trunk or 40 inches or more for a multi-trunked tree and rated a 4 or 5 shall be retained. Trees of this size but having a rating of 2 or 3 shall not be removed or mitigated, unless retaining wall(s) higher than 4 feet tall (from bottom of footing to the top of the wall) would be required to protect the tree(s) from mass grading within the project area.*
  - *Native oaks measuring between 12 and 24 inches dbh and rated a 4 or 5 shall not be removed or mitigated unless wall(s) would need to be built that are higher than 4 feet tall (from bottom of footing to the top of the wall) would be required to protect the tree(s) from mass grading within the project area. Trees in this size class but rated 2 or 3 shall not be removed unless unreasonable costs to save the tree(s) (greater than the normal Folsom Municipal Code mitigation) would result.*
  - *Native oaks measuring 5 inches or greater dbh but less than 12 inches dbh shall not be removed unless unreasonable costs to save the tree(s) (greater than the normal Folsom Municipal Code mitigation) would result.*
  - *Native oak trees measuring 1 inch or greater dbh but less than 5 inches dbh may be preserved to receive a Small Tree Preservation Credit (STPC). Any tree that is to be considered for preservation credit shall be evaluated, included in the arborist report, and shall have been found to be rated a 3, 4, or a 5. Credits shall*

only be accepted if the tree protection zone (TPZ) (i.e., the outer edge of the tree canopy drip line) is protected with fencing in the exact manner that 5 inches dbh and greater trees are protected on a construction site, and the spacing is equal to the proper tree spacing dictated by the Folsom Master Tree List. STPC shall not count if they the tree is in a poor growing space due to its position within the TPZ of another protected tree to be preserved. The City shall accept the preservation of native oak trees in this size class as credit towards the total removed inches based on the following STPC criteria:

Caliper of Tree Preserved	Mitigation Tree Credit Equivalent
1 inch or greater, but less than 2 inches	One #15 tree or two #5 container trees
2 inches or greater, but less than 3 inches	Two #15 container trees
3 inches or greater, but less than 4 inches	Tree #15 container trees
4 inches or greater, but less than 5 inches	Four #15 container trees

- *Folsom Municipal Code requires one of the following be planted as compensation for each diameter inch of protected tree removed:*
  - *half of a 24-inch box tree;*
  - *one #15 container tree;*
  - *two #5 container trees; or*
  - *$150 in-lieu payment or other fee set by City Council Resolution.*
- *The Planting and Maintenance Agreement shall include a planting plan, planting and irrigation design details, and a weaning schedule for the establishment period. The plan shall include a 5-year establishment period for trees and 8 years for planted acorns with an annual monitoring report that includes corrections needed with proposed work plan, and notice of compliance within 90-days of annual monitoring report. Security in a form acceptable to the City and sufficient to cover maintenance and monitoring costs for eight years shall be provided to the City Planning Department. The security will be forfeited if the project applicant or designated responsible party fails to fulfill the Planting and Maintenance Agreement.*
- *To avoid and minimize indirect impacts on protected trees to remain within the project area, the project applicant(s) shall install high visibility fencing outside the outer edge of the drip lines of all trees to be retained within the project area during*

project construction. The fencing may be installed around groups or stands of trees or whole wooded areas, but must be installed so that the drip lines of all trees are protected. Grading, trenching, equipment or materials storage, parking, paving, irrigation, and landscaping shall be prohibited within the fenced areas (i.e. drip lines of protected trees). If the activities listed cannot be avoided within the drip line of a particular tree, that tree shall be counted as an affected tree and compensatory mitigation shall be provided, or the tree in question shall be monitored for a period of five years and replaced only if the tree appears to be dead or dying within five years of project implementation.

Through a combination of the mitigation options presented above along with the proposed on-site preservation of blue oak woodland habitat in the open space areas, the project applicant(s) can satisfy the mitigation requirements for removal of trees protected under the Folsom Municipal Code while also mitigating the impacts on oak woodland habitat, as determined through consultation with the Sacramento County Planning Department and the City of Folsom.

Implementation of the above mitigation measures would reduce impacts blue oak woodland and individual oak trees associated with project construction to a ***less-than-significant*** level.

4.3.5 Potential Interference with Wildlife Movement. Based on the analysis provided below, this impact is considered *less-than-significant.*

Wildlife corridors are features that provide connections between two or more areas of habitat that would otherwise be isolated and unusable. Often drainages, creeks, or riparian areas are used by wildlife as movement corridors as these features can provide cover and access across a landscape. Alder Creek flows northwesterly from White Rock Road to Prairie City Road within the SPA. It is unknown the extent to which this creek corridor is used by wildlife in the area for movement. However, most of the Alder Creek corridor is not included in the project area. Other drainage features within the project area do not support riparian vegetation cover and therefore do not provide valuable movement corridors. Annual grassland habitat present to the south of the SPA is currently used as rangeland and would remain undeveloped in the foreseeable future based on zoning under the Sacramento County General Plan. This adjacent open space provides opportunities for wildlife to move around developed areas to preserved open spaces within the SPA and to use the Alder Creek corridor to move across the project area.

Areas to the north and east of the SPA are already developed and do not provide natural habitat areas for wildlife. Regionally common wildlife species, such as coyote, fox, raccoon, skunk, and possum, are expected to continue to use the

Alder Creek corridor after project implementation. There are no established migratory routes through the project area that are vital for the movement of any resident or migratory fish or wildlife species or population. Therefore, ***direct and indirect*** impacts on wildlife movement from the project are considered ***less than significant***.

4.3.6 **Conflict with an Adopted Habitat Conservation Plan. Based on the analysis provided below, this impact is *less than significant.***

The South Sacramento Habitat Conservation Plan (SSHCP) is being prepared by the County of Sacramento. Project consistency with the SSHCP is not required under CEQA because the SSHCP has not been adopted. Furthermore, the proposed planning area for the SSHCP does not include the project area according to the notice of preparation issued on October 28, 2013 for the SSHCP EIR. Implementation of the project, including off-site elements, would not reduce the effectiveness of the proposed SSHCP's conservation strategy or adversely affect attainment of the goals and objectives of the SSHCP because the project are not included in the planning area and the SSHCP is not adopted. Therefore, there is no conflict with any adopted HCPs and ***no direct or indirect impacts*** would occur.

Cumulative Impacts and Mitigation Measures

The following discussion of impacts is based on the implementation of the proposed project in combination with other proposed and pending projects in the region. Other proposed and pending projects in the region under the cumulative context would include buildout of the City's General Plan, as well as development of the most recent planned land uses within the vicinity of the project area, including the Folsom Plan Area Specific Plan (Specific Plan).

4.3-4 Cumulative loss of biological resources. Based on the analysis below, the cumulative impact is *less than significant.*

There are several large-scale development projects in the general vicinity of the project including western El Dorado County, eastern Sacramento County and the City of Folsom. In addition, the backbone infrastructure project is part of the long-term build out of the SPA. The geographic extent of cumulative impacts on wetlands (e.g., vernal pools, seasonal wetland swales, seeps) and other waters of the U.S. (e.g., perennial and intermittent drainage channels), oak woodlands, and biological resources associated with these habitats includes the vernal pool and blue oak woodland regions of El Dorado County, Sacramento County, and neighboring counties that support similar biological resource values and functions to those of the project area.

Planned and proposed projects within El Dorado County, Sacramento County, and the City of Folsom are anticipated to have substantial cumulative losses of wetlands (vernal pools, seasonal wetlands, and swales) and other waters of the U.S (intermittent and ephemeral drainages). Wetlands and other waters of the U.S. provide habitat for special-

status species. In addition, these projects would result in substantial cumulative losses of annual grassland and oak woodland habitats that support several special-status species. All projects with impacts to biological resources would contribute to the regional loss of aquatic, oak woodland and annual grassland habitats and special-status species. These projects would be required to implement project-specific mitigation measures to mitigate impacts to biological resources, including impacts to wetlands and other waters of the U.S., oak woodlands, and special-status species.

The backbone infrastructure project would contribute to the regional loss of aquatic habitats that support special-status species, which could contribute to the incremental decline of these species. The backbone infrastructure project also contributes to the regional loss of blue oak woodlands, which supports plant and wildlife species and functions in carbon sequestration. In addition, the backbone infrastructure project would result in the regional loss of annual grassland, resulting in a loss of foraging habitat for raptors and wildlife species and nesting habitat for burrowing owl.

Full build out of the SPA, including the backbone infrastructure, would result in impacts to biological resources; however, impacts would be reduced through designation of open space preserves within the SPA. There are approximately 85 acres of aquatic habitat, including vernal pools and other seasonal wetlands, seeps, ponds, and stream channels within the SPA. The SPA, as a whole, includes approximately 1,000 acres of open space preserve, and the majority of aquatic habitat on-site would be preserved in designated open space preserves. The preserved areas would include the Alder Creek corridor located in the northwestern portion of the SPA. There is approximately 949 acres of blue oak woodland within the SPA, and approximately 444 acres (47%) would be preserved within designated open space preserves. The designation of open space areas to preserve aquatic and blue oak woodland habitats would support special-status species on-site and in the vicinity of the SPA. Preservation of aquatic and blue oak woodland habitats on-site would contribute to reducing the Specific Plan's contribution, including the backbone infrastructure, to regional cumulative loss of biological resources.

The individual property owners (project applicants) within the SPA, including the backbone infrastructure project, will also be responsible for implementing project-specific mitigation measures to reduce impacts to biological resources. As discussed above in Project-Specific Impacts and Mitigation Measures, all potentially significant impacts to biological resources for the backbone infrastructure project can be mitigated to a less than significant level. As part of the required mitigation, all impacts to wetlands and waters of the U.S. must be compensated for through on-site preservation and purchasing of off-site mitigation bank credits. The backbone infrastructure project would compensate for all impacts to wetlands and waters of the U.S. through purchasing of off-site mitigation bank credits at ratios designated by the USACE. In addition, mitigation measures *4.3.1, 4.3.2A, 4.3.2B, 4.3.2C, 4.3.2D, 4.3.2E and 4.3.2F* would reduce the backbone infrastructures impacts to special-status species to less than significant. Mitigation measures for individual projects within the SPA have not yet been determined; however, it is likely the project applicants would be required to implement similar mitigation measures to reduce impacts to biological resources.

There are several planned projects within the region, including the Specific Plan, which will contribute to regional loss of biological resources. However, the Specific Plan, including the backbone infrastructure, incorporates a combination of habitat preservation and project-specific mitigation to reduce impacts to biological resources. As a result, the project's incremental contribution to the cumulative biological impact related to increasing urbanization would be ***less than significant***.

Mitigation Measure(s)
None required.

Bibliography

[Folsom and USACE] City of Folsom and U.S. Army Corps of Engineers
2010 Folsom South of U.S. 50 Specific Plan Project Draft EIR/EIS Vol. I. June 2010.

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2014 Formal Consultation on the Proposed Folsom Plan Area Specific Plan Project (Corps # SPK-2007-02159), Sacramento County, California. USFWS Reference # 81420-2010-F-0620-1. April 2, 2014.

Table 1. Special-Status Species

Common Name	Scientific Name	Federal ESA Status	California ESA Status	Other Status	Habitat Description	Approximate Survey Dates	Potential To Occur On-Site
Plants							
Big scale balsamroot	*Balsamorhiza macrolepis* var. *macrolepis*	-	-	1B.2	Chaparral, cismontane woodland and valley and foothill grassland. Sometimes on serpentine.	March-June	Low potential to occur - Suitable habitat available in grasslands and oak woodland; however, the probability of occurrence is low because typically found on serpentine soils. May occur within areas of the backbone infrastructure that have not been surveyed.
Hispid bird's beak	*Cordylanthus mollis* ssp. *hispidus*	-	-	1B.1	Alkaline meadows, seeps, and playas (0' - 500").	June-September	Absent - No habitat.
Dwarf downingia	*Downingia pusilla*	-	-	2.2	Vernal pools or other seasonal wetlands in annual grasslands (0' - 1,500').	March-May	Potential to occur - Surveys have been conducted on all but the following properties: Javanifard and Zarghami, Folsom Heights and the new off-site infrastructure areas. This species has not been documented within the portions of the project area that have been surveyed. There is potential that it can occur within the areas of the backbone infrastructure that have not been surveyed.
Tuolumne button-celery	*Eryngium pinnaisectum*	-	-	1B.2	Vernal pools or other seasonal wetlands in cismontane woodland and lower montane coniferous forest (200' - 3,000').	June-August	Low potential to occur - Species does not occur within the vicinity of the project area. Surveys have been conducted on all but the following properties: Javanifard and Zarghami, Folsom Heights and the new off-site infrastructure areas. This species has not been documented within the portions of the project area that have been surveyed. There is potential that it can occur within the areas of the backbone infrastructure that have not been surveyed.
Bogg's Lake hedge hyssop	*Gratiola heterosepala*	-	-	1B.2	Lake marine marshes and swamps, vernal pools, and other seasonal wetlands, primarily in clay soils (30' - 8,000').	April-August	Potential to occur - Surveys have been conducted on all but the following properties: Javanifard and Zarghami, Folsom Heights and the new off-site infrastructure areas. This species has not been documented within the portions of the project area that have been surveyed. There is potential that it can occur within the areas of the backbone infrastructure that have not been surveyed.
Ahart's dwarf rush	*Juncus leiospermus* var. *ahartii*	-	-	1B.2	vernal pools and swales in areas of low cover of competing vegetation; most often on gopher turnings along margins of pools (95' - 750').	March-May	Potential to occur - Surveys have been conducted on all but the following properties: Javanifard and Zarghami, Folsom Heights and the new off-site infrastructure areas. This species has not been documented within the portions of the project area that have been surveyed. There is potential that it can occur within the areas of the backbone infrastructure that have not been surveyed.
Red Bluff dwarf rush	*Juncus leiospermus var. leiospermus*	-	-	1B.1	Vernal pools, meadows and seeps, and other seasonally wet habitats (115' - 3,500').	March-May	Absent - Sacramento and El Dorado counties are outside the range for this species.

Table 1. Special-Status Species

Common Name	Scientific Name	Federal ESA Status	California ESA Status	Other Status	Habitat Description	Approximate Survey Dates	Potential To Occur On-Site
Legenere	*Legenere limosa*	-	-	1B.1	Relatively deep and wet vernal pools (0' - 3,000').	April-June	Potential to occur - Surveys have been conducted on all but the following properties: Javanifard and Zarghami, Folsom Heights and the new off-site infrastructure areas. This species has not been documented within the portions of the project area that have been surveyed. There is potential that it can occur within the areas of the backbone infrastructure that have not been surveyed.
Pincushion navarretia	*Navarretia meyersii* ssp. *meyersii*	-	-	1B.1	Vernal pools (65' - 750').	May	Potential to occur - Surveys have been conducted on all but the following properties: Javanifard and Zarghami, Folsom Heights and the new off-site infrastructure areas. This species has not been documented within the portions of the project area that have been surveyed. There is potential that it can occur within the areas of the backbone infrastructure that have not been surveyed.
Sanford's arrowhead	*Sagitarria sanfordii*	-	-	1B.2	Marshes and swamps (assorted shallow freshwater) (0-2,133').	May-October	Potential to occur - Surveys have been conducted on all but the following properties: Javanifard and Zarghami, Folsom Heights and the new off-site infrastructure areas. This species has not been documented within the portions of the project area that have been surveyed. There is potential that it can occur within the areas of the backbone infrastructure that have not been surveyed.
Slender Orcutt grass	*Orcuttia tenuis*	FT	CE	1B.1	Vernal pools (100' - 5,800').	May-October	Potential to occur - Surveys have been conducted on all but the following properties: Javanifard and Zarghami, Folsom Heights and the new off-site infrastructure areas. This species has not been documented within the portions of the project area that have been surveyed. There is potential that it can occur within the areas of the backbone infrastructure that have not been surveyed.
Sacramento Orcutt grass	*Orcuttia viscida*	FE	CE	1B.1	Vernal pools (98' - 328').	April-September	Potential to occur - Surveys have been conducted on all but the following properties: Javanifard and Zarghami, Folsom Heights and the new off-site infrastructure areas. This species has not been documented within the portions of the project area that have been surveyed. There is potential that it can occur within the areas of the backbone infrastructure that have not been surveyed.
Invertebrates							
Valley elderberry longhorn beetle	*Desmocerus californicus dimorphus*	FPD	-	-	Elderberry shrubs, typically in riparian habitats (0' - 3,000).		Potential to occur - Surveys have been conducted on all but the following properties: Javanifard and Zarghami, Folsom Heights and the new off-site infrastructure areas. This species has not been documented within the portions of the project area that have been surveyed. There is potential that it can occur within the areas of the backbone infrastructure that have not been surveyed.

Table 1. Special-Status Species

Common Name	Scientific Name	Federal ESA Status	California ESA Status	Other Status	Habitat Description	Approximate Survey Dates	Potential To Occur On-Site
Vernal pool fairy shrimp	*Branchinecta lynchi*	FT	-	-	Vernal pools and other seasonal wetlands in valley and foothill grasslands.		Known to occur within the SPA. Surveys have been conducted for all properties within the SPA and off-site infrastructure areas except for the following properties: Javanifard and Zarghami, Folsom Heights and the new off-site infrastructure areas. This species was documented within the Prairie City Road Business Park property and may occur within unsurveyed portions of the backbone infrastructure.
Vernal pool tadpole shrimp	*Lepidurus packardi*	FE	-	-	Vernal pools and other seasonal wetlands in valley and foothill grasslands.		Known to occur within the SPA. Surveys have been conducted for all properties within the SPA and off-site infrastructure areas except for the following properties: Javanifard and Zarghami, Folsom Heights and the new off-site infrastructure areas. This species was documented within a vernal pool in the off-site infrastructure area and it may occur within unsurveyed portions of the backbone infrastructure.
Conservancy fairy shrimp	*Branchinecta conservatio*	FE	-	-	Vernal pools and other seasonal wetlands in valley and foothill grasslands.		Potential to occur - Surveys have been conducted on all but the following properties: Javanifard and Zarghami, Folsom Heights and the new off-site infrastructure areas. This species has not been documented within the portions of the project area that have been surveyed. There is potential that it can occur within the areas of the backbone infrastructure that have not been surveyed.
Amphibians							
California tiger salamander (Central California DPS)	*Ambystoma californiense*	FT	CT	CSC, CNDDB	Uses vernal pools, wetlands and adjacent grassland or oak woodland; needs underground refuge, usually ground squirrel or gopher burrows. Uses vernal pools, ponds, and seasonal wetlands for breeding. Largely terrestrial as adults	March-May	Absent - nearest known occurrence is 15 miles to the south and exensive surveys in the project vicinity have not detected the species north of Cosumnes River (USFWS 2004).
Western spadefoot	*Spea hammondii*	-	-	CSC	Vernal pools and other seasonal ponds with a minimum 3-week inundation period in valley and foothill grasslands.	March-May	Potential to occur - Suitable habitat available on-site. Nearest documented occurrences are more than 5 miles away in Roseville, Phoenix Park, and Mather park areas.
California red-legged frog	*Rana draytonii*	FT	-	CSC, CNDDB	Currently occurs in lowlands or foothills at waters with dense shrubby or emergent riparian vegetation. Larvae require 11 to 20 weeks to transform, sometimes overwintering. Adults must have aestivation habitat to endure summer dry down.	May-November	Absent - presumed extirpated from the valley floor. Nearest reproducing population is 30 miles east near Pollock Pines.
Reptiles							
Western pond turtle	*Actinemys marmorata*	-	-	CSC, CNDDB	Forage in ponds, marshes, slow-moving streams, sloughs, and irrigation/drainage ditches; nest in nearby uplands with low, sparse vegetation.	April-October	Present, Known to occur - Documented in an on-site pond (The Hodgson Company 2007a) and less than 1 mile downstream of the project area (GenCorp 2007c), within Alder Creek.

Table 1. Special-Status Species

Common Name	Scientific Name	Federal ESA Status	California ESA Status	Other Status	Habitat Description	Approximate Survey Dates	Potential To Occur On-Site
Giant garter snake	*Thamnophis gigas*	FT	CT	CSC, CNDDB	Slow-moving streams, sloughs, ponds, marshes, inundated floodplains, rice fields, and irrigation/drainage ditches on the Central Valley floor with mud bottoms, earthen banks, emergent vegetation, abundant small aquatic prey and absence of low numbers of large predatory fish. also require upload refugia not subject to flooding during the snake's		Absent - No habitat; out of known range.
Birds							
White-tailed kite (nesting)	*Elanus leucurus*	-	-	CFP	woodland, grassland	March-June	Potential to occur - Suitable grassland foraging habitat and suitable nest trees present in blue oak woodland and riparian areas. Several CNDDB-documented nest sites in project vicinity
Northern harrier (nesting)	*Circus cyaneus*	-	-	CSC	marsh, grassland	April-September	Known to occur within the SPA-winter foraging documented by Foothill Associates (MJM Properties 2006b). Suitable nesting and foraging habitat available.
Cooper's hawk (nesting)	*Accipiter cooperii*	-	-	CDFW WL	nests in trees in riparian woodlands in deciduous, mixed and evergreen forests, as well as urban landscapes	April-July	Potential to occur - Suitable nesting habitat (e.g. trees) avail
Golden eagle	*Aquila chrysaetos*	-	-	CFP	forages in large open areas of foothill shrub and grassland habitats and occasionally croplands. Does not nest in the Central Valley	nests (February-August) ; winter CV (October-February)	Potential - unlikely to nest on-site since no historic nests documented; known to nest approx. 1 mile north of US-50 along Sacrament/El Dorado County line.
Swainson's hawk (nesting)	*Buteo swainsoni*	-	CT	CNDDB	Forages in grasslands and agricultural lands; nests in riparian and isolated trees	March-August	Potential to occur - suitable nesting and foraging habitat present on-site.
Ferruginous hawk (wintering)	*Buteo regalis*	-	-	BCC, CDFW WL	Rarely breeds in California (Lassen County); winter range includes grassland and shrubsteppe habitats from Northern California (except northeast and northwest corners) south to Mexica and east to Oklahoma, Nebraska, and Texas.	November-February	Potential - Winter foraging habitat present; does not nest in
Southern bald eagle (nesting and wintering)	*Haliaeetus leucocephalus leucocephalus*	FD	CE		Forage primarily in large inland fish-bearing waters with adjacent large trees or snags; occasionally in uplands with abundant rabbits, other small mammals, or carrion. Often roosts communally in winter		Low Potential-foraging habitat is marginal, and the species does not nest on the Central Valley floor. However, could be a rare and irregular foraging visitor.
California black rail (year round)	*Laterallis jamaicensis conturniculus*	-	CT		Freshwater marshes, wet meadows, and shallow margins of saltwater marshes. Requires consistent water depth of 1 inch and dense vegetation to nest.		Absent - No habitat.
Modesto song sparrow (year round)	*Melospiza melodia*	-	-	CSC	Nests and forages primarily in emergent marsh, riparian scrub, and earl successional riparian fores habitats in the north-central portion of the Central Valley; infrequently in mature riparian forest and sparsely vegetated ditches and levees		Potential to occur - Suitable nesting habitat available along Alder Creek and a few other on-site wetlands. However, there is scientific uncertainty as to whether song sparrows in eastern Sacramento County above 200 feet in elevation are of the "Modesto" form.
Burrowing owl (burrow sites)	*Athene cunicularia*	-	-	BCC, CSC	grassland	March-August	Known to occur - occurs in grasslands on-site; winter foraging documented by Foothill Associates (MJM Properties 2006b). Suitable nesting and foraging habitat available.
Short-eared owl (nesting)	*Asio flammeus*	-	-	CSC	nests in large expanses of prairie, coastal grasslands, heathlands, shrub-steppe, tundra, and agricultural areas.	March-July (nesting)	Low potential; does not nest in the region but may forage in

Table 1. Special-Status Species

Common Name	Scientific Name	Federal ESA Status	California ESA Status	Other Status	Habitat Description	Approximate Survey Dates	Potential To Occur On-Site
Purple martin (nesting)	*Progne subis*	-	-	CSC	Nests in tree cavities, bridges, utility poles, lava tubes, and buildings. Forages in foothill and low montane oak and riparian woodlands; less frequently in coniferous forests and open or developed habitats	September-April	Absent - only known breeding colonies in the region are in the City of Sacramento where they nest in hollow-box bridges (Shuford and Gardali 2008) and in highway overpass in the City of Rocklin
Loggerhead shrike	*Lanius ludovicianus*	-	-	BCC, CSC	grassland, woodland	March-July	Potential to occur - Suitable foraging and nesting habitat available on-site. Foraging documented adjacent to project area along Alder Creek by Matus 1981.
Bank swallow (nesting)	*Riparia riparia*	-	CT	-	stream banks	May-July	Absent - no suitable habitat on-site. On-site creek banks are sloping and vegetated.
Grasshopper sparrow	*Ammodramus savannarum*	-	-	CSC	grassland	May-July	Potential- grassland community represents nesting habitat.
Tricolored blackbird (nesting colony)	*Agelaius tricolor*	-	-	BCC, CSC	marsh, grassland	April-June	Potential- suitable habitat not likely within project area but known nesting colony occurrences in close proximity to project.
Mammals							
Pallid bat	*Anthrozous pallidus*	-	-	CSC	Deserts, grasslands, shrublands, woodlands, and forests. Most common in open, dry habitats. Roosts in rock crevices, oak hollows, bridges, or buildings	April-September	Potential to occur - Suitable roasting habitat available in oak trees and mine shaft.
Ringtail	*Bassariscus astutus*	-	-	CFP	Large acreages of oak woodland, riparian and other dense brush habitats with rock recesses or hollow snags for cover.		Low potential - marginal habitat quality, open understory, proximity to urban Folsom, and lack of connectivity to other riparian forest or oak woodland habitats.
Townsend's big-eared bat	*Corymorhinus townsendii*	-	-	CSC	Typically roosts in caves; however, colonies of <100 individuals occasionally nest in buildings or bridges. Forages in all habitus except alpine and subalpine, though most commonly in mesic forests an woodlands	April-September	Potential to occur - Suitable roosting habitat in oak trees and mine shaft.
Western mastiff bat	*Eumops perotis californicus*	-	-	CSC	Typically roost in high cliffs and rock creviced in small colonies of <100 individuals. Forages in a variety of grassland, shrub and wooded habitats including riparian and urban areas, though most commonly in open, arid lands.		Absent - suitable habitat not present within the project area.
Western red bat	*Lasiurus blossevilli*	-	-	CSC	Roots primarily in tree foliage, especially in cottonwood, sycamore, and other riparian trees or orchards. Prefers habitat edges and mosaics with trees that are protected from above and open below with open areas for foraging, including grasslands, shrublands, and open woodlands.	April-September	Potential to occur - potential to forage on-site; however, unlikely to roost due to lack of riparian woodland.
American badger	*Taxidea taxus*	-	-	CSC, CNDDB	Inhabits open uncultivated annual grasslands and in drier open shrub, forest and herbaceous habitats with friable soils.	Any season	Low potential to occur - marginally suitable habitat available.

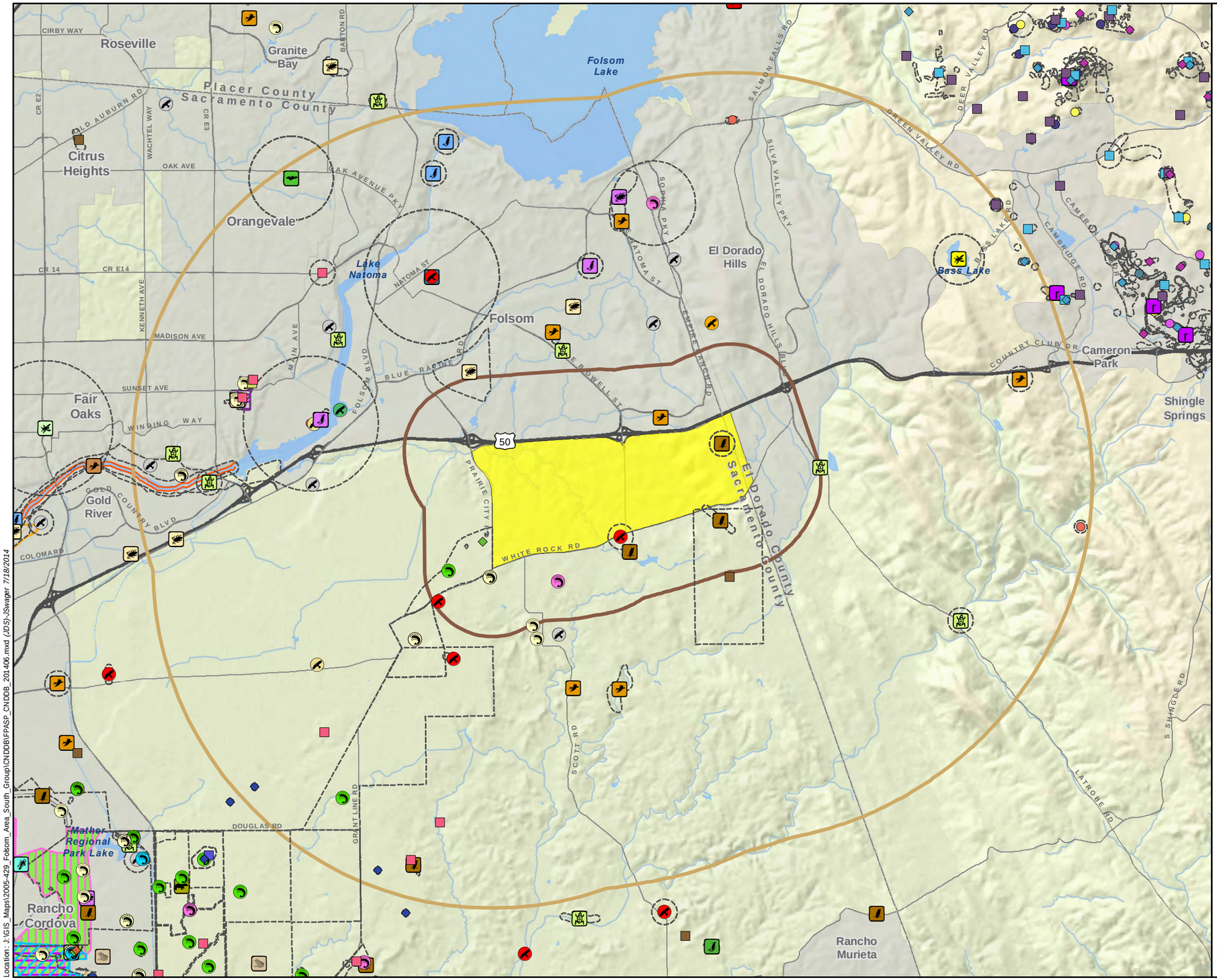
Status Codes:

FE - Federal ESA listed, Endangered.

Table 1. Special-Status Species

Common Name	Scientific Name	Federal ESA Status	California ESA Status	Other Status	Habitat Description	Approximate Survey Dates	Potential To Occur On-Site
FT	- Federal ESA listed, Threatened.						
FPE	- Formally Proposed for federal ESA listing as Endangered.						
FPT	- Formally Proposed for federal ESA listing as Threatened.						
FPD	- Listed under Federal ESA, but formally proposed for delisting.						
FD	- Formally Delisted (delisted species are monitored for 5 years).						
FC	- Candidate for federal ESA listing as Threatened or Endangered.						
NMFS	- NOAA/NMFS species of concern						
BCC	- U. S. Fish and Wildlife Service Bird of Conservation Concern (USFWS, 2002).						
CE	- California ESA or Native Plant Protection Act listed, Endangered.						
CT	- California ESA or Native Plant Protection Act listed, Threatened.						
CR	- California ESA or Native Plant Protection Act listed, Rare.						
CC	- Candidate for California ESA listing as Endangered or Threatened.						
CFP	- Fish and Game Code of California Fully Protected Species (§3511-birds, §4700-mammals, §5050-reptiles/amphibians).						
X	- Critical Habitat designated for this species.						
CSC	- California Department of Fish and Game Species of Special Concern (CDFG, updated August 2004).						
1A	- California Rare Plant Rank/Presumed extirpated in California and either rare or extinct elsewhere.						
1B	- California Rare Plant Rank/Rare, threatened or endangered in California and elsewhere.						
2A	- California Rare Plant Rank/Presumed extirpated in California, but more common elsewhere.						
2B	- California Rare Plant Rank/Rare, threatened or endangered in California, but more common elsewhere.						
3	- California Rare Plant Rank/Plants About Which More Information is Needed - A Review List.						
4	- California Rare Plant Rank/Plants of Limited Distribution - A Watch List.						

Figure 4.3-1.
CNDDB Occurrences of Special-Status Species



Location: J:\GIS_Maps\2005-429_Folsom_Area_South_Group\CNDDB\FPASP_CNDDB_201406.mxd (JDS) JSwager 7/18/2014

Distance From Project

- 1 mile
- 5 miles

Boundaries

- Plan Area Boundary [1]

CNDDB Occurrences [2]

- CNDDB Polygon Extent

Plants

- Stebbins' Morning-glory
- Pine Hill Ceanothus
- Red Hills Soaproot
- Brandegee's Clarkia
- Dwarf Downingia
- Pine Hill Flannelbush
- El Dorado Bedstraw
- Boggs Lake Hedge-hyssop
- Bisbee Peak Rush-rose
- Ahart's Dwarf Rush
- Legenere
- Pincushion Navarretia
- Slender Orcutt Grass
- Sacramento Orcutt Grass
- Layne's Ragwort
- Sanford's Arrowhead
- El Dorado County Mule Ears

Invertebrates

- Vernal Pool Fairy Shrimp
- Midvalley Fairy Shrimp
- California Linderiella
- Vernal Pool Tadpole Shrimp
- Blennosperma Vernal Pool Andrenid Bee
- Valley Elderberry Longhorn Beetle
- Hairy Water Flea
- Ricksecker's Water Scavenger Beetle
- A Vernal Pool Andrenid Bee

Amphibians/Reptiles

- Western Spadefoot
- Coast Horned Lizard
- California Red-legged Frog *
- Western Pond Turtle

Fish

- Steelhead - Central Valley DPS

Birds

- Double-crested Cormorant
- Great Egret
- Great Blue Heron
- Cooper's Hawk
- Golden Eagle
- Swainson's Hawk
- White-tailed Kite
- Bald Eagle
- Merlin
- Burrowing Owl
- Bank Swallow
- Double-crested Cormorant
- Tricolored Blackbird

Mammals

- Pallid Bat
- Silver-haired Bat
- American Badger

Critical Habitat

- Slender Orcutt Grass [3]
- Sacramento Orcutt Grass [3]
- Vernal Pool Fairy Shrimp [3]
- Vernal Pool Tadpole Shrimp [3]
- Valley Elderberry Longhorn Beetle [3]
- Central Valley Steelhead [4]

This map may include multiple species' occurrences at each location, some of which may not be visible on this graphic. The CNDDB occurrences shown may not reflect the actual location of the occurrence.

[1] Project Boundary: MSCE
[2] CDFW California Natural Diversity Database (CNDDB), June 2014 Update (GIS Shapefile)
[3] USFWS
[4] NOAA/NMFS

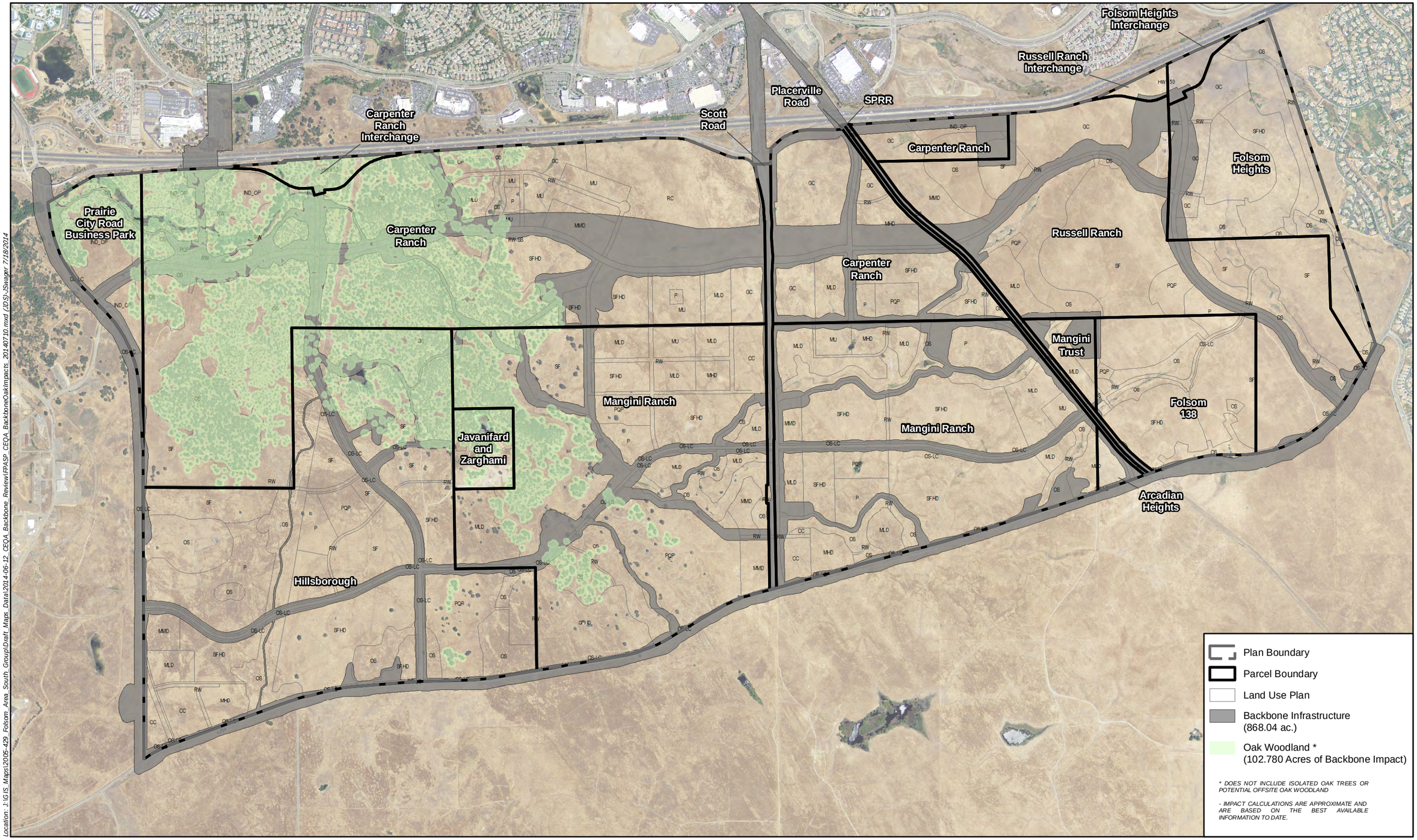
CNDDB Occurrences Located on USGS 7.5' Quadrangles: Buffalo Creek, Carmichael, Citrus Heights, Clarksville, Folsom, Folsom SE, Latrobe, Shingle Springs

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ENVIRONMENTAL CONSULTANTS

2005-429 Folsom Plan Area Specific Plan

Miles
0 1 2

Map Date: 7/18/2014



Location: J:\GIS_Maps\2005-429_Folsom_Area_South_Group\Draft_Maps_Data\2014-06-12_CEQA_Backbone_Review\FPASP_CEQA_BackboneOakImpacts_20140710.mxd (JDS) JSwaiger 7/18/2014

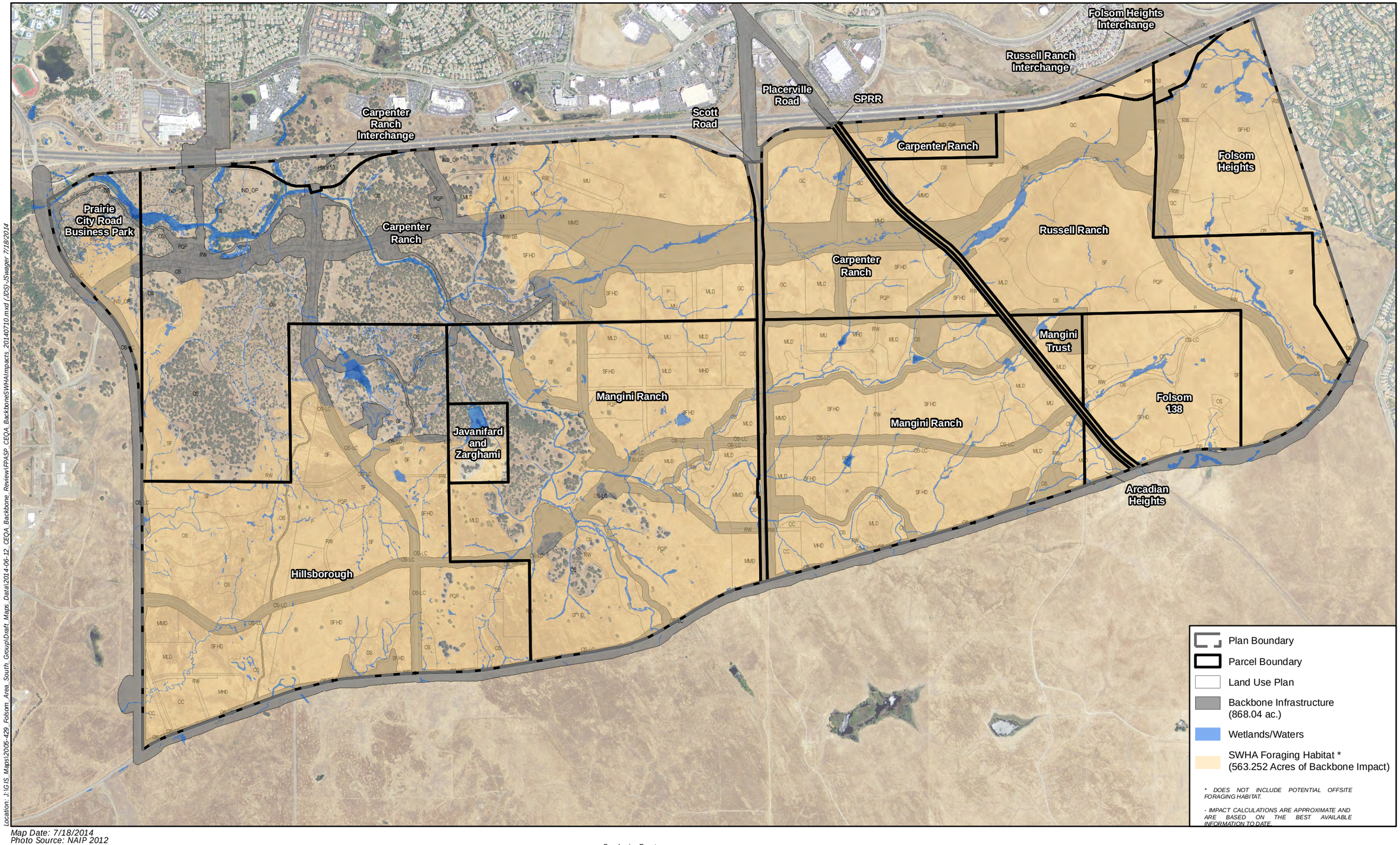
Map Date: 7/18/2014
Photo Source: NAIP 2012
Base Data: MSCE

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ENVIRONMENTAL CONSULTANTS

Scale in Feet
0 1,500

Figure 4.3-2. Oak Woodland Impacts

2005-429 Folsom Plan Area Specific Plan



Location - J:\GIS_Maps\2005-429_Folsom_Area_South_Group\Draft_Maps_Data\2014-06-12_CEQA_Backbone_Review\FPASP_CEQA_BackboneSWHAImpacts_20140710.mxd (JDS) JSwaiger 7/18/2014

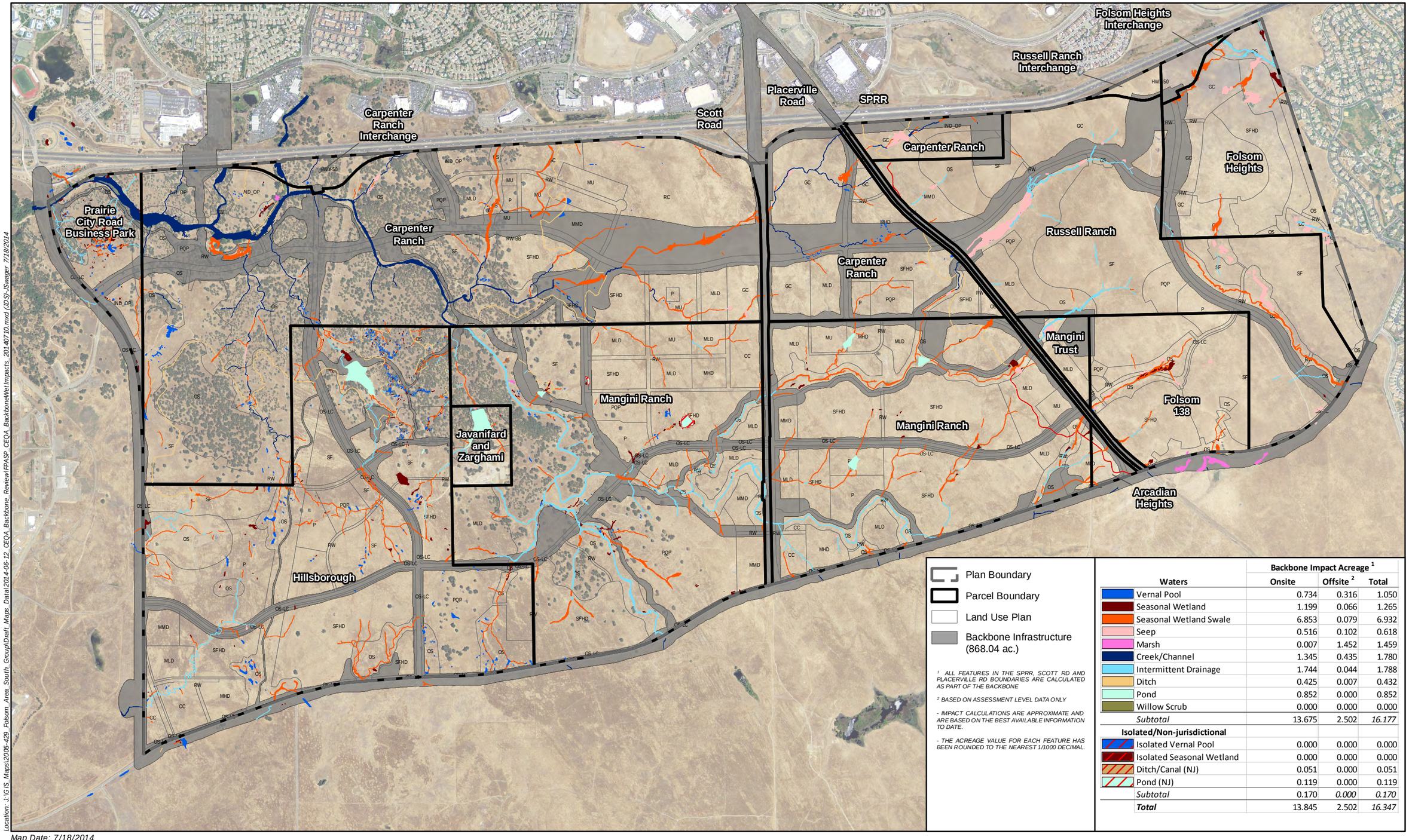
Map Date: 7/18/2014
Photo Source: NAIP 2012
Base Data: MSCE

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Scale in Feet
0 1,500

Figure 4.3-3. SWHA Foraging Impacts

2005-429 Folsom Plan Area Specific Plan



Plan Boundary

Parcel Boundary

Land Use Plan

Backbone Infrastructure (868.04 ac.)

[1] *ALL FEATURES IN THE SPRR, SCOTT RD AND PLACERVILLE RD BOUNDARIES ARE CALCULATED AS PART OF THE BACKBONE*

[2] *BASED ON ASSESSMENT LEVEL DATA ONLY*

- IMPACT CALCULATIONS ARE APPROXIMATE AND ARE BASED ON THE BEST AVAILABLE INFORMATION TO DATE.

- THE ACREAGE VALUE FOR EACH FEATURE HAS BEEN ROUNDED TO THE NEAREST 1/1000 DECIMAL.

Waters	Backbone Impact Acreage [1] Onsite	Offsite [2]	Total
Vernal Pool	0.734	0.316	1.050
Seasonal Wetland	1.199	0.066	1.265
Seasonal Wetland Swale	6.853	0.079	6.932
Seep	0.516	0.102	0.618
Marsh	0.007	1.452	1.459
Creek/Channel	1.345	0.435	1.780
Intermittent Drainage	1.744	0.044	1.788
Ditch	0.425	0.007	0.432
Pond	0.852	0.000	0.852
Willow Scrub	0.000	0.000	0.000
Subtotal	13.675	2.502	*16.177*
Isolated/Non-jurisdictional			
Isolated Vernal Pool	0.000	0.000	0.000
Isolated Seasonal Wetland	0.000	0.000	0.000
Ditch/Canal (NJ)	0.051	0.000	0.051
Pond (NJ)	0.119	0.000	0.119
Subtotal	0.170	*0.000*	*0.170*
Total	13.845	2.502	*16.347*

Location: J:\GIS_Maps\2005-429_Folsom_Area_South_Group\Draft_Maps_Data\2014-06-12_CEQA_Backbone_Review\FPASP_CEQA_BackboneWetImpacts_20140710.mxd (JDS) JSwaiger 7/18/2014

Map Date: 7/18/2014
Photo Source: NAIP 2012
Base Data: MSCE

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Scale in Feet
0 1,500

Figure 4.3-4. Wetland Impacts

2005-429 Folsom Plan Area Specific Plan

APPENDIX C

Cultural Resources Report

Cultural Resources Impact Assessment

Backbone Infrastructure Project

Specific Plan Amendment for the Folsom South of U.S. Highway 50 Specific Plan Project

Sacramento County, California

Prepared For:

City of Folsom
Community Development Department

November 2014

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

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1.0 INTRODUCTION

This report addresses known historic, prehistoric and paleontological resources in the Project vicinity and the potential for unknown resources to exist. Prehistoric resources are those sites and artifacts associated with indigenous people, generally prior to contact with people of European descent (Euroamericans). Historic resources include structures, features, artifacts, and sites that date from Euroamerican settlement of the region. Paleontological resources are fossilized remains of non-human organisms.

The following analysis summarizes the existing setting and briefly describes the potential effects to cultural resources of the historic and prehistoric periods, and paleontological resources. The analysis will both identify the thresholds of significance of possible impacts associated with the Project, and develop mitigation measures that would be necessary to reduce impacts to a less-than-significant level. Information for this report was drawn from the 2010 Volume I, Draft EIR/EIS, South of U.S. 50 Specific Plan Project, as well as numerous confidential technical studies prepared by ECORP Consulting, Inc. in support of the federal permitting for the Project.

2.0 EXISTING ENVIRONMENTAL SETTING

2.1 Paleontological Resources

Background

The Project Area is situated on the western edge of the western Sierra Nevada metamorphic belt, which is a unit of metamorphic rock that measures approximately 180 miles long and 20 to 40 miles wide in the western foothills of the Sierra Nevada. Bedrock within this belt consists of volcanic and metasedimentary rocks of Paleozoic and Mesozoic age, which were formed between 542 to 65 million years ago. These rocks are characterized by low-grade metamorphism in the greenschist facies.

The underlying geologic formation units for the Project Area consist of Mehrten, Ione, Salt Springs Slate, Copper Hill Volcanics, and Gopher Ridge Volcanics. The Project and surrounding area has been assessed and inventoried for geologic formation units and the potential paleontological productivity of each unit. A summary of the methods and results is provided below.

Existing Paleontological Resources

In support of the preparation of the EIR/EIS for the Specific Plan Area, AECOM carried out a paleontological inventory of the Project Area. This included a paleontological records search at the University of California Museum of Paleontology (UCMP) at the University of California-Berkeley on August 12, 2009, as well as a review of regional geologic maps from the California

Geological Survey and existing literature on paleontological resources in and near the Project Area and vicinity. A reconnaissance-level field survey was conducted in June 2007.

The paleontological assessment determined that there are no fossil vertebrate localities located within the Project Area. However, vertebrate mammal and plant fossils have been reported from the Mehrten Formation throughout the Sierra Nevada foothills and the eastern margin of the Central Valley, and vertebrate mammal, plant, and invertebrate fossils have been reported from the Ione Formation throughout the Central Valley (Folsom and USACE 2010). A large number of fossils have been recovered from the Mehrten and Ione Formations throughout the Central Valley. These formations are considered paleontologically sensitive rock units under the Society of Vertebrate Paleontology guidelines (1995), thus suggesting that there is a potential for discovering additional similar fossil remains in these formations during earthmoving activities within the Project Area. Both of these formations occur along the western edge of the Project Area.

The Salt Springs Slate, Copper Hill Volcanics, and Gopher Ridge Volcanics formations consist of Jurassic-age rocks that formed at depth beneath the earth's surface and have since been deformed and metamorphosed. The UCMP database does not contain any records of vertebrate or plant fossils within these formations. Because of the nature of these rock formations and the lack of previously recorded vertebrate or plant fossil localities, these formations are not considered to be paleontologically sensitive rock units under the Society of Vertebrate Paleontology guidelines.

Therefore, the Mehrten and Ione Formations have a potential to yield paleontological resources. The balance of the Project Area is considered to have low sensitivity for paleontological resources.

2.2 Cultural Resources

Background

Prehistoric and Native American Context

The archaeological record indicates that between approximately 10,000 and 8,000 years before the present (BP), a predominantly hunting economy existed in the region, characterized by archaeological sites containing numerous projectile points and butchered large animal bones. Although small animal bones and plant grinding tools are rarely found within archaeological sites of this period, small game and floral foods were probably used on a limited basis. A lack of deep cultural deposits from this period suggests that groups included only small numbers of individuals who did not often stay in one place for extended periods. In contrast to this period, there was a shift in focus from hunting towards a greater reliance on plant resources around 8,000 BP. Archaeological evidence of this trend consists of a much greater number of milling tools (e.g., metates and manos) for processing seeds and other vegetable matter. This period, which extended until around 5,000 BP, is sometimes referred to as the "Millingstone Horizon"

(Wallace 1978). Evidence from archaeological sites dating from approximately 5,000 BP indicates a continuation from the previous period of reliance on both plant gathering and hunting, with more specialized adaptation to particular environments. Mortars and pestles were added to metates and manos for grinding seeds and other vegetable material. Flaked-stone tools became more refined and specialized, and bone tools were more common. The introduction of the bow and arrow into the region sometime around 1,000 BP is indicated by the presence of small projectile points (Wallace 1978; Elsasser 1978 Moratto 1984).

Ethnographically, the Project Area is in the southwestern portion of the territory occupied by the Penutian-speaking Nisenan. The territory extended from the area surrounding the current City of Oroville on the north to a few miles south of the American River in the south. The grassy plains were largely unsettled, used mainly as a foraging ground by both valley and hill groups. Individual and extended families "owned" hunting and gathering grounds, and trespassing was discouraged (Kroeber 1976; Wilson and Towne 1978). Subsistence activities centered on the gathering of acorns (tan bark oak and black oak were preferred), seeds, and other plant resources. The hunting of animals such as deer and rabbits, and fishing were also an important part of normal subsistence activities. Trade was important with goods such as shell beads, salmon, deer skins and nuts, traveling from the coast and valleys up into the Sierra Nevada Mountains and beyond to the east, and vice versa (Wilson and Towne 1978).

The Spanish arrived on the central California coast in 1769. Though the Nisenan appear to have escaped being removed to missions by the Spanish, they were not spared the ravages of European diseases. In 1833, an epidemic—probably malaria—raged through the Sacramento Valley, killing an estimated 75 percent of the native population. The discovery of gold in 1848 at Sutter's Mill, near the Nisenan village of Colluma (now Coloma) on the South Fork of the American River, drew thousands of miners into the area, and led to widespread population depletion and the virtual destruction of traditional Nisenan culture. By the Great Depression, no Nisenan remained who could remember the days before the arrival of the Euro-Americans (Wilson and Towne 1978).

Euroamerican and Historical Context

John Sutter, a European immigrant, built a fort at the confluence of the Sacramento and American Rivers in 1839 and petitioned the Mexican governor of Alta (Upper) California for a land grant, which he received in 1841. Sutter built a flour mill and grew wheat near the fort. Gold was discovered in the flume of Sutter's lumber mill at Coloma on the South Fork of the American River in January 1848. That same year Mexico ceded Alta California to the United States, and in 1850 California became a state. The Folsom area was settled soon after, in 1849, by African-American miners and from that circumstance the area became known as Negro Bar. By 1855 Chinese miners were reworking abandoned diggings and a large number of them were employed at various regional mines through the 1880s (Westwood et al. 2011).

One of the miners who staked claim inside the Project Area was John Pierce (J. P.) Rhoades, originally a farmer from the Midwest who traveled overland from Missouri to California in 1846. Rhoades moved to Sacramento County in 1848, where he acquired a mining claim and mined what would later be known as the Rhoades' Diggings for nearly a year (Lindström 1988). Based on historical accounts, it is possible that Rhoades was the first to mine in this area (Gudde 2009, Wilson 1986). The mining claim was very successful, with some reports suggesting that Rhoades and his family mined over $20,000 in gold by the time they left the area in 1849 (Gudde 2009). Rhoades died in the winter of 1866 at 48 years old (Wilson 1986; Bancroft 1964). He is buried in the Sloughhouse Pioneer Cemetery.

The area in which Rhoades' Diggings is located was entirely dependent upon rain water prior to 1853. As Alder Creek was seasonally dry in the summer and fall, mining prior to 1853 took place only during the spring and winter. Because word had spread of the rich deposits in Rhoades' Diggings and because the construction of the ditch brought water throughout the year, many miners set up temporary camps at Rhoades' Diggings (Davies 1999). The Rhoades family abandoned the Rhoades' Diggings well before 1853, and it is unclear why the area retained Rhoades' name, but it quickly became known as Rhoades' Diggings, a name which identifies the area on historic maps and in historic and contemporary texts.

Out of a need for a more steady water source, sometime around 1851 the miners at the Willow Springs Hill Diggings, north of the eastern portion of the Specific Plan Area, surveyed and dug the Keefe-McDerby Ditch to supply water to their claims (HAER 1997). The Keefe-McDerby Ditch extends north to south into the eastern portion of the Specific Plan Area. In 1877, with the mines becoming less profitable and competition from the Natoma Company pressuring other water systems out of business, the ditch was marketed for agricultural interests instead of mining. The ditch system was managed until the early 1900s and by 1923, most portions of the Keefe-McDerby ditch system were abandoned (HAER 1997).

On the western half of the Specific Plan Area, a similar need for a steady water source prompted Amos Catlin of Mormon Island to devise a plan in 1851 to divert water from the American River to the gold fields of the various dry diggings within the Folsom area by using canals and diversion ditches (HAER 1995). Construction for Natoma Canal began in 1851 and was completed in 1853. The ditch primarily fed dry diggings to the north of the Project APE, except for a loop that drops into the northern portion of the Carpenter Ranch APE. However, to feed other dry diggings, Catlin's company, the Natoma Water and Mining Company constructed a second ditch, the Rhoades' Branch Ditch, which was built as a branch of the Natoma Canal. Construction for Rhoades' Branch Ditch began in the early spring of 1853 and finished sometime near the end of the same year (HAER 1995). It is unknown when the ditch ceased to be used for mining, but it can be assumed that this occurred when the land around Rhoades' Diggings began to pass into private ownership. From this period it was utilized mostly for ranching and agriculture until the flooding of the Folsom Reservoir in the 1950s (HAER 1995).

In 1855, John H. Gass and Colonel Z. Hagen built the first of two large steam-powered quartz mills on Rhoades' Diggings (Plimpton 1961). The quartz mills would have been used to process ore from hard-rock mining. In 1857, the second of the steam-powered quartz mills was built by A. French and Company. The mill was very profitable for a short time, but archival evidence suggests that the rush to mine gold at Rhoades' Diggings ended shortly after the last quartz mine stopped operations in the late 1850s or early 1860s, even though the Rhodes' Diggings Quartz Mining Company did not become a corporate entity until 1862 (Plimpton 1961). After Rhoades' Diggings was abandoned, one drift mine was operated in 1916 by Gray Mining Company (Plimpton 1961). Beyond 1916, there is no evidence in archival references of mining in Rhoades' Diggings.

Gold mining wasn't the only historical land use located within and around the Project Area. Ranching and homesteading is documented as early as 1852, and development and use of the Lincoln Highway, White Rock Road, and Placerville & Sacramento Valley Railroad transportation routes are all evident in the historical and archaeological records. Due to its location, historic inns appeared along these routes, used by settlers coming from Nevada territory into Sacramento (Cross 1954). A more detailed historic context statement is provided in the PHPS (Westwood et al. 2011).

Existing Cultural Resources

Efforts to identify cultural resources within the Project Area consisted of conducting records searches and literature reviews, consulting with NAHC and Native American representatives, carrying out archival research, and conducting archaeological surveys and analyses. The cultural resources inventory of the Project Area, as illustrated in Figure 1, is presented below and was largely drawn from the Backbone Infrastructure Area of Potential Effects (APE), which was studied in conjunction with the application for the 404 permit from the USACE. Some minor differences in the footprint of the Backbone APE and the current Project Area exist, which account for minor variances in site counts between the documents. The following inventory methods and results take into account all applicable technical studies and documentation.

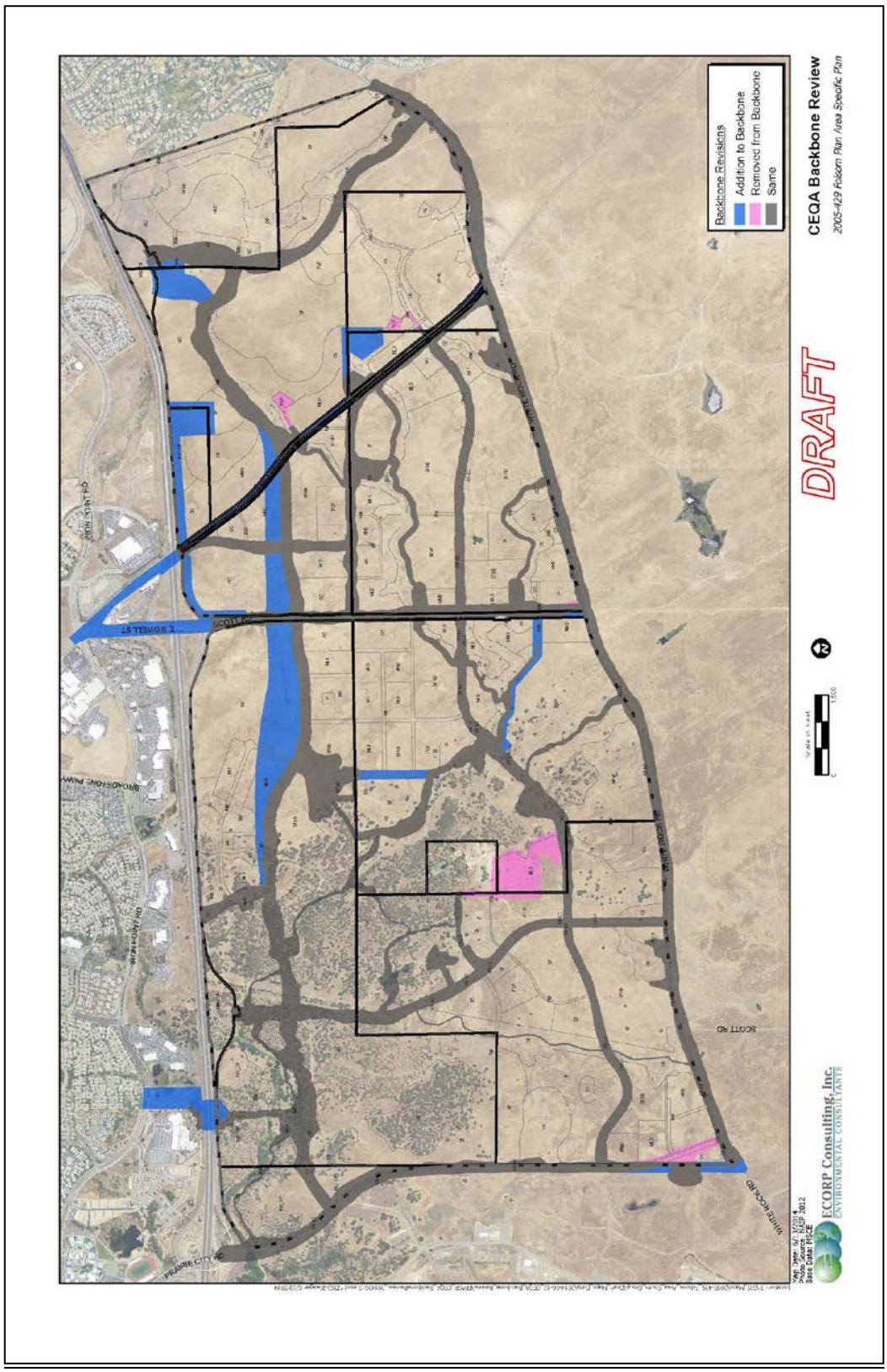


Figure 1. CEQA Study Area for Cultural Resources. Additions and deletions to the Section 106 Project Area (in gray) are shown in blue and pink, respectively.

Records Search

Numerous records searches and literature reviews have been carried out over a nearly 10 year process of cultural resources investigations within the Specific Plan Area. The most recent records search was completed at the North Central Information Center (NCIC) of the California Historical Resources Information System at California State University-Sacramento on 6 June 2014. The purpose of the records search was to determine the extent of previous surveys within a 0.5-mile (800-meter) radius of the Proposed Project location, and whether previously documented prehistoric or historic archaeological sites, architectural resources, or traditional cultural properties exist within this area.

In addition to the official records and maps for archaeological sites and surveys in Sacramento County gathered at the NCIC during the inventory phase of the Project, the Sacramento Room in the Sacramento Central Library, Sacramento Archives and Museums Collection Center (SAMCC), Folsom Historical Society and Folsom History Museum, and the County Assessor's Office were visited to gather records and maps pertinent to transportation routes, land ownership, mining and homesteading claims, mining companies, individual landowners such as William Carpenter and J.P. Rhoades, and individual or company-owned water rights within the Project Area. In addition, several electronic resources were examined to gather further information about William Carpenter, J.P. Rhoades, and the Lincoln Highway. These included, among others: ancestry.com, findagrave.com, the California Digital Newspaper Collection (CDNC), the American History and Genealogy Project Sacramento, rootsweb.com (Sacramento Death Notices 1900s), the Lincoln Highway National Museum and Archives, and the Federal Highway Administration (FHWA) Highway History for Lincoln Highway. For additional land patent records, the Bureau of Land Management (BLM) General Land Office (GLO) survey plats were researched.

Native American Consultation

ECORP contacted the California Native American Heritage Commission (NAHC) on 6 April 2012 to request an updated search of the Sacred Land Files for the Project Area. Although the search failed to yield information on Native American cultural resources located within or adjacent to the Project Area, the NAHC provided a list of individuals and organizations in the Native American community that may be able to provide information about unrecorded sites in the Project vicinity. Project notification letters were sent out to contacts for the entire Specific Plan Area in January 2009 and the USACE conducted follow-up consultation in 2012 with the individuals listed in the updated contacts list. In addition, the USACE has been consulting with tribes throughout the Specific Plan Area compliance process. The United Auburn Indian Community, Shingle Springs Band of Miwok Indians, and Wilton Rancheria were invited to be concurring parties on the First Amended Programmatic Agreement (FAPA; see Section 4.4.3), attended a field tour with the applicants and ECORP, and have been sent copies of all technical reports prepared under the FAPA to date. Government-to-government consultation between the

tribes and USACE is ongoing and will continue throughout the lifetime of the FAPA and any subsequent amendments.

Geoarchaeological Assessment

As a result of geoarchaeological analyses carried out for the Specific Plan Area, Windingstad and Homburg (2011, 2012) categorized the SPA into three sensitivity zones that reflect the potential for buried cultural resources: low, moderate, and high. The results indicated that a high potential for intact buried cultural resources exists below certain ancient terraces that were formed as a result of the deposition of sediment from flowing water or gravity, which have the potential to have buried occupational sites that were once on the surface. Trenching on these now-buried surfaces, which are in very small, localized areas, revealed multiple buried soils that dated back to the middle Holocene. Therefore, in those areas, archaeological resources are possible down to a depth of 1.5 meters below the surface.

Fieldwork

The entire Project Area has been subjected to an intensive pedestrian survey by qualified professional archaeologists using 10 to 15 meter transect intervals. Fieldwork for the on-site Backbone Project Area was conducted during March through May of 2012. The fieldwork consisted of a combination of site relocation, updating, recording using a submeter GPS receiver, and pedestrian survey. Subsequently, in 2013, ECORP conducted test excavations and additional archival research in order to evaluate the cultural resources that were identified to have the potential for subsurface deposits and were eligible for the NRHP/CRHR. Fieldwork for the off-site portions of the Backbone project area, located north of US Highway 50, were carried out by a number of cultural resources consultants at various times as early as 1990.

Results

The results of the cultural resources inventories and surveys are best described relative to on-site and off-site elements. On-site Backbone is anything within the Backbone infrastructure that falls within the boundaries of the Specific Plan Area, which was subject to the FAPA (see Section 4.4.3). Off-site Backbone is that which lies beyond them; namely, two clusters of utility connections north of US Highway 50 – a future sewer alignment adjacent to (and immediately west of) the future Oak Avenue Interchange, and a future water alignment at the existing Bidwell Interchange. The inventory of cultural resources for on- and off-site areas draws from two discrete sets of data, and therefore, is discussed separately below.

On-site Backbone Inventory

As a result of the inventory and evaluations of eligibility for the on-site Backbone Project Area, ECORP documented 151 sites and isolates, all archaeological and all from the historic period. Many of these sites are contributing elements to one of two individually eligible historic mining

districts (Alder Creek Corridor Mining District [ACCMD] and Rhoades' Diggings Mining District [RDMD]). Contributing elements are sites that do not exhibit significance as individual resources, but are those that collectively form a cultural landscape because they share a common time and function. Eligibility of cultural resources is assessed by applying criteria described in Section 4.4.3, and as documented in the confidential cultural resources technical reports prepared for the Project Area.

The following cultural resources within the on-site Backbone Project Area are not individually eligible, but are contributing elements to the ACCMD:

- 2 placer mining landscapes (P-34-1691 and -1791)

The following are not individually eligible, but are contributing elements to the RDMD:

- 15 ditch sites (P-34-1753, -1792, -1794, -1797, -1807, -1908, -1918, -1922, -2096, -4604, -4629, -4681, -4694, -4695, and -4745)
- 41 placer mining landscape sites (P-34-1772, -1784, -1787, -1790, -1793, -1795, -1799, -1800, -1825, -1905, -1907, -1909, -1919, -1923, -1926, -2084, -2086, -2087, -2095, -4601, -4602, -4603, -4606, -4607, -4609, -4610, -4613, -4614, -4618, -4625, -4633, -4636, -4676, -4697, -4700, -4703, -4704, -4705, -4739, -4752, and -4766)
- 1 residential site (P-34-1827)

The following are not individually eligible and are not contributing elements to a district:

- 1 railroad (P-34-0455)
- 6 dams (P-34-1070, -1071, -1487, -1693, -1766, and -4619)
- 14 rock fences (P-34-0990, -0991, 1481, -1484, -1485, -1486, -1700, -1773, -1809, -2164, -4593, -4598, -4668, and -4669)
- 8 ditches (P-34-1067, -1761, -1767, -1780, -1783, -1814, -4673, and -4760)
- 1 holding pond (P-34-4738)
- 3 refuse scatters (P-34-1702, -1823, and -4717)
- 1 transmission line (P-34-2195)
- 1 rock cairn (P-34-4716)
- 27 placer mining sites (P-34-1069, -1701, -1747, -1750, -1752, -1754, -1758, -1798, -1808, -4594, -4596, -4599, -4600, -4605, -4608, -4615, -4617, -4645, -4650, -4664, -4674, 4675, -4710, -4727, -4737, -4756, and -4762)
- 3 rock piles (P-34-1810, -1811, and -1812)
- 1 dredge cable fragment (P-34-4621)
- 1 automobile frame (P-34-4684)
- 1 well (P-34-1075)
- 1 campsite (P-34-1828)
- 7 isolates (P-34-4584, -4597, -4611, -4616, -4646, -4671, and -4680)

The following are individually eligible and are contributing elements to the RDMD:

- 1 ditch (P-34-1742, Rhoades' Branch Ditch)
- 1 canal (P-34-1776, Natoma Canal)
- 3 placer mining landscape sites (P-34-1744, -4612, and -4682)
- 4 residential sites (P-34-1474, -1788, -1910, and -1911)

The following are individually eligible, but are not contributing elements to a district:

- 2 ranch complexes (P-34-0906 and -2166)
- 1 ditch (P-34-1745, Keefe-McDerby Mine Ditch)
- 1 road (P-34-1555, White Rock Road)
- 2 inns (P-34-2150 and -2193)
- 1 placer mining landscape site (P-34-1746, Gray's Drift Mine)

Off-Site Backbone Inventory

The two areas off-site backbone, north of US Highway 50, are described as a future sewer alignment immediately west of the future Oak Avenue Interchange, and a future water alignment at the existing Bidwell Interchange. In both cases, new sewer and water alignments will tie into existing lines under existing roadways in Folsom. These areas are not included in the Specific Plan Area and are not subject to the FAPA; however, they have been previously inventoried for cultural resources as part of other, unrelated projects. Information on the results of the cultural resources studies for these areas was drawn from information received from the NCIC.

The sewer alignment near the future Oak Avenue interchange was surveyed as part of several previous cultural resources efforts associated with the Broadstone development and other projects that have since been constructed. This includes a past survey by John Dougherty and David Davis in 1994, and subjected to a Historic Property Treatment Plan prepared by ASI in 1995. The portion of the alignment within the State Route 50 right-of-way was surveyed by PAR in 1991 and Caltrans in 1994 (Noble 1994).

As a result of the previous surveys, several cultural resources from the historic period were recorded. The area for the proposed sewer alignment has since been developed, and therefore, these resources are either no longer present or lack sufficient integrity, and accordingly, are not significant or considered historical resources for the purpose of CEQA. These include:

- 1 mining camp (P-34-2279; Bdstn 14)
- 1 glory hole (P-34-2280; Bdstn 15)
- 1 ditch segment (P-34-2289; ASI-4)

- 1 stone fireplace site (P-34-2290; ASI-6)
- 1 placer mining landscape (P-34-2291)
- 1 shallow placer mining site (P-34-335-H; CA-SAC-308-H; W.S. Feature 2)
- 1 ditch system (P-34-335-H; CA-SAC-308-H; PAR #4)

The Scott Road Interchange had been surveyed by numerous cultural resources consultants, including Derr (1990), PAR (1991), Far Western Anthropological Research Group (1991), ASI (1994), Jones & Stokes (1995), and Windmiller (1997). These surveys resulted in two resources within the footprint of the proposed water alignment:

- 1 railroad (CA-SAC-428-H, P-34-455-H, PAR 15)
- 1 fence line (P-34-808-H)

Subsequently, through separate environmental review, the interchange was constructed, which removed the fence line. The railroad remains intact, and was evaluated by ECORP (2013) as not eligible for the NRHP or CRHR as part of the Section 106 process, with SHPO concurrence. However, the Folsom Historical Society has expressed an interest in considering the railroad important on a local level.

3.0 REGULATORY SETTING

3.1 Professional Paleontological Standards

The Society of Vertebrate Paleontology, a national scientific organization of professional vertebrate paleontologists, has established standard guidelines that outline acceptable professional practices in the conduct of paleontological resource assessments and surveys, monitoring and mitigation, data and fossil recovery, sampling procedures, specimen preparation, analysis, and curation. Most practicing professional paleontologists in the nation adhere to the Society of Vertebrate Paleontology assessment, mitigation, and monitoring requirements, as specifically spelled out in its standard guidelines (Folsom and USACE 2010).

A “unique paleontological resource or site” is one that is considered significant under current professional paleontological standards. An individual vertebrate fossil specimen may be considered unique or significant if it is identifiable and well preserved, and it meets one of the following criteria:

- a type specimen (i.e., the individual from which a species or subspecies has been described);
- a member of a rare species;
- a species that is part of a diverse assemblage (i.e., a site where more than one fossil has been discovered)
- wherein other species are also identifiable, and important information regarding life history of individuals can

- be drawn;
- a skeletal element different from, or a specimen more complete than, those now available for its species; or
- a complete specimen (i.e., all or substantially all of the entire skeleton is present).

The value or importance of different fossil groups varies depending on the age and depositional environment of the rock unit that contains the fossils, their rarity, and the extent to which they have already been identified and documented. "Value" also considers the ability to recover similar materials under more controlled conditions (such as for scholarly research). Marine invertebrates are generally common because the fossil record is well developed and well documented, and they would generally not be considered a unique paleontological resource. Identifiable vertebrate marine and terrestrial fossils are generally considered scientifically important because they are, comparatively, relatively rare (Folsom and USACE 2010).

3.2 Cultural Resources Obligations Under CEQA

CEQA (Title 14, CCR, Article 5, Section 15064.5) applies to cultural resources of the historical and prehistoric periods. Any project with an effect that may cause a substantial adverse change in the significance of a "Historical Resource," either directly or indirectly, is a project that may have a significant impact on the environment. As a result, such a project would require avoidance or mitigation of impacts to those affected resources.

Generally, significant cultural resources ("Historical Resources" under CEQA) must meet at least one of four criteria that define eligibility for listing on either the California Register of Historical Resources (CRHR) (Pub. Res. Code § 5024.1, Title 14 CCR, Section 4852) or the National Register of Historic Places (NRHP) (36 CFR 60.4). Cultural resources eligible for listing on the NRHP are considered Historic Properties under 36 CFR Part 800 and are automatically eligible for the CRHR. Resources listed on or eligible for inclusion in the CRHR are considered to be Historical Resources (significant) under CEQA. A resource can also be a historical resource if it is included in a local register of historical resources (as defined by PRC Sec. 5020.1[k]), or identified in an historical resource survey meeting the requirements of PRC Sec. 5024.1(g) (presumption of historical significance) or is determined to be historically significant by the CEQA lead agency [CCR Title 14, Section 15064.5(a)]. In making this determination, the CEQA lead agency usually applies the CRHR eligibility criteria.

The eligibility criteria for the CRHR are as follows [CCR Title 14, Section 4852(b)]:

1. It is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States; and/or

2. It is associated with the lives of persons important to local, California, or national history; and/or

3. It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master or possesses high artistic values; and/or

4. It has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation.

In addition, the resource must retain integrity. Integrity is evaluated with regard to the retention of location, design, setting, materials, workmanship, feeling, and association [CCR Title 14, Section 4852(c)].

Impacts to a Historical Resource (as defined by CEQA) are significant if the resource is demolished or destroyed or if the characteristics that made the resource eligible are materially impaired [CCR Title 14, Section 15064.5(a)]. Resources that have been evaluated and found to not be Historical Resources under CEQA are not afforded any consideration under CEQA.

The Lead Agency is responsible for ensuring compliance with mitigation measures for Historical Resources, as defined by CEQA, in order to reduce impacts. Section 15097 of Title 14, Chapter 3, Article 7 of CEQA, Mitigation Monitoring or Reporting, "the public agency shall adopt a program for monitoring or reporting on the revisions which it has required in the Project and the measures it has imposed to mitigate or avoid significant environmental effects. A public agency may delegate reporting or monitoring responsibilities to another public agency or to a private entity which accepts the delegation; however, until mitigation measures have been completed the lead agency remains responsible for ensuring that implementation of the mitigation measures occurs in accordance with the program."

3.3 Cultural Resources Obligations Under Section 106 NHPA

Because this Project is also subject to a Section 404 Clean Water Act permit from the USACE, it is also subject to compliance with Section 106 of the National Historic Preservation Act (NHPA). Under the federal regulations implementing Section 106 of the NHPA (36 CFR 800), cultural resources identified in the Project's Area of Potential Effects (APE) must be evaluated using NRHP and eligibility criteria. The eligibility criteria for the NRHP are as follows (36 CFR 60.4):

"The quality of significance in American history, architecture, archaeology, and culture is present in districts, sites, buildings, structures, and objects of state and local importance that possess aspects of integrity of location, design, setting, materials, workmanship, feeling, association, and:

A. is associated with events that have made a significant contribution to the broad patterns of our history; and/or
B. is associated with the lives of a person or persons significance in our past; and/or

C. embodies the distinctive characteristics of a type, period or method of construction, or represents the work of a master, or possesses high artistic value, or represents a significant and distinguishable entity whose components may lack individual distinction; and/or
D. has yielded or may be likely to yield information important in prehistory or history.

In addition, the resource must be at least 50 years old, except in exceptional circumstances (36 CFR 60.4).

Effects to NRHP-eligible resources (Historic Properties) are adverse if the project may alter, directly or indirectly, any of the characteristics of an historic property that qualify the property for inclusion in the NRHP in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Resources that have been evaluated and found to not be Historic Properties under Section 106 are not afforded any consideration.

In 2011, and in accordance with 36 CFR 800.14, the USACE, in consultation with the California Office of Historic Preservation (OHP) and Advisory Council on Historic Preservation (ACHP), executed a Programmatic Agreement (PA) to comply with Section 106 NHPA. The City of Folsom, as CEQA lead agency, served as a concurring party to the PA and was consulted in its development. In October 2013, the PA was amended by the signatories and was thereafter referred to as the First Amended Programmatic Agreement (FAPA). Execution of the original PA and FAPA occurred prior to issuance of the Federal permit and prior to authorization for any aspect or component of the Project. Items required by the FAPA and that have been completed include an inventory and evaluation for cultural resources, a Finding of Effect, a historic property treatment plan, and a historic property management plan. The FAPA provides the process by which all cultural resources assessments are carried out for the Specific Plan Area, including the Project Area, and also addresses such for both Section 106 and CEQA compliance.

3.4 Local Regulations

City of Folsom 1993 General Plan

The Folsom General Plan (GP) identifies the following applicable goals and policies to provide further protection to cultural and historical resources:

Goal 1 To retain and enhance Folsom's quality of separate identity and sense of community. Included in the definition of community identity and feel, are the Folsom historic district and other historic places throughout the community.

Policy 1.6 Folsom's historic district shall be enhanced and maintained through the improvement of public facilities.

Policy 1.7 Historic buildings or locations shall be preserved or incorporated into the design of new developments.

Policy 1.8 The City shall prepare an inventory of historically and culturally significant buildings and sites. The City should investigate measures for historic preservation of these building sites.

Goal 26 The City shall actively encourage the restoration and maintenance of historic buildings or sites (City of Folsom 2014).

4.0 IMPACTS AND MITIGATION MEASURES

This section describes the standards of significance and methods utilized to analyze and determine the Proposed Project's potential impacts related to paleontological and cultural resources.

4.1 Standards of Significance

Consistent with Appendix G of the CEQA Guidelines, the City's General Plan, and the Folsom South of U.S. Highway 50 Specific Plan, a significant impact would occur if the proposed project would result in the following:

- Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5;
- Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5;
- Directly or indirectly destroy a unique paleontological resource on site or unique geologic features; or
- Disturb any human remains, including those interred outside of formal cemeteries.

Impacts to a Historical Resource, as defined by CEQA (listed in an official historic inventory or survey or eligible for the CRHR), are significant if the resource is demolished or destroyed or if the characteristics that made the resource eligible are materially impaired [CCR Title 14, Section 15064.5(b)]. CEQA Historical Resources include resources that are eligible for the NRHP or the CRHR [CCR Title 14, Section 15064.5(a)]. Such resources can be buildings, structures, and facilities from the historic period and prehistoric and historic archaeological sites. Demolition or alteration of eligible buildings, structures, and features to the extent that they would no longer be eligible would result in a significant impact. Whole or partial destruction of eligible archaeological sites would result in a significant impact. In addition to impacts from construction resulting in destruction or physical alteration of an eligible resource, impacts to the integrity of setting (sometimes termed "visual impacts") of eligible buildings and above-ground

structures and facilities in the Project area could also result in significant impacts. All potentially significant impacts would occur as a result of construction.

4.2 Method of Analysis

Paleontology

A paleontological assessment consisting of a stratigraphic inventory, a paleontological resource inventory, and a field survey was completed by AECOM for the 2010 Volume I, Draft EIR/EIS, South of U.S. 50 Specific Plan Project (Folsom and USACE 2010). The purpose of the assessment was to determine if paleontological resources were present in or adjacent to the Project Area and assess the sensitivity of the Project Area for undiscovered paleontological resources.

Cultural Resources

The Project Area has been subjected to a cultural resources inventory and evaluations of significance by professional archaeologists meeting the Secretary of the Interior's Professional Qualifications Standards. Those studies have been documented in confidential technical reports, which were used to conduct an assessment of development activities related to the Proposed Project and the alternatives under consideration. These Project activities were evaluated for their potential to disturb these resources through direct action (e.g., development of roads and utility lines through known sites) or indirect activity (e.g., increasing visibility of and access to sensitive cultural resources that could lead to vandalism or looting).

4.3 Project-Specific Impacts and Mitigation Measures

The following discussion of impacts to paleontological and cultural resources is based on the implementation of the proposed project in comparison to existing conditions and the standards of significance presented above.

Paleontology

Paleontological resources have not been previously identified within the Project Area; however, two geologic formations in the Project Area are considered to have a potential to yield paleontological resources: the Ione Formation and the Mehrten Formation. These formations may be penetrated through the subsurface installation of sewer and water lines or other infrastructure elements described in the project description.

Cultural Resources

Cultural resources identified within the Project Area include the remains of historic-era activities, in particular, those related to Gold Rush-era and later mining operations. These consist of the

remains of small placer mines, numerous ditches and remains of similar water conveyance infrastructure, cabin sites, and other structure foundations, tailings piles, and refuse scatters.

Based on the inventories and evaluations of eligibility performed to date, there exist the following cultural resources within the Project Area that are all sites from the historic period and constitute Historical Resources for the purpose of CEQA:

- The Alder Creek Corridor Mining District plus two contributing elements
- The Rhoades' Diggings Mining District plus 57 contributing elements and another 9 contributing elements that are also individually eligible, including the Rhoades' Branch Ditch
- Seven individually eligible sites that are not contributing elements to any district, including the Keefe-McDerby Mine Ditch
- One railroad*

*this resource is the only Historical Resource under CEQA that is not also a Historic Property under Section 106 NHPA.

In total, there are two historic mining districts and 76 sites within the Project Area that are considered historical resources for the purpose of CEQA. This is a subset of the entire inventory of cultural resources in the Project Area; the balance of resources are not eligible (not significant) and are not considered Historical Resources under CEQA.

Preservation in place was considered for the Historical Resources during the project planning process. Factors weighed in this consideration included the presence of other biological or water resources and restrictions on the flexibility of locations of engineering, roadway access, and utilities required to service the Project. These factors were weighed during the preparation of finding of effect documentation, prepared under the First Amended Programmatic Agreement.

Preservation in place of the Alder Creek Corridor Mining District and Rhoades' Diggings Mining District *in their entirety* is not feasible because they compose about half of the Specific Plan area, and preservation in place would be incompatible with the goals and objectives of the project. Moving the infrastructure to avoid all of the loci and features within the district is not possible, due to the density of the resources. Avoidance of as many features as possible has already been achieved through redesign during the planning process.

Preservation in place of the seven individually eligible sites *in their entirety* is not feasible for the same reasons, and because preservation of those not located within the district boundaries would require the infrastructure to shift and impact biological resources and waters of the US. In addition, two of the individually eligible sites (Rhoades' Branch Ditch and Keefe Mc-Derby

Mine Ditch) meander throughout the Specific Plan Area, with most of the resources being located outside of the Backbone.

However, preservation of portions of many of these contributing elements and individually eligible sites was achieved though the preparation of the Determination of Effect Report for the Backbone Infrastructure Permit Area, prepared under the original Programmatic Agreement. Through that process, preservation in place within open space of portions of at least seven individually significant resources was achieved, in addition to a large number of contributing elements to historic districts. Preservation of these resources will be managed through the Open Space Management Plan being prepared for the Specific Plan Area.

Preservation in place of the railroad and White Rock Road is feasible and these will remain in place and operational. Several crossings of the railroad will be required, but will be designed according to applicable safety and local standards and these crossings will not relocate or significantly impact the railroad's historical integrity. White Rock Road will remain in its existing alignment.

4.4.4-1 Impact: The Project will cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5.

Installation of subsurface utilities and related infrastructure, which may include trenching, grading, or jacking and boring, will impact the two historic mining districts and 76 archaeological sites, which are Historical Resources, within the Project Area. This impact is considered to be significant because the resources will be subjected to a loss of integrity as a result of the project activities (the resources will be destroyed and the characteristics that made the resource eligible will be materially impaired). Compliance with the procedures for mitigating significant impacts presented in the First Amended Programmatic Agreement for the Specific Plan Project (ECORP 2013) and Historic Property Management Plan (Westwood et al. 2013) would reduce potential adverse impacts to *Less Than Significant with the implementation of Mitigation Measure 4.4-1(a).*

Mitigation Measure ***4.4-1(a): Comply with the First Amended Programmatic Agreement and Carry Out Mitigation***

The FAPA provides a management framework for identifying historic properties and historical resources, determining adverse effects, and resolving those adverse effects with appropriate mitigation. Proof of compliance with the applicable procedures in the FAPA and implementation of applicable HPTPs (Westwood and Knapp 2013) with regard to mitigation for the individually eligible sites and contributing elements to the districts shall be provided to the City prior to authorization of any ground disturbing activities in any given segment of the Project Area. Proof of compliance is defined as written approval from the US

Army Corps of Engineers of all applicable mitigation documentation generated from implementation of an approved HPTP and includes the following mitigation actions:

- *Historic American Engineering Record documentation of the Keefe-McDerby Mine Ditch (P-34-1475) and Rhoades' Branch Ditch (P-34-1742):*
  - *In order to determine the appropriate level of documentation necessary, the USACE shall first consult with the National Park Service (NPS), which administers the HAER program. Consultation with the NPS will be initiated through the submission of the DPR site record and copies of applicable technical reports with a request for review and issuance of a stipulation letter. Unless an objection to the requirements of the stipulation letter is expressed and resolved through the process outlined in the FAPA, the level of documentation stipulated by the NPS shall be implemented and all documentation will be approved by the USACE and NPS prior to ground-disturbing activities affecting the resource, or as governed by the permit conditions. Focused archival research conducted as part of the HAER documentation shall be incorporated into the revised cultural context statement for the SPA via the Historic Property Synthesis report. A non-archival set of the final documentation shall be submitted to the City.*
- *Data recovery excavations of sites P-34-4612, -1746, -1788, -1910, 1911, -4714, and -2166*
  - *Data recovery shall follow the standards and guidelines in the HPTP and shall include at least 4 1m-x-1m excavation units. The results of the data recovery, including results of excavation, laboratory analysis, artifact analysis, and archival research, shall be documented in a confidential data recovery technical report, which shall be submitted to the City.*
- *Documentation of White Rock Road, P-34-1555*
  - *Documentation shall consist of focused archival research, field photography, videography, and mapping, extensive enough to capture the setting, alignment, and association with adjacent features. Copies of the documentation shall be submitted to the City.*
- *Landscape Mapping of Districts*
  - *Low level aerial photography and topographic mapping of the districts within the entire APE will be completed, which includes both contributing and non-contributing elements. Color multiband digital photography will be collected at or better than 0.5-foot pixel resolution, equating to 1"=100' scale in traditional imagery.*

Topographic data was already acquired for most of the districts by aircraft-mounted LIDAR equipment with an approximate ground point spacing of better than one meter, allowing for the creation of 1-foot contours at 1"=100' scale, which fulfills the National Mapping Accuracy Standards. The digital aerial photographs and topographic data will be incorporated into a Geographic Information System database with the ACCMD boundaries delineated, as established below. Preservation and archiving of digital imagery and topographic data shall be carried out in accordance with the requirements of Attachment G of the PHPS (Westwood et al. 2011).

- *The district boundaries will be permanently established and mapped to establish permanent boundaries for the district within the APE with sub-meter accuracy. The verification will define the boundaries of the district within the APE using an updated DPR 523A (Primary Record) form, color photography, and a district-level plan map. The feature records for each element of the district will be updated to reflect the new mapping data.*

- *Geoarchaeological monitoring*
  - *Due to a potential for deeply buried archaeological resources down to a depth of 1.5 meters (approximately 5 feet) below soil formations known as the T-2 terrace, where colluvial deposits grade onto the T-2 terrace, and along the distal edge of tributary alluvial fans, all ground disturbing activity in those areas shall be monitored by a qualified professional archaeologist with a specialization in geoarchaeology. Once subsurface disturbance extends beyond 1.5 meters below surface, monitoring is no longer needed. .*

    A confidential map showing the locations of required monitoring has been submitted to the City. The City shall apply a map condition that requires geoarchaeological monitoring in those locations only, and proof of compliance is a copy of the monitoring report submitted to the City.

Mitigation Measure *4.4-1(b): North of US Highway 50*

Once the water pipeline alignment and booster pump station locations are finalized, the City's Community Development Department and applicant shall comply with the following general procedures for identification, evaluation, and treatment of historical resources under CEQA. Management of cultural resources eligible for or listed on the CRHR under CEQA mirrors management steps required under Section 106. These steps may be combined with deliverables and management steps performed for Section 106 provided that management documents prepared for the FAPA also clearly reference the CRHR listing criteria and significance thresholds that apply under CEQA. The following steps and documents may be combined with the phasing

of management and documents prepared pursuant to the FAPA (if a Corps permit is required) to minimize the potential for inconsistency and duplicative management efforts. The City of Folsom Community Development Department will consult with the Corps when applicable.

Prior to ground-disturbing work for each element, the project applicant(s), with City of Folsom Community Development Department oversight, shall retain the services of a qualified professional who meets the applicable Professional Qualifications Standards of the Secretary of the Interior to perform the following actions:

- ☐ *Perform an inventory of cultural resources within each individual element footprint, subject to approval by the City of Folsom Community Development Department. The inventory shall include a current records search and literature review from the North Central Information Center and an intensive pedestrian survey to identify any cultural resources inside the project footprint, including archaeological sites, historic buildings and structures, cultural landscapes, or districts. The inventory report shall follow the California Office of Historic Preservation's Archaeological Resource Management Reports: Recommended Contents and Format and include confidential Department of Parks and Recreation (DPR) site records and maps for all resources identified within the footprint. The report shall identify locations that are sensitive for undiscovered cultural resources based upon the location of known resources, geomorphology, and topography.*

- ☐ *Evaluate all cultural resources relative to Criteria 1, 2, 3, and 4 of the CRHR through an appropriate combination of archival or archaeological research, and based on an appropriate prehistoric and historic context that identifies relevant prehistoric, ethnographic, and historic themes and research questions. The prehistoric and historic context statements shall be used to determine the significance of identified resources and appropriate treatment of resources determined eligible for the CRHR (or NRHP), which are considered Historical Resources for the purpose of CEQA.*

- ☐ *For each Historical Resource within the Project footprint, determine if implementation of the individual project development phase would result in damage or destruction of Historical Resources. The findings shall be reviewed by the City of Folsom Community Development Department for consistency with the significance thresholds and treatment measures provided in the FPASP EIR/EIS, and FAPA (if applicable).*

- ☐ *Where possible, configure or redesign the project to avoid impacts on Historical Resources. Alternatively, these resources may be preserved in place if possible, as suggested under California Public Resources Code Section 21083.2.*

- ☐ *For Historical Resources that cannot feasibly be avoided and will be significantly impacted by the Project, prepare a treatment and mitigation plan that may include, but is not limited to the following. The measures shall be reviewed by the City of Folsom Community Development Department for consistency with the*

significance thresholds and standards provided in the FPASP EIR/EIS, and in consultation with the Corps for compliance with the FAPA (if applicable).

- *Monitoring of ground-disturbing work in areas determined by the qualified professional to be highly sensitive for known or unknown cultural resources, if appropriate. The identification of sensitive locations subject to monitoring during construction of each individual development phase shall be performed in concert with monitoring activities performed under the FAPA to minimize the potential for conflicting requirements.*
- *Data recovery excavations for resources that are eligible for listing under CRHR Criterion 4 because of the data they contain (which may contribute to research).*
- *For historical architectural, engineered, or landscape features, treatment measures may consist of a preparation of interpretive, narrative, or photographic documentation.*

☐ *All technical and mitigation documentation is subject to approval by the City of Folsom Community Development Department, in consultation with appropriate agencies when applicable.*

The potential also exists for resources to be discovered during construction earthwork and the potential exists for damage to or destruction of previously unknown cultural resources during ground disturbing activities. However, impacts to unknown resources would be less than significant with implementation of Mitigation Measure 4.4-1(b), which is similarly required by the HPTP.

Mitigation Measure *4.4-1(b): Conduct Construction Worker Awareness Training, Stop Work if Cultural Resources are Discovered, Assess the Significance of the Find, and Perform Treatment or Avoidance as Required.*

To reduce potential impacts to previously undiscovered cultural resources, the Project applicant(s) shall do the following:

- *Before the start of ground-disturbing activities, the Project applicant(s) shall retain a qualified archaeologist to conduct training for construction supervisors to inform them about the possibility of encountering buried cultural resources, and inform them of the proper procedures should cultural resources be encountered. Proof of the contractor awareness training shall be submitted to the City in the form of a copy of training materials and the completed training attendance roster.*

- *Should any cultural resources, such as structural features, bone or shell, artifacts, or architectural remains be encountered during any construction activities, work shall be suspended within 200 feet of the find and the City of Folsom and US Army Corps of Engineers (USACE) shall be notified immediately. The City shall retain a qualified archaeologist who shall*

conduct a field investigation of the specific site and shall evaluate the significance of the find by evaluating the resource for eligibility for listing on the CRHR and the NRHP. If the resource is eligible for listing on the CRHR or NRHP and it would be subject to disturbance or destruction, the City shall require that the resource be treated with appropriate mitigation measures prior to work resuming, such as data recovery excavation or field documentation. The City of Folsom and USACE shall be responsible for approval of recommended mitigation if it is determined to be feasible in light of the approved land uses, and shall implement the approved mitigation and seek written approval on mitigation documentation before resuming construction activities at the archaeological site.

4.4.4-2 Impact: The Project will cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5

Archaeological resources within the Project Area have not been discovered. However, impacts to unknown resources would be less than significant with implementation of Mitigation Measure 4.4-1(a) and (b).

4.4.4-3 Impact: The project will directly or indirectly destroy a unique paleontological resource on site or unique geologic features

The Project Area has a low potential for containing nonrenewable paleontological resources (Folsom and USACE 2010). However, impacts to unknown resources would be less than significant with implementation of Mitigation Measure 4.4-1(c).

Mitigation Measure

4.4-1(c): Conduct Construction Worker Awareness Training, Stop Work if Paleontological Resources are Discovered, Assess the Significance of the Find, and Prepare and Implement a Recovery Plan as Required.

- *Before the start of any earthmoving activities, the Project applicant(s) shall retain a qualified professional to train all construction personnel involved with earthmoving activities, including the site superintendent, regarding the possibility of encountering fossils, the appearance and types of fossils likely to be seen during construction, and proper notification procedures should fossils be encountered. This training shall be included in the archaeological contractor awareness training program.*

- *If paleontological resources are discovered during earthmoving activities, the construction crew shall immediately cease work in the vicinity of the find and notify the City of Folsom. The Project applicant(s) shall retain a qualified paleontologist to evaluate the resource and prepare a recovery plan in accordance with Society of Vertebrate Paleontology guidelines (1996). The recovery plan may include, but is not limited to, a field survey, construction monitoring, sampling and data recovery procedures, museum storage coordination for any specimen recovered, and a report of findings. Recommendations in the recovery plan that are determined*

by the lead agency to be necessary and feasible shall be implemented before construction activities can resume at the site where the paleontological resources were discovered.

4.4.4-3 Impact: The project may disturb any human remains, including those interred outside of formal cemeteries

There are no known human cemeteries or burials located within the Project Area, and none have been detected through subsurface excavation. Impacts to potential human remains within the Project Area are identical to those expressed in Impact 4.4.4-1, above, for all archaeological resources. However, impacts to unknown resources would be less than significant with implementation of Mitigation Measure 4.4-1(d).

Mitigation Measure ***4.4-1(d): Suspend Ground-Disturbing Activities if Human Remains are Encountered and Comply with California Health and Safety Code Procedures.***

In the event that human remains are discovered, construction activities within 150 feet of the discovery shall be halted or diverted and the requirements for managing unanticipated discoveries in Mitigation Measure 4.4-1(b) shall be implemented. In addition, the provisions of Section 7050.5 of the California Health and Safety Code, Section 5097.98 of the California Public Resources Code, and Assembly Bill 2641 shall be implemented. When human remains are discovered, state law requires that the discovery be reported to the County Coroner (Section 7050.5 of the Health and Safety Code) and that reasonable protection measures be taken during construction to protect the discovery from disturbance (AB 2641).

If the Coroner determines the remains are Native American, the Coroner shall notify the Native American Heritage Commission, which then designates a Native American Most Likely Descendant (MLD) for the project (Section 5097.98 of the Public Resources Code). The designated MLD then has 48 hours from the time access to the property is granted to make recommendations concerning treatment of the remains (AB 2641).

If the landowner does not agree with the recommendations of the MLD, the NAHC can mediate (Section 5097.94 of the Public Resources Code). If no agreement is reached, the landowner must rebury the remains where they will not be further disturbed (Section 5097.98 of the Public Resources Code). This will also include either recording the site with the NAHC or the appropriate Information Center; using an open space or conservation zoning designation or easement; or recording a document with the county in which the property is located (AB 2641).

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APPENDIX D

Hydromodification Memorandum

Memorandum

To: Ken Giberson, MacKay and Somps

From: Scott Brown and Ed Ballman

Date: January 17, 2014

Subject: Preliminary basin sizing for hydromodification control and water quality treatment for the Folsom Plan Area Storm Drainage Master Plan, Sacramento County, California.

Introduction

MacKay and Somps Civil Engineers (MSCE) has requested that Balance Hydrologics (Balance) provide interim sizing and outlet configuration of water-quality-treatment and hydromodification-control basins to support their effort in developing a Storm Drainage Master Plan for the Folsom Sphere-of-Influence (SOI) Specific Plan. The project area encompasses 3,600 acres south of the City of Folsom, bounded by Highway 50, Prairie City Road, White Rock Road, and the Sacramento/El Dorado County line (MKS, 2013).

All new and redevelopment projects planned in Sacramento County must comply with the recently-updated NPDES Permit (CRWQCB, 2008), which includes provisions for storm-water quality treatment (SSQP, 2007) and control of hydromodification effects (SSQP and others, 2013). This memo describes the process and summarizes the results of the analysis that Balance conducted to demonstrate compliance with these requirements for the purposes of stormwater planning.

Hydromodification

The term 'Hydromodification' refers to changes in natural runoff characteristics due to disturbances in the watershed. Within the NPDES regulatory context, it is most commonly used with reference specifically to urban development. The increase in impervious area and the number of drainageways[1] associated with urbanization

[1] Urbanization also results in longer and denser drainageways, such as roof gutters, drains, curbs, and storm drains, resulting in water entering the creek system much more rapidly than under

reduce infiltration of rainfall and increases runoff, diverting more water at a faster rate to local streams. These processes typically increase both the peak flow and the total volume of water in a stream for a given rainfall amount. The effect is proportionately most prominent for smaller rainfall events, when a higher percentage of the rainfall is diverted to runoff rather than infiltration. Increases in the amount and timing of runoff can cause changes in stream channel morphology, including reach-wide erosion of the streambanks and down-cutting of the channel bed.

Hydromodification effects can be controlled or reduced by implementing features or practices to encourage infiltration and/or detain excess water in a basin before it gets to the stream. Basins are typically done on a sub-basin or regional scale, with an outlet designed to match the pre-existing flow conditions, releasing excess stormwater volume at flows below the erosion threshold of the stream to which the water is being discharged. The Sacramento County Hydromodification Management Plan (HMP; SSQP and others, 2013) outlines options for controlling hydromodification in order to meet the requirements of the NPDES permit. Hydromodification (HM) controls must be designed to control stormwater runoff such that volume and duration do not exceed pre-project conditions for flows between 25 percent of the 2-year[2] and the 10-year recurrence pre-project flow.

Water Quality

The NPDES permit requires that Permittees reduce the discharge of pollutants in urban runoff to the maximum extent practicable. Typically treatment of stormwater quality is achieved through the implementation strategies that reduce runoff and encourage infiltration, and/or remove pollutants from stormwater through flow- or volume-based treatment facilities designed to filter, settle-out, or break down various pollutants. The Stormwater Quality Design Manual (SSQP, 2007) outlines the standard procedures for

natural conditions due to the high connectivity of impervious surfaces and drainage networks, plus diminished infiltration, subsurface flow, and depression storage.

[2] 45 percent in watersheds with channels that have low susceptibility to hydromodification effects.

the Sacramento and South Placer Regions to satisfy the water-quality treatment aspects of the NPDES permit.[3]

Approach

Balance used the newly released Sacramento Area Hydrology Model (SAHM) to assess compliance with flow duration criteria outlined in the Sacramento HMP (SSQP, 2013). SAHM is a user interface and analysis tool designed by Clear Creek Solutions, Inc. specifically for the purposes of assessing hydromodification impacts and designing hydromodification control facilities. The model was built on the HSPF computational engine, a continuous simulation model developed jointly by the EPA and USGS.

Because integrated water quality/hydromodification (WQ/HM) basins are being used for this project rather than standard hydromodification configurations, basin orifices were manually sized using an excel spreadsheet basin discharge model and the results were input into SAHM as stage-area-storage-discharge tables. After testing hydromodification (HM) compliance for the initial configuration, orifice sizes were altered on an iterative basis until the basin "passed" HM control criteria within SAHM.

A multi-stepped approach to address hydromodification compliance was used for the project as a whole:

1. SAHM was used to model each sub-basin within the planning area individually to provide an initial estimate of the required HM control volume and outlet configuration.

    a. For headwater sub-basins (those that encompass an entire, self-contained watershed), different pre- and post-project areas were used where sub-

[3] The Sacramento County HMP (SSQP and others, 2013) states that the Stormwater Quality Design Manual will be updated to incorporate integration with HM control measures. A draft version of this report was released in November 2013, but was not available at the time this analysis was conducted. The 2007 version of the manual was used as guidance for this project.

basins will change as a result of the project to assess compliance in the receiving stream channel[4].

b. For sub-basins further down within the Alder Creek watershed, the post-project areas for both the pre- and post-project conditions were used[5].

2. For the Alder Creek watershed, a fully-networked model upstream of Prairie City Road was constructed within SAHM. The model accounts for timing of flows within the various tributary basins, as well as cumulative changes in watershed area as a result of the project. A point-of-compliance was set in Alder Creek downstream of each sub-basin outfall[6]. Preliminary WQ/HM basin sizes obtained from the individual sub-basin models were entered in to the post-project networked model configuration. Where preliminary basin sizing was not adequate to pass HM flow duration criteria within the networked model (usually because of changes in cumulative drainage area), those basins were iteratively re-sized until compliance was reached.

3. Where the initial basin configurations were undersized for the needed HM control volume, MSCE increased the storage and/or adjusted sub-basin drainage areas such that the full HM control volume could be contained. For some sub-basins, this involved creating a separate WQ basin and/or an expanded basin that

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[4] Watersheds that increase in area post-project require additional control volume for HM compliance, as the receiving channel is not in equilibrium with the large watershed area, even independent of impervious surfaces.

[5] It is often difficult to assess the incremental change in watershed area in sub-basins that do not have discrete discharge points under pre-project conditions. Using the post-project sub-basin area as the pre-project basis for the model provided an easy way to obtain a preliminary estimate of HM control volume and basin configuration as an input to the networked model, which does account for changes in watershed area.

[6] For some outfalls that were in close proximity, a single POC was used downstream of both outfalls. See existing and post-project condition model schematics at the beginning of the 'SAHM Alder Creek network report' portion of Appendix A for the relationship of numbered points-of-compliance to basin outfalls.

combines HM and flood control requirements. In addition, using the networked SAHM analysis, HM basin deficiencies were offset using in-stream flood control basins (e.g. DB 6).

4. The final parameters of the interim WQ/HM basins were then provided to MSCE, for incorporating into the flood control model[7].

Hydromodification parameters and key assumptions

The following parameters and assumptions were used for the hydromodification analysis:

- The Orangevale long-term, hourly precipitation record was used for all SAHM analyses. Adjustment factors ranged from 1.045 at the western end of the project site to 1.182 at the northeastern corner of the site. The networked model used a single rainfall point at the center of the project area (1.091adjustment factor).
- Design flow range for the HM analysis is $0.25Q_2$ to Q_{10}.
- No infiltration in HM basins
- No infiltration in stream channel
- Stream roughness of 0.035 to 0.04 (based on vegetation cover as seen in aerial photographs)

Water quality parameters and key assumptions

The following parameters and assumptions were used in the design of the water-quality basins:

- Outlet orifices were designed to drain WQ volume within 40 to 48 hours;
- Basins were assumed to have no infiltration;
- No WQ swales, self-treating areas, or other LID features were included (conservative estimate of needed WQ basin size);
- The HM volume was "stacked" on top of WQ basin and WQ basin volumes were included in the SAHM analysis.

[7] Because the flood-control facilities are designed to freely pass the 10-year storm (the upper limit of required control for hydromodification), there was no need to enter those basins into the networked SAHM analysis.

Basin and outlet configuration

HM/WQ basins were designed with the following parameters:

- Basin configurations (depth/area/storage curves) were provided by MSCE for each development sub-basin within the project.
- Each basin outlet consists of three orifices (rectangular). The lowermost orifice was sized to meet the 48-hour water quality volume drainage time. The upper two orifices (set above the elevation of the water-quality volume) were sized to meet the hydromodification flow duration criteria.
- A wide overflow weir was set at the elevation of the 10-year flow. For "combination" basins that will also provide flood control, any additional flood detention volume is contained above the elevation of this 10-year flow weir.
- Where additional storage was needed to provide adequate hydromodification control, MSCE re-designed the basin sizes and Balance used the new basin parameters to re-optimize outlet structures to demonstrate compliance with the HMP.

Results

Table 1 presents the results of our analysis, including water quality and hydromodification volumes, and outlet sizes and elevations. Full SAHM output reports for all points-of-compliance are presented in Appendix A. The characteristics of each of the basins are listed in the Storm Drainage Master Plan (MSCE, 2014).

Table 1 lists only the results for the water quality and hydromodification portions of the basins. The Storm Drainage Master Plan (MSCE, 2014) summarizes the outlet sizing and other parameters used for the flood control portion of "combination" basins and other basins that also provide flood detention.

Limitations

The analysis described above provides interim sizing and basin configuration for master planning purposes; this analysis is not intended for final design purposes. Outlet structures were optimized to show compliance with the Sacramento HMP using the Sacramento Area Hydrology Model at the project planning scale, and are not intended as design-level configurations that are ready for construction.

Additional optimization and design is required during the detailed design phase for each portion of the project. The HM control volumes listed herein could be further refined with a more complex outlet structure design, potentially reducing HM control volume.

Implementation of low impact development (LID) and other runoff reducing features has not been considered as part of this analysis. Use of these features during phase-specific design may result in lower HM control volumes than those listed herein.

References

California Regional Water Quality Control Board (CRWQCB) Central Valley Region, 2008, Waste Discharge Requirements for the Cities of Citrus Heights, Elk Grove, Folsom, Galt, Rancho Cordova, Sacramento, and County of Sacramento. NPDES No. CAS082597, Order No. R5-2008-0142, 150p.

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MacKay and Somps Civil Engineers (MSCE), 2014, Folsom Storm Drainage Master Plan, January 17, 2014.

Sacramento Stormwater Quality Partnership (SSQP), CBEC, and Brown and Caldwell, 2013, Sacramento Stormwater Quality Partnership Hydromodification Management Plan. Reports submitted to the Central Valley Regional Water Quality Control Board, dated July 29, 2011, revised February 14, 2013, 486p.

Sacramento Stormwater Quality Partnership (SSQP), 2007, Stormwater Quality Design Manual for the Sacramento and South Placer Regions. Available at: http://www.beriverfriendly.net/newdevelopment/stormwaterqualitydesignmanual/, 271p.

TABLES

Table 1. Intermim sizing and outlet structure configuration for water-quality/hydromodification control basins for the Folsom SOI specific plan. Note that basins were sized for hydromodification compliance on a cumulative basis within the project area and where flows exit the project boundary. Outlet structures were optimized to show compliance with the Sacramento HMP using the Sacramento Area Hydrology Model at the project planning scale, and are not intended as design-level configurations that are ready for construction. Additional optimization and design is required during the detailed design phase for each portion of the project.

Basin	Water Quality Volume	Water quality orifice [1, 2]		Combined Water Quality/ Hydromodification Control volume [7]	Lower hydromodification orifice			Upper hydromodification orifice			Flowline of HM basin overflow
		Width	Height		Width	Height	Flowline Stage [3]	Width	Height	Flowline Stage [3]	
	(ac-ft)	*(ft)*	*(ft)*	*(ac-ft)*	*(ft)*	*(ft)*	*(ft)*	*(ft)*	*(ft)*	*(ft)*	*(ft)*
Combo 1 [5]	0.51	0.33	0.33	2.42	0.50	1.5	1.2	4.8	0.83	2.7	3.6
Combo 2 [5]	3.51	0.42	0.42	10.32	1.0	1.0	2.9	5.3	2.4	4.8	7.2
Combo 3 [5]	2.92	0.50	0.50	8.60	1.5	0.5	1.7	4.5	2.3	2.2	4.5
Combo 4 [5]	0.52	0.08	0.17	0.92	1.7	0.33	5.5	8.0	0.58	5.9	6.9
Combo 5 [5]	1.70	0.33	0.33	5.79	0.67	1.0	1.6	4.6	1.8	2.8	4.6
HMB 1 [6]	2.38	0.25	0.25	--	--	--	--	--	--	--	8.0
HMB 2	1.11	0.21	0.17	2.02	0.58	0.25	5.4	0.67	2.0	6.0	8.0
HMB 3	0.68	0.17	0.17	2.02	0.67	0.33	3.9	1.5	1.0	5.5	8.0
HMB 4	0.69	0.17	0.17	1.48	0.25	0.5	3.7	1.0	1.5	4.5	6.0
HMB 5	0.78	0.17	0.17	2.02	0.5	0.5	4.3	1.2	2.0	6.0	8.0
HMB 6 [6]	5.39	0.42	0.33	--	--	--	--	--	--	--	7.2
HMB 7	0.19	0.08	0.17	0.70	0.25	0.5	1.5	1.0	1.5	2.5	4.0
HMB 8	20.42	0.67	0.67	48.23	1.8	1.8	10.4	3.6	7.1	12.8	20.0
HMB 9	0.25	0.13	0.13	1.17	0.25	0.33	1.9	0.83	2.2	3.5	5.7
HMB 10	1.62	0.33	0.25	6.13	0.5	0.83	2.6	2.9	2.5	5.0	7.6
HMB 11	0.25	0.13	0.13	0.92	0.25	0.50	1.9	1.5	1.5	3.5	5.0
HMB 12 [8]	1.70	0.25	0.25	4.31	1.0	0.50	4.0	3.1	2.5	7.0	8.0
HMB 13	0.60	0.17	0.13	1.93	0.33	0.50	3.6	0.83	2.6	5.1	7.8
HMB 14	1.02	0.38	0.33	4.59	0.50	0.50	2.0	2.0	2.4	4	6.5
HMB 15	1.07	0.29	0.25	9.48	0.25	0.25	1.9	0.5	4.2	5.4	9.6
HMB 16 [9]	3.08	0.50	0.42	18.84	1.0	1.0	2.0	2.5	1.9	3.3	9.2
HMB 17	2.71	0.38	0.33	8.68	1.2	0.5	3.2	3.0	2.7	5.3	8.0
HMB 18	2.24	0.33	0.33	6.77	1.0	0.5	3.1	3.8	1.9	4.7	7.2
DB 6 [11]	--	--	--	11.29	2.0	1.0	0.0	3.5 / 6.5	1.3 / 3.5	3.0 / 5.0	9.1
HMB 19	6.39	0.42	0.42	--	--	--	--	--	--	--	10.0
DB 7 [11]	--	--	--	16.06	1.0	3.0	0.0	1.8 / 8.0	2.0 / 5.2	3.5 / 5.7	10.9
HMB 20 WQ	5.16	0.42	0.33	--	--	--	--	--	--	--	10.0
HMB 21	0.28	0.08	0.21	0.55	0.33	0.25	2.0	1.6	0.83	2.5	3.4
HMB 22	2.88	0.33	0.33	7.88	0.83	2.0	4.5	4.75	2.1	7.0	9.1
HMB 23 [10]	0.66	0.25	0.25	9.41	0.33	0.67	1.1	--	--	--	8.8
HMB 24	2.87	0.33	0.33	8.44	1.8	0.67	4.3	3.0	3.7	6.3	10.0
DB 9 [11]	--	--	--	4.90	0.83	3.0	0.0	3.0	3.5	5.3	9.1
HMB 25 WQ [13]	3.93	0.33	0.33	4.21	2.0	0.4	7.6	--	--	--	8.0
HMB 26	1.39	0.25	0.25	6.33	0.33	2.0	3.5	1.0	5.1	6.0	11.1
DB 11 [12]	--	--	--	14.41	1.0	1.0	0.0	2.3	5.7	6.0	11.8
HMB 27 WQ [12]	3.81	0.33	0.33	--	--	--	--	--	--	--	7.8

Notes:

[1] Water quality orifices sized to drain water quality volume 40 to 48 hours.

[2] The base of all water quality orifices is set at a depth of 0.0 feet.

[3] The flowline stage of the hydromodification orifices corresponds to the bottom of the stated orifice.

[4] Width, depth, and stage reported to the nearest tenth of a foot, except where values are less than one foot. In such cases, values are to the neares half-inch, reported as decimal feet.

[5] Values for Combo 1, 2, 3, 4, and 5 are for water quality and hydromodification volumes only. These basins are also used for flood control (on top of the hydromodification control volume); characteristics of that portion of the basin are reported separately.

[6] Basin passes HM standards in Alder Creek downstream of discharge point using only the water quality volume for storage.

[7] Basin sizes are conservative in that they do not account for any reductions in hydromodification volume that may be provided by incorporation of LID practices, distrubuted water quality treatment features (e.g. rain gardens) or self-treating impervious areas.

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[8] HMB 12 discharges just upstream of DB2; the point-of-compliance for this basin is at the outlet of DB2.

[9] HMB 16 detains an additional 4.9 acre-feet above the actual required HM storage volume (13.9 af) to compensate for basin deficiencies further downstream; the HM basin is topped by a 3-foot weir outlet with a flowline of 5.9 feet up to the basin maximum of 10.0 feet

[10] HMB 23 is sized to over-detain flows in the mid-range of hydromod control for compliance at the outlet of HMB 21 further downstream; this altered configuration also results in compliance for hydromodifciation requirements in-stream at the discharge point of HMB 25.

[11] DB 6, 7, and 9 are used for in-stream hydromodification control, and control volumes listed are for HM controls only; water quality treatment at adjacent developed area is provided by off-stream water quality basins WQ 19, 20, and 25, repectively. DB 6 and DB 7 were designed with three HM orifices; the "Upper hydromodification orifice" columns have the information for both of the uppermost orifices.

[12] The post-project watershed draining to DB 11 contains a separate water quality basin (WQ 27) to treat urban runoff prior to entering DB 12; DB 12 provides both hydromodification and flood control functions, though volumes listed here do not include the flood control volume.

[13] Basin WQ 25 includes the water quality treatment volume and a small portion of the hydromodification control volume. The remainder of the HM control volume is contained in DB 9.

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APPENDIX A

SAHM Output Reports

SAHM

PROJECT REPORT

General Model Information

Project Name: Combo1_SSD
Site Name:
Site Address:
City:
Report Date: 11/27/2013
Gage: ORANGEVA
Data Start: 1964/10/01
Data End: 2004/09/30
Timestep: Hourly
Precip Scale: 1.05
Version: 2013/08/23

POC Thresholds

Low Flow Threshold for POC1:	25 Percent of the 2 Year
High Flow Threshold for POC1:	10 Year

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Landuse Basin Data

Pre-Project Land Use

Basin 1

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
B,Grass,Steep(2-5%)	14.23
C,Grass,Steep(2-5%)	3.43
D,Grass,Steep(2-5%)	16.53
Pervious Total	34.19

Impervious Land Use	Acres
Impervious Total	0
Basin Total	34.19

Element Flows To:

Surface	Interflow	Groundwater

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Mitigated Land Use

Basin 1

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
B,Grass,Steep(2-5%)	13.19
B,Urban,Steep(2-5%)	0.78
D,Urban,Steep(2-5%)	12.54
C,Urban,Steep(2-5%)	0.33
C,Grass,Steep(2-5%)	0.1
D,Grass,Steep(2-5%)	5.88
Pervious Total	32.82

Impervious Land Use	Acres
Imperv,Steep(2-5%)	5.06
Impervious Total	5.06
Basin Total	37.88

Element Flows To:

Surface	Interflow	Groundwater
SSD Table 1	SSD Table 1	

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Mitigated Routing

SSD Table 1

Depth: 12.75 ft.
Element Flows To:
Outlet 1 Outlet 2

SSD Table Hydraulic Table

Stage (ft)	Area (ac)	Volume (ac-ft)	Manual	NotUsed	NotUsed	NotUsed	NotUsed
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.100	0.550	0.055	0.035	0.000	0.000	0.000	0.000
0.250	0.569	0.143	0.139	0.000	0.000	0.000	0.000
0.500	0.587	0.286	0.309	0.000	0.000	0.000	0.000
0.750	0.604	0.435	0.409	0.000	0.000	0.000	0.000
1.000	0.622	0.587	0.488	0.000	0.000	0.000	0.000
1.250	0.639	0.745	0.576	0.000	0.000	0.000	0.000
1.500	0.657	0.906	0.891	0.000	0.000	0.000	0.000
1.750	0.675	1.073	1.352	0.000	0.000	0.000	0.000
2.000	0.692	1.243	1.916	0.000	0.000	0.000	0.000
2.250	0.710	1.419	2.564	0.000	0.000	0.000	0.000
2.500	0.728	1.598	3.285	0.000	0.000	0.000	0.000
2.750	0.746	1.783	4.267	0.000	0.000	0.000	0.000
3.000	0.763	1.971	7.200	0.000	0.000	0.000	0.000
3.250	0.781	2.164	11.51	0.000	0.000	0.000	0.000
3.500	0.799	2.362	16.79	0.000	0.000	0.000	0.000
3.750	0.817	2.564	23.35	0.000	0.000	0.000	0.000
4.000	0.835	2.771	31.93	0.000	0.000	0.000	0.000
4.250	0.853	2.982	42.11	0.000	0.000	0.000	0.000
4.500	0.870	3.198	53.54	0.000	0.000	0.000	0.000
4.750	0.888	3.418	66.08	0.000	0.000	0.000	0.000
5.000	0.906	3.642	79.61	0.000	0.000	0.000	0.000
5.250	0.924	3.871	94.06	0.000	0.000	0.000	0.000
5.500	0.942	4.105	109.4	0.000	0.000	0.000	0.000
5.750	0.960	4.343	125.5	0.000	0.000	0.000	0.000
6.000	0.978	4.585	142.4	0.000	0.000	0.000	0.000
6.250	0.996	4.832	160.0	0.000	0.000	0.000	0.000
6.500	1.014	5.084	178.3	0.000	0.000	0.000	0.000
6.750	1.033	5.340	197.3	0.000	0.000	0.000	0.000
7.000	1.051	5.600	216.9	0.000	0.000	0.000	0.000
7.250	1.069	5.865	237.2	0.000	0.000	0.000	0.000
7.500	1.087	6.135	258.1	0.000	0.000	0.000	0.000
7.750	1.105	6.409	279.5	0.000	0.000	0.000	0.000
8.000	1.123	6.687	301.6	0.000	0.000	0.000	0.000
8.250	1.142	6.970	324.2	0.000	0.000	0.000	0.000
8.500	1.160	7.257	347.4	0.000	0.000	0.000	0.000
8.750	1.178	7.549	371.0	0.000	0.000	0.000	0.000
9.000	1.197	7.846	395.3	0.000	0.000	0.000	0.000
9.250	1.215	8.147	420.0	0.000	0.000	0.000	0.000
9.500	1.233	8.452	445.2	0.000	0.000	0.000	0.000
9.750	1.252	8.762	470.9	0.000	0.000	0.000	0.000
10.000	1.270	9.076	497.1	0.000	0.000	0.000	0.000
10.25	1.288	9.395	523.8	0.000	0.000	0.000	0.000
10.50	1.307	9.718	550.9	0.000	0.000	0.000	0.000
10.75	1.325	10.05	578.5	0.000	0.000	0.000	0.000

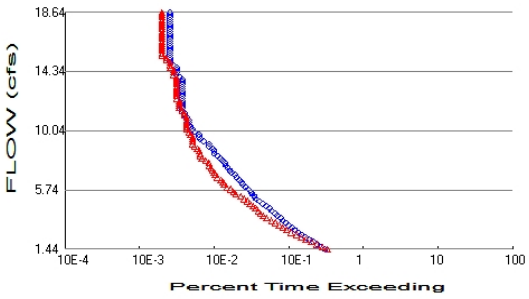
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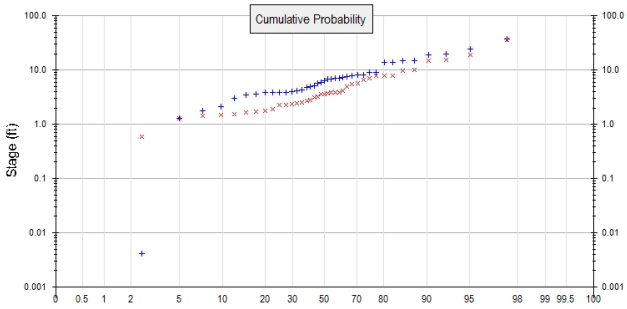
11.00	1.344	10.38	606.6	0.000	0.000	0.000	0.000
11.25	1.362	10.71	635.0	0.000	0.000	0.000	0.000
11.50	1.381	11.06	664.0	0.000	0.000	0.000	0.000
11.75	1.399	11.40	693.3	0.000	0.000	0.000	0.000
12.00	1.418	11.75	723.1	0.000	0.000	0.000	0.000
12.25	1.437	12.11	753.3	0.000	0.000	0.000	0.000
12.50	1.455	12.47	783.9	0.000	0.000	0.000	0.000

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Analysis Results

POC 1





\+ Pre-Project x Mitigated

Pre-Project Landuse Totals for POC #1
Total Pervious Area: 34.19
Total Impervious Area: 0

Mitigated Landuse Totals for POC #1
Total Pervious Area: 32.82
Total Impervious Area: 5.06

Flow Frequency Method: Log Pearson Type III 17B

Flow Frequency Return Periods for Pre-Project. POC #1

Return Period	**Flow(cfs)**
2 year	5.766932
5 year	12.867502
10 year	18.639454
25 year	27.182188

Flow Frequency Return Periods for Mitigated. POC #1

Return Period	**Flow(cfs)**
2 year	3.431468
5 year	7.795958
10 year	14.058215
25 year	22.933393

Annual Peaks

Annual Peaks for Pre-Project and Mitigated. POC #1

Year	**Pre-Project**	**Mitigated**
1965	6.815	4.206
1966	1.794	1.276
1967	7.153	6.538
1968	3.462	1.895
1969	7.443	3.886
1970	5.611	3.711
1971	7.212	3.861
1972	2.119	1.700
1973	13.931	7.130
1974	8.882	3.233
1975	3.802	1.534
1976	0.004	0.598
1977	0.004	0.303
1978	19.538	9.812

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1979	4.828	2.351
1980	5.142	3.143
1981	4.169	2.837
1982	9.088	7.725
1983	14.058	10.105
1984	6.293	4.997
1985	3.913	2.433
1986	24.498	19.113
1987	3.869	2.261
1988	4.239	3.640
1989	7.956	2.551
1990	4.020	1.489
1991	5.930	3.824
1992	8.247	7.977
1993	6.884	3.649
1994	1.273	1.437
1995	36.725	36.516
1996	14.923	5.780
1997	19.156	15.409
1998	14.734	14.607
1999	3.567	2.291
2000	8.176	7.816
2001	3.919	1.753
2002	2.982	1.620
2003	4.872	2.751
2004	6.987	5.428

Ranked Annual Peaks

Ranked Annual Peaks for Pre-Project and Mitigated. POC #1

Rank	Pre-Project	Mitigated
1	36.7249	36.5163
2	24.4983	19.1132
3	19.5384	15.4087
4	19.1556	14.6073
5	14.9232	10.1048
6	14.7339	9.8123
7	14.0575	7.9774
8	13.9306	7.8158
9	9.0876	7.7255
10	8.8825	7.1298
11	8.2474	6.5378
12	8.1758	5.7797
13	7.9564	5.4278
14	7.4433	4.9974
15	7.2117	4.2059
16	7.1527	3.8857
17	6.9871	3.8607
18	6.8839	3.8238
19	6.8151	3.7109
20	6.2933	3.6485
21	5.9302	3.6401
22	5.6114	3.2328
23	5.1419	3.1431
24	4.8725	2.8368
25	4.8280	2.7505
26	4.2391	2.5512
27	4.1691	2.4333
28	4.0201	2.3508

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29	3.9189	2.2910
30	3.9127	2.2609
31	3.8688	1.8946
32	3.8024	1.7534
33	3.5675	1.7000
34	3.4622	1.6197
35	2.9818	1.5342
36	2.1191	1.4893
37	1.7940	1.4372
38	1.2729	1.2759
39	0.0042	0.5982
40	0.0037	0.3025

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Duration Flows

The Facility PASSED

Flow(cfs)	Predev	Mit	Percentage	Pass/Fail
1.4417	1070	1165	108	Pass
1.6154	946	988	104	Pass
1.7892	840	834	99	Pass
1.9629	753	707	93	Pass
2.1366	661	593	89	Pass
2.3103	580	521	89	Pass
2.4840	521	449	86	Pass
2.6577	465	377	81	Pass
2.8314	423	329	77	Pass
3.0052	387	290	74	Pass
3.1789	346	261	75	Pass
3.3526	321	233	72	Pass
3.5263	294	206	70	Pass
3.7000	271	176	64	Pass
3.8737	249	158	63	Pass
4.0474	229	147	64	Pass
4.2212	210	137	65	Pass
4.3949	195	126	64	Pass
4.5686	174	116	66	Pass
4.7423	156	106	67	Pass
4.9160	143	98	68	Pass
5.0897	129	88	68	Pass
5.2634	122	79	64	Pass
5.4372	113	68	60	Pass
5.6109	109	64	58	Pass
5.7846	100	59	58	Pass
5.9583	92	52	56	Pass
6.1320	85	48	56	Pass
6.3057	81	46	56	Pass
6.4794	76	43	56	Pass
6.6532	70	39	55	Pass
6.8269	67	36	53	Pass
7.0006	60	35	58	Pass
7.1743	57	33	57	Pass
7.3480	53	32	60	Pass
7.5217	50	30	60	Pass
7.6954	49	30	61	Pass
7.8692	45	27	60	Pass
8.0429	42	24	57	Pass
8.2166	39	23	58	Pass
8.3903	35	23	65	Pass
8.5640	35	22	62	Pass
8.7377	33	21	63	Pass
8.9115	30	19	63	Pass
9.0852	30	18	60	Pass
9.2589	25	18	72	Pass
9.4326	23	18	78	Pass
9.6063	22	18	81	Pass
9.7800	22	17	77	Pass
9.9537	19	16	84	Pass
10.1275	18	15	83	Pass
10.3012	17	15	88	Pass
10.4749	16	15	93	Pass

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10.6486	16	15	93	Pass
10.8223	16	15	93	Pass
10.9960	15	15	100	Pass
11.1697	14	14	100	Pass
11.3435	14	14	100	Pass
11.5172	13	13	100	Pass
11.6909	13	12	92	Pass
11.8646	13	12	92	Pass
12.0383	13	12	92	Pass
12.2120	13	12	92	Pass
12.3857	13	11	84	Pass
12.5595	13	11	84	Pass
12.7332	13	11	84	Pass
12.9069	13	11	84	Pass
13.0806	13	11	84	Pass
13.2543	13	11	84	Pass
13.4280	13	11	84	Pass
13.6017	13	11	84	Pass
13.7755	13	11	84	Pass
13.9492	12	11	91	Pass
14.1229	11	10	90	Pass
14.2966	11	10	90	Pass
14.4703	11	10	90	Pass
14.6440	11	9	81	Pass
14.8177	10	9	90	Pass
14.9915	9	9	100	Pass
15.1652	9	8	88	Pass
15.3389	9	8	88	Pass
15.5126	9	7	77	Pass
15.6863	9	7	77	Pass
15.8600	9	7	77	Pass
16.0337	9	7	77	Pass
16.2075	9	7	77	Pass
16.3812	9	7	77	Pass
16.5549	9	7	77	Pass
16.7286	9	7	77	Pass
16.9023	9	7	77	Pass
17.0760	9	7	77	Pass
17.2497	9	7	77	Pass
17.4235	9	7	77	Pass
17.5972	9	7	77	Pass
17.7709	9	7	77	Pass
17.9446	9	7	77	Pass
18.1183	9	7	77	Pass
18.2920	9	7	77	Pass
18.4657	9	7	77	Pass
18.6395	9	7	77	Pass

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Model Default Modifications

Total of 0 changes have been made.

PERLND Changes

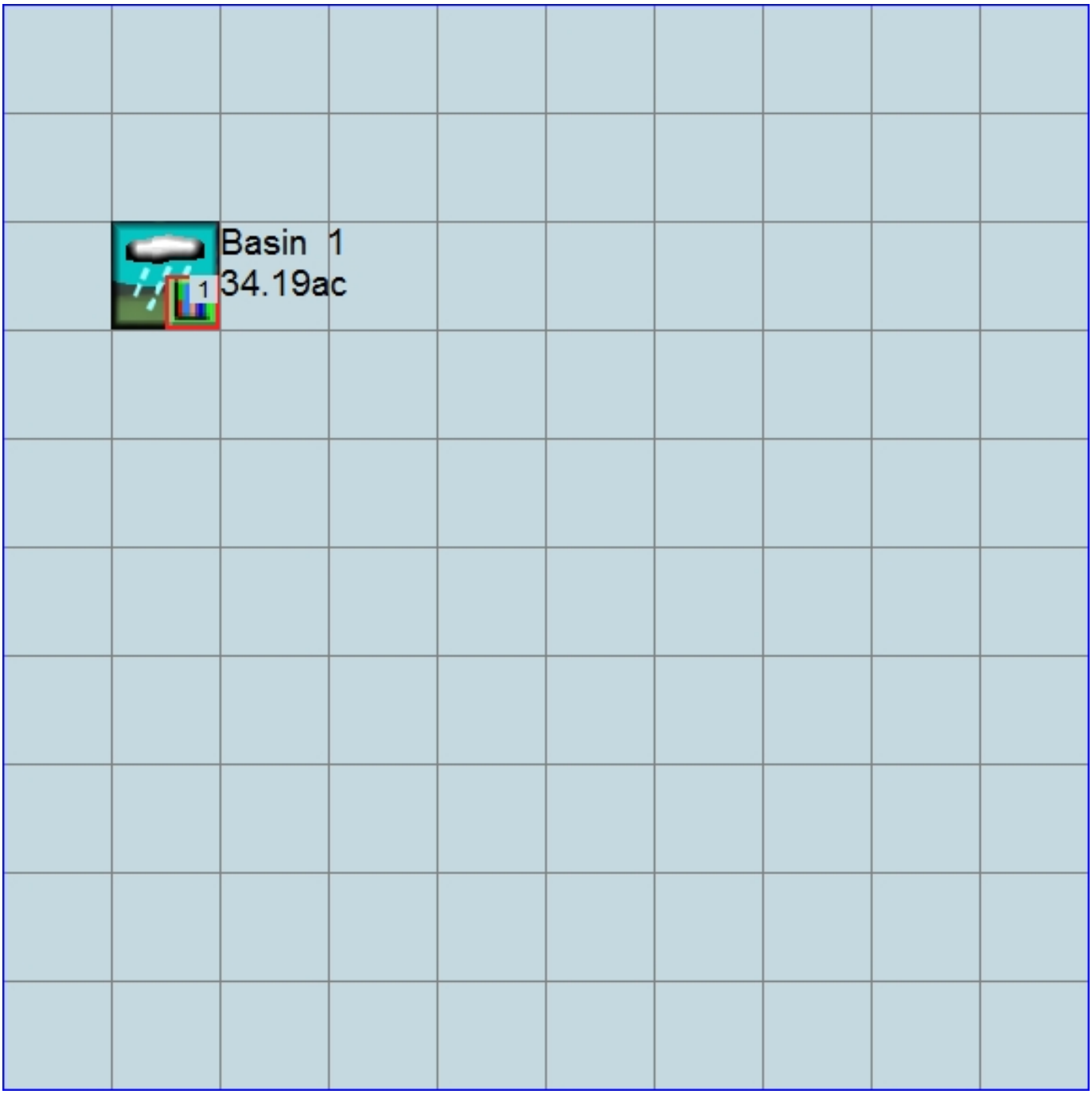
No PERLND changes have been made.

IMPLND Changes

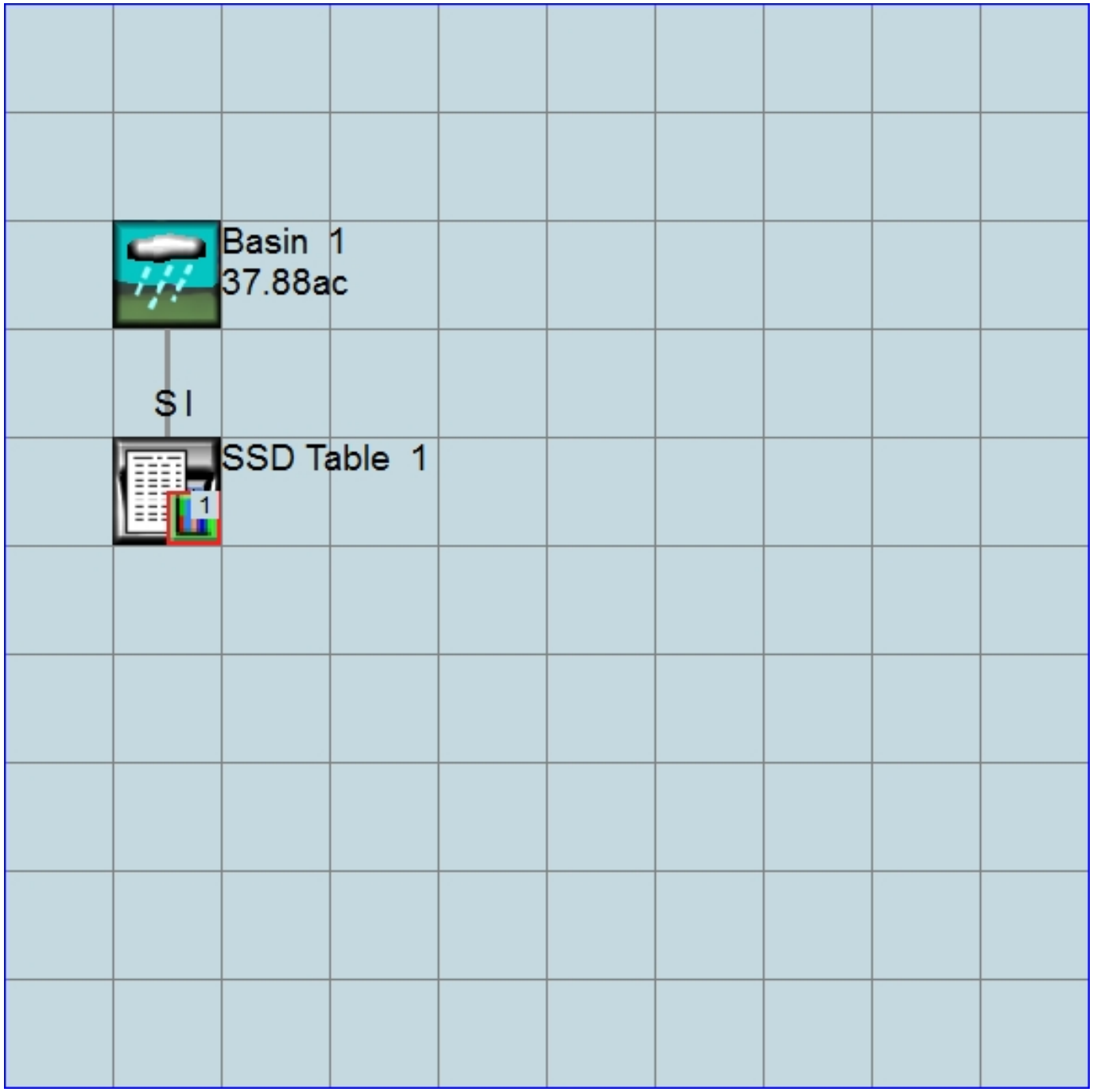
No IMPLND changes have been made.

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Appendix
Pre-Project Schematic



Mitigated Schematic



Pre-Project UCI File

```
RUN

GLOBAL
  WWHM4 model simulation
  START       1964 10 01        END    2004 09 30
  RUN INTERP OUTPUT LEVEL    3    0
  RESUME     0 RUN     1                    UNIT SYSTEM     1
END GLOBAL

FILES
<File>  <Un#>   <-----------File Name------------------------------>***
<-ID->                                                              ***
WDM         26   Combo1_SSD.wdm
MESSU       25   PreCombo1_SSD.MES
            27   PreCombo1_SSD.L61
            28   PreCombo1_SSD.L62
            30   POCCombo1_SSD1.dat
END FILES

OPN SEQUENCE
    INGRP               INDELT 00:60
      PERLND      19
      PERLND      35
      PERLND      51
      COPY       501
      DISPLY       1
    END INGRP
END OPN SEQUENCE
DISPLY
  DISPLY-INFO1
    # -  #<----------Title---------->***TRAN PIVL DIG1 FIL1  PYR DIG2 FIL2 YRND
    1        Basin  1                  MAX                    1    2   30    9
  END DISPLY-INFO1
END DISPLY
COPY
  TIMESERIES
    # -  #  NPT  NMN ***
    1         1    1
  501         1    1
  END TIMESERIES
END COPY
GENER
  OPCODE
    #    # OPCD ***
  END OPCODE
  PARM
    #    #         K ***
  END PARM
END GENER
PERLND
  GEN-INFO
    <PLS ><-------Name------->NBLKS   Unit-systems   Printer ***
    # -  #                          User  t-series Engl Metr ***
                                       in  out           ***
   19     B,Grass,Steep(2-5%)     1    1    1    1   27    0
   35     C,Grass,Steep(2-5%)     1    1    1    1   27    0
   51     D,Grass,Steep(2-5%)     1    1    1    1   27    0
  END GEN-INFO
  *** Section PWATER***

  ACTIVITY
    <PLS > ************ Active Sections ******************************
    # -  # ATMP SNOW PWAT  SED  PST  PWG PQAL MSTL PEST NITR PHOS TRAC ***
   19         0    0    1    0    0    0    0    0    0    0    0    0
   35         0    0    1    0    0    0    0    0    0    0    0    0
   51         0    0    1    0    0    0    0    0    0    0    0    0
  END ACTIVITY
```

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```
  PRINT-INFO
    <PLS > ***************** Print-flags ***************************** PIVL  PYR
    # -  # ATMP SNOW PWAT  SED  PST  PWG PQAL MSTL PEST NITR PHOS TRAC  *********
   19         0    0    4    0    0    0    0    0    0    0    0    0    1    9
   35         0    0    4    0    0    0    0    0    0    0    0    0    1    9
   51         0    0    4    0    0    0    0    0    0    0    0    0    1    9
  END PRINT-INFO

  PWAT-PARM1
    <PLS >  PWATER variable monthly parameter value flags  ***
    # -  # CSNO RTOP UZFG  VCS  VUZ  VNN VIFW VIRC  VLE INFC  HWT ***
   19         0    0    0    1    0    0    0    0    1    0    0
   35         0    0    0    1    0    0    0    0    1    0    0
   51         0    0    0    1    0    0    0    0    1    0    0
  END PWAT-PARM1

  PWAT-PARM2
    <PLS >      PWATER input info: Part 2         ***
    # -  # ***FOREST      LZSN    INFILT      LSUR     SLSUR     KVARY     AGWRC
   19              0       4.6     0.055       400      0.05         3      0.92
   35              0       4.4      0.04       400      0.05         3      0.92
   51              0       4.3     0.025       400      0.05         3      0.92
  END PWAT-PARM2

  PWAT-PARM3
    <PLS >      PWATER input info: Part 3         ***
    # -  # ***PETMAX    PETMIN    INFEXP    INFILD    DEEPFR    BASETP    AGWETP
   19             40        35         2         2         0         0      0.05
   35             40        35         2         2         0         0      0.05
   51             40        35         2         2         0         0      0.05
  END PWAT-PARM3
  PWAT-PARM4
    <PLS >     PWATER input info: Part 4                              ***
    # -  #     CEPSC      UZSN      NSUR     INTFW       IRC     LZETP ***
   19             0      0.32      0.25       1.4      0.45         0
   35             0      0.27      0.25       0.6      0.45         0
   51             0      0.27      0.25       0.6      0.45         0
  END PWAT-PARM4
  MON-LZETPARM
    <PLS >      PWATER input info: Part 3         ***
    # -  #  JAN  FEB  MAR  APR  MAY  JUN  JUL  AUG  SEP  OCT  NOV  DEC  ***
   19       0.4  0.4  0.4 0.45  0.5 0.55 0.55 0.55 0.55 0.55 0.45  0.4
   35       0.4  0.4  0.4 0.45  0.5 0.55 0.55 0.55 0.55 0.55 0.45  0.4
   51       0.4  0.4  0.4 0.45  0.5 0.55 0.55 0.55 0.55 0.55 0.45  0.4
  END MON-LZETPARM
  MON-INTERCEP
    <PLS >      PWATER input info: Part 3         ***
    # -  #  JAN  FEB  MAR  APR  MAY  JUN  JUL  AUG  SEP  OCT  NOV  DEC  ***
   19      0.12 0.12 0.12 0.11  0.1  0.1  0.1  0.1  0.1  0.1 0.11 0.12
   35      0.12 0.12 0.12 0.11  0.1  0.1  0.1  0.1  0.1  0.1 0.11 0.12
   51      0.12 0.12 0.12 0.11  0.1  0.1  0.1  0.1  0.1  0.1 0.11 0.12
  END MON-INTERCEP

  PWAT-STATE1
    <PLS > *** Initial conditions at start of simulation
               ran from 1990 to end of 1992 (pat 1-11-95) RUN 21 ***
    # -  # ***  CEPS      SURS       UZS      IFWS       LZS      AGWS      GWVS
   19             0         0      0.15         0         4      0.05         0
   35             0         0      0.15         0         4      0.05         0
   51             0         0      0.15         0         4      0.05         0
  END PWAT-STATE1

END PERLND

IMPLND
  GEN-INFO
    <PLS ><-------Name------->   Unit-systems   Printer ***
    # -  #                     User  t-series Engl Metr ***
                                     in  out           ***
  END GEN-INFO
```

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```
  *** Section IWATER***

  ACTIVITY
    <PLS > ************ Active Sections ******************************
    # -  # ATMP SNOW IWAT  SLD  IWG IQAL   ***
  END ACTIVITY

  PRINT-INFO
    <ILS > ******** Print-flags ******** PIVL  PYR
    # -  # ATMP SNOW IWAT  SLD  IWG IQAL    *********
  END PRINT-INFO

  IWAT-PARM1
    <PLS >  IWATER variable monthly parameter value flags  ***
    # -  # CSNO RTOP  VRS  VNN RTLI     ***
  END IWAT-PARM1

  IWAT-PARM2
    <PLS >      IWATER input info: Part 2         ***
    # -  # ***  LSUR     SLSUR      NSUR     RETSC
  END IWAT-PARM2

  IWAT-PARM3
    <PLS >      IWATER input info: Part 3         ***
    # -  # ***PETMAX    PETMIN
  END IWAT-PARM3

  IWAT-STATE1
    <PLS > *** Initial conditions at start of simulation
    # -  # ***  RETS      SURS
  END IWAT-STATE1

END IMPLND

SCHEMATIC
<-Source->              <--Area-->     <-Target->   MBLK   ***
<Name>   #              <-factor->     <Name>   #   Tbl#   ***
Basin  1***
PERLND  19                    14.23     COPY   501     12
PERLND  19                    14.23     COPY   501     13
PERLND  35                     3.43     COPY   501     12
PERLND  35                     3.43     COPY   501     13
PERLND  51                    16.53     COPY   501     12
PERLND  51                    16.53     COPY   501     13

******Routing******
END SCHEMATIC

NETWORK
<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Target vols> <-Grp> <-Member->  ***
<Name>   #        <Name> # #<-factor->strg <Name>   #   #        <Name> # #  ***
COPY   501 OUTPUT MEAN   1 1   12.1        DISPLY   1     INPUT  TIMSER 1



<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Target vols> <-Grp> <-Member->  ***
<Name>   #        <Name> # #<-factor->strg <Name>   #   #        <Name> # #  ***
END NETWORK

RCHRES
  GEN-INFO
    RCHRES       Name        Nexits   Unit Systems   Printer                ***
    # -  #<----------------><---> User T-series  Engl Metr LKFG            ***
                                      in  out                               ***
  END GEN-INFO
  *** Section RCHRES***

  ACTIVITY
    <PLS > ************ Active Sections ******************************
    # -  # HYFG ADFG CNFG HTFG SDFG GQFG OXFG NUFG PKFG PHFG ***
```

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```
  END ACTIVITY

  PRINT-INFO
    <PLS > ***************** Print-flags ******************* PIVL  PYR
    # -  # HYDR ADCA CONS HEAT  SED  GQL OXRX NUTR PLNK PHCB PIVL  PYR  *********
  END PRINT-INFO

  HYDR-PARM1
    RCHRES  Flags for each HYDR Section                                    ***
    # -  #  VC A1 A2 A3  ODFVFG for each *** ODGTFG for each     FUNCT  for each
           FG FG FG FG  possible  exit  *** possible  exit      possible  exit
            *  *  *  *    *  *  *  *  *       *  *  *  *  *        ***
  END HYDR-PARM1

  HYDR-PARM2
    # -  #    FTABNO       LEN     DELTH     STCOR        KS      DB50       ***
  <------><--------><--------><--------><--------><--------><-------->       ***
  END HYDR-PARM2
  HYDR-INIT
    RCHRES  Initial conditions for each HYDR section                       ***
    # -  # ***   VOL     Initial  value  of COLIND     Initial  value  of OUTDGT
          *** ac-ft     for each possible exit        for each possible exit
  <------><-------->     <---><---><---><---><---> *** <---><---><---><---><--->
  END HYDR-INIT
END RCHRES

SPEC-ACTIONS
END SPEC-ACTIONS
FTABLES
END FTABLES

EXT SOURCES
<-Volume-> <Member> SsysSgap<--Mult-->Tran <-Target vols> <-Grp> <-Member->  ***
<Name>   # <Name> # tem strg<-factor->strg <Name>   #   #        <Name> # #  ***
WDM      2 PREC     ENGL       1.045          PERLND   1 999 EXTNL  PREC
WDM      2 PREC     ENGL       1.045          IMPLND   1 999 EXTNL  PREC
WDM      1 EVAP     ENGL       1              PERLND   1 999 EXTNL  PETINP
WDM      1 EVAP     ENGL       1              IMPLND   1 999 EXTNL  PETINP

END EXT SOURCES

EXT TARGETS
<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Volume-> <Member> Tsys Tgap Amd ***
<Name>   #        <Name> # #<-factor->strg <Name>   # <Name>    tem strg strg***
COPY   501 OUTPUT MEAN   1 1     12.1      WDM    501 FLOW     ENGL      REPL
END EXT TARGETS

MASS-LINK
<Volume>   <-Grp> <-Member-><--Mult-->     <Target>       <-Grp> <-Member->***
<Name>            <Name> # #<-factor->     <Name>                <Name> # #***
  MASS-LINK       12
PERLND     PWATER SURO       0.083333      COPY           INPUT  MEAN
  END MASS-LINK   12

  MASS-LINK       13
PERLND     PWATER IFWO       0.083333      COPY           INPUT  MEAN
  END MASS-LINK   13


END MASS-LINK

END RUN
```

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Mitigated UCI File

```
RUN

GLOBAL
  WWHM4 model simulation
  START       1964 10 01        END    2004 09 30
  RUN INTERP OUTPUT LEVEL    3    0
  RESUME     0 RUN     1                    UNIT SYSTEM     1
END GLOBAL

FILES
<File>  <Un#>   <-----------File Name------------------------------>***
<-ID->                                                              ***
WDM         26   Combo1_SSD.wdm
MESSU       25   MitCombo1_SSD.MES
            27   MitCombo1_SSD.L61
            28   MitCombo1_SSD.L62
            30   POCCombo1_SSD1.dat
END FILES

OPN SEQUENCE
    INGRP               INDELT 00:60
      PERLND      19
      PERLND      27
      PERLND      59
      PERLND      43
      PERLND      35
      PERLND      51
      IMPLND       3
      RCHRES       1
      COPY         1
      COPY       501
      DISPLY       1
    END INGRP
END OPN SEQUENCE
DISPLY
  DISPLY-INFO1
    # -  #<----------Title---------->***TRAN PIVL DIG1 FIL1  PYR DIG2 FIL2 YRND
    1        SSD Table 1               MAX                    1    2   30    9
  END DISPLY-INFO1
END DISPLY
COPY
  TIMESERIES
    # -  #  NPT  NMN ***
    1         1    1
  501         1    1
  END TIMESERIES
END COPY
GENER
  OPCODE
    #    # OPCD ***
  END OPCODE
  PARM
    #    #         K ***
  END PARM
END GENER
PERLND
  GEN-INFO
    <PLS ><-------Name------->NBLKS   Unit-systems   Printer ***
    # -  #                          User  t-series Engl Metr ***
                                          in  out             ***
   19     B,Grass,Steep(2-5%)     1    1    1    1   27    0
   27     B,Urban,Steep(2-5%)     1    1    1    1   27    0
   59     D,Urban,Steep(2-5%)     1    1    1    1   27    0
   43     C,Urban,Steep(2-5%)     1    1    1    1   27    0
   35     C,Grass,Steep(2-5%)     1    1    1    1   27    0
   51     D,Grass,Steep(2-5%)     1    1    1    1   27    0
  END GEN-INFO
  *** Section PWATER***
```

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```
ACTIVITY
  <PLS > ************* Active Sections ****************************
  # -  # ATMP SNOW PWAT  SED  PST  PWG PQAL MSTL PEST NITR PHOS TRAC ***
 19         0    0    1    0    0    0    0    0    0    0    0    0
 27         0    0    1    0    0    0    0    0    0    0    0    0
 59         0    0    1    0    0    0    0    0    0    0    0    0
 43         0    0    1    0    0    0    0    0    0    0    0    0
 35         0    0    1    0    0    0    0    0    0    0    0    0
 51         0    0    1    0    0    0    0    0    0    0    0    0
END ACTIVITY

PRINT-INFO
  <PLS > ***************** Print-flags **************************** PIVL  PYR
  # -  # ATMP SNOW PWAT  SED  PST  PWG PQAL MSTL PEST NITR PHOS TRAC  *********
 19         0    0    4    0    0    0    0    0    0    0    0    0    1    9
 27         0    0    4    0    0    0    0    0    0    0    0    0    1    9
 59         0    0    4    0    0    0    0    0    0    0    0    0    1    9
 43         0    0    4    0    0    0    0    0    0    0    0    0    1    9
 35         0    0    4    0    0    0    0    0    0    0    0    0    1    9
 51         0    0    4    0    0    0    0    0    0    0    0    0    1    9
END PRINT-INFO

PWAT-PARM1
  <PLS >  PWATER variable monthly parameter value flags  ***
  # -  # CSNO RTOP UZFG  VCS  VUZ  VNN VIFW VIRC  VLE INFC  HWT ***
 19         0    0    1    0    0    0    0    1    0    0
 27         0    0    0    1    0    0    0    1    0    0
 59         0    0    0    1    0    0    0    1    0    0
 43         0    0    0    1    0    0    0    1    0    0
 35         0    0    0    1    0    0    0    1    0    0
 51         0    0    0    1    0    0    0    1    0    0
END PWAT-PARM1

PWAT-PARM2
  <PLS >      PWATER input info: Part 2          ***
  # -  # ***FOREST      LZSN     INFILT      LSUR      SLSUR      KVARY      AGWRC
 19              0       4.6      0.055       400       0.05          3       0.92
 27              0       4.5       0.04       400       0.05          3       0.92
 59              0      4.35      0.015       400       0.05          3       0.92
 43              0      4.35      0.025       400       0.05          3       0.92
 35              0       4.4       0.04       400       0.05          3       0.92
 51              0       4.3      0.025       400       0.05          3       0.92
END PWAT-PARM2

PWAT-PARM3
  <PLS >      PWATER input info: Part 3          ***
  # -  # ***PETMAX    PETMIN    INFEXP    INFILD    DEEPFR    BASETP    AGWETP
 19             40        35         2         2         0         0      0.05
 27             40        35         2         2         0         0      0.05
 59             40        35         2         2         0         0      0.05
 43             40        35         2         2         0         0      0.05
 35             40        35         2         2         0         0      0.05
 51             40        35         2         2         0         0      0.05
END PWAT-PARM3
PWAT-PARM4
  <PLS >     PWATER input info: Part 4                                  ***
  # -  #     CEPSC      UZSN      NSUR     INTFW       IRC     LZETP ***
 19              0      0.32      0.25       1.4      0.45         0
 27              0      0.32      0.25       0.8      0.37         0
 59              0      0.27      0.25      0.45      0.37         0
 43              0      0.27      0.25      0.45      0.37         0
 35              0      0.27      0.25       0.6      0.45         0
 51              0      0.27      0.25       0.6      0.45         0
END PWAT-PARM4
MON-LZETPARM
  <PLS >      PWATER input info: Part 3          ***
  # -  #  JAN  FEB  MAR  APR  MAY  JUN  JUL  AUG  SEP  OCT  NOV  DEC  ***
 19       0.4  0.4  0.4 0.45  0.5 0.55 0.55 0.55 0.55 0.55 0.45  0.4
 27       0.5  0.5  0.5  0.6 0.65 0.65 0.65 0.65 0.65 0.65 0.55  0.5
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   59       0.5  0.5  0.5  0.6 0.65 0.65 0.65 0.65 0.65 0.65 0.55  0.5
   43       0.5  0.5  0.5  0.6 0.65 0.65 0.65 0.65 0.65 0.65 0.55  0.5
   35       0.4  0.4  0.4 0.45  0.5 0.55 0.55 0.55 0.55 0.55 0.45  0.4
   51       0.4  0.4  0.4 0.45  0.5 0.55 0.55 0.55 0.55 0.55 0.45  0.4
  END MON-LZETPARM
  MON-INTERCEP
    <PLS >      PWATER input info: Part 3         ***
    # -  #  JAN  FEB  MAR  APR  MAY  JUN  JUL  AUG  SEP  OCT  NOV  DEC  ***
   19      0.12 0.12 0.12 0.11  0.1  0.1  0.1  0.1  0.1  0.1 0.11 0.12
   27      0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11
   59      0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11
   43      0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11
   35      0.12 0.12 0.12 0.11  0.1  0.1  0.1  0.1  0.1  0.1 0.11 0.12
   51      0.12 0.12 0.12 0.11  0.1  0.1  0.1  0.1  0.1  0.1 0.11 0.12
  END MON-INTERCEP

  PWAT-STATE1
    <PLS > *** Initial conditions at start of simulation
               ran from 1990 to end of 1992 (pat 1-11-95) RUN 21 ***
    # -  # ***  CEPS      SURS       UZS      IFWS       LZS      AGWS      GWVS
   19             0         0      0.15         0         4      0.05         0
   27             0         0      0.15         0         4      0.05         0
   59             0         0      0.15         0         4      0.05         0
   43             0         0      0.15         0         4      0.05         0
   35             0         0      0.15         0         4      0.05         0
   51             0         0      0.15         0         4      0.05         0
  END PWAT-STATE1

END PERLND

IMPLND
  GEN-INFO
    <PLS ><-------Name------->     Unit-systems   Printer ***
    # -  #                      User  t-series Engl Metr ***
                                    in  out           ***
    3     Imperv,Steep(2-5%)        1    1    1   27    0
  END GEN-INFO
  *** Section IWATER***

  ACTIVITY
    <PLS > ************ Active Sections ******************************
    # -  # ATMP SNOW IWAT  SLD  IWG IQAL    ***
    3         0    0    1    0    0    0
  END ACTIVITY

  PRINT-INFO
    <ILS > ******** Print-flags ******** PIVL  PYR
    # -  # ATMP SNOW IWAT  SLD  IWG IQAL     *********
    3         0    0    4    0    0    0    1    9
  END PRINT-INFO

  IWAT-PARM1
    <PLS >  IWATER variable monthly parameter value flags  ***
    # -  # CSNO RTOP  VRS  VNN RTLI     ***
    3         0    0    0    0    0
  END IWAT-PARM1

  IWAT-PARM2
    <PLS >      IWATER input info: Part 2         ***
    # -  # ***  LSUR     SLSUR      NSUR     RETSC
    3            100      0.05      0.05     0.095
  END IWAT-PARM2

  IWAT-PARM3
    <PLS >      IWATER input info: Part 3         ***
    # -  # ***PETMAX    PETMIN
    3              0         0
  END IWAT-PARM3

  IWAT-STATE1
```

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    <PLS > *** Initial conditions at start of simulation
    # -  # ***  RETS      SURS
    3             0         0
  END IWAT-STATE1

END IMPLND

SCHEMATIC
<-Source->                  <--Area-->     <-Target->   MBLK   ***
<Name>   #                  <-factor->     <Name>   #   Tbl#   ***
Basin  1***
PERLND  19                       13.19     RCHRES   1      2
PERLND  19                       13.19     RCHRES   1      3
PERLND  27                        0.78     RCHRES   1      2
PERLND  27                        0.78     RCHRES   1      3
PERLND  59                       12.54     RCHRES   1      2
PERLND  59                       12.54     RCHRES   1      3
PERLND  43                        0.33     RCHRES   1      2
PERLND  43                        0.33     RCHRES   1      3
PERLND  35                         0.1     RCHRES   1      2
PERLND  35                         0.1     RCHRES   1      3
PERLND  51                        5.88     RCHRES   1      2
PERLND  51                        5.88     RCHRES   1      3
IMPLND   3                        5.06     RCHRES   1      5

******Routing******
PERLND  19                       13.19     COPY     1     12
PERLND  27                        0.78     COPY     1     12
PERLND  59                       12.54     COPY     1     12
PERLND  43                        0.33     COPY     1     12
PERLND  35                         0.1     COPY     1     12
PERLND  51                        5.88     COPY     1     12
IMPLND   3                        5.06     COPY     1     15
PERLND  19                       13.19     COPY     1     13
PERLND  27                        0.78     COPY     1     13
PERLND  59                       12.54     COPY     1     13
PERLND  43                        0.33     COPY     1     13
PERLND  35                         0.1     COPY     1     13
PERLND  51                        5.88     COPY     1     13
RCHRES   1                           1     COPY   501     16
END SCHEMATIC

NETWORK
<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Target vols> <-Grp> <-Member->  ***
<Name>   #        <Name> # #<-factor->strg <Name>   #   #        <Name> # #  ***
COPY   501 OUTPUT MEAN   1 1   12.1        DISPLY   1     INPUT  TIMSER 1



<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Target vols> <-Grp> <-Member->  ***
<Name>   #        <Name> # #<-factor->strg <Name>   #   #        <Name> # #  ***
END NETWORK

RCHRES
  GEN-INFO
    RCHRES       Name        Nexits   Unit Systems   Printer                ***
    # -  #<----------------><---> User T-series  Engl Metr LKFG             ***
                                        in  out                             ***
    1     SSD Table  10006        1    1    1    1   28    0    1
  END GEN-INFO
  *** Section RCHRES***

  ACTIVITY
    <PLS > ************ Active Sections ******************************
    # -  # HYFG ADFG CNFG HTFG SDFG GQFG OXFG NUFG PKFG PHFG ***
    1         1    0    0    0    0    0    0    0    0    0
  END ACTIVITY

  PRINT-INFO
    <PLS > ***************** Print-flags ****************** PIVL  PYR
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    # -  # HYDR ADCA CONS HEAT  SED  GQL OXRX NUTR PLNK PHCB PIVL  PYR  *********
    1         4    0    0    0    0    0    0    0    0    0    1    9
  END PRINT-INFO

  HYDR-PARM1
    RCHRES  Flags for each HYDR Section                                      ***
    # -  #  VC A1 A2 A3  ODFVFG for each *** ODGTFG for each     FUNCT  for each
           FG FG FG FG  possible  exit  *** possible  exit      possible  exit
            *  *  *  *    *  *  *  *  *       *  *  *  *  *       ***
    1        0  1  0  0    4  0  0  0  0       0  0  0  0  0       2  2  2  2  2
  END HYDR-PARM1

  HYDR-PARM2
    # -  #    FTABNO       LEN     DELTH     STCOR        KS      DB50       ***
  <------><--------><--------><--------><--------><--------><-------->       ***
    1              1      0.01       0.0       0.0       0.5       0.0
  END HYDR-PARM2
  HYDR-INIT
    RCHRES  Initial conditions for each HYDR section                         ***
    # -  # ***   VOL     Initial  value  of COLIND     Initial  value  of OUTDGT
          *** ac-ft     for each possible exit        for each possible exit
  <------><-------->     <---><---><---><---><---> *** <---><---><---><---><--->
    1         0            4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
  END HYDR-INIT
END RCHRES

SPECIAL-ACTIONS
END SPECIAL-ACTIONS
FTABLES
  FTABLE      1
   53    4
     Depth      Area    Volume  Outflow1 Velocity  Travel Time***
      (ft)   (acres) (acre-ft)    (cfs)   (ft/sec)    (Minutes)***
  0.000000  0.000000  0.000000  0.000000
  0.100000  0.550000  0.055000  0.035100
  0.250000  0.569000  0.142500  0.138800
  0.500000  0.586500  0.286300  0.308900
  0.750000  0.604100  0.434600  0.408600
  1.000000  0.621700  0.587400  0.488400
  1.250000  0.639300  0.744700  0.575500
  1.500000  0.656900  0.906400  0.891300
  1.750000  0.674600  1.072700  1.352300
  2.000000  0.692300  1.243400  1.915800
  2.250000  0.710000  1.418700  2.563600
  2.500000  0.727700  1.598400  3.285100
  2.750000  0.745500  1.782600  4.266700
  3.000000  0.763200  1.971200  7.200000
  3.250000  0.781000  2.164400  11.50870
  3.500000  0.798900  2.362100  16.79080
  3.750000  0.816700  2.564200  23.34970
  4.000000  0.834600  2.770900  31.93490
  4.250000  0.852500  2.982000  42.10710
  4.500000  0.870400  3.197600  53.54250
  4.750000  0.888300  3.417700  66.07850
  5.000000  0.906200  3.642200  79.60950
  5.250000  0.924200  3.871300  94.05790
  5.500000  0.942200  4.104900  109.3637
  5.750000  0.960200  4.342900  125.4776
  6.000000  0.978300  4.585400  142.3587
  6.250000  0.996400  4.832400  159.9718
  6.500000  1.014400  5.083900  178.2866
  6.750000  1.032500  5.339900  197.2761
  7.000000  1.050700  5.600400  216.9164
  7.250000  1.068800  5.865400  237.1861
  7.500000  1.087000  6.134800  258.0658
  7.750000  1.105200  6.408700  279.5378
  8.000000  1.123400  6.687100  301.5858
  8.250000  1.141700  6.970000  324.1949
  8.500000  1.159900  7.257400  347.3514
  8.750000  1.178200  7.549300  371.0423
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  9.000000  1.196500  7.845700  395.2558
  9.250000  1.214900  8.146500  419.9807
  9.500000  1.233200  8.451900  445.2064
  9.750000  1.251600  8.761700  470.9232
  10.00000  1.270000  9.076000  497.1217
  10.25000  1.288400  9.394800  523.7932
  10.50000  1.306900  9.718100  550.9294
  10.75000  1.325300  10.04590  578.5223
  11.00000  1.343800  10.37810  606.5646
  11.25000  1.362300  10.71490  635.0489
  11.50000  1.380900  11.05610  663.9686
  11.75000  1.399400  11.40180  693.3172
  12.00000  1.418000  11.75200  723.0884
  12.25000  1.436600  12.10670  753.2763
  12.50000  1.455200  12.46590  783.8751
  12.75000  1.473900  12.82950  814.8795
  END FTABLE  1
END FTABLES

EXT SOURCES
<-Volume-> <Member> SsysSgap<--Mult-->Tran <-Target vols> <-Grp> <-Member->  ***
<Name>   # <Name> # tem strg<-factor->strg <Name>   #   #        <Name> # #  ***
WDM      2 PREC     ENGL    1.045          PERLND   1 999 EXTNL  PREC
WDM      2 PREC     ENGL    1.045          IMPLND   1 999 EXTNL  PREC
WDM      1 EVAP     ENGL    1              PERLND   1 999 EXTNL  PETINP
WDM      1 EVAP     ENGL    1              IMPLND   1 999 EXTNL  PETINP
WDM     22 IRRG     ENGL    0.7      SAME  PERLND  27     EXTNL  SURLI
WDM     22 IRRG     ENGL    0.7      SAME  PERLND  59     EXTNL  SURLI
WDM     22 IRRG     ENGL    0.7      SAME  PERLND  43     EXTNL  SURLI
WDM      2 PREC     ENGL    1.045          RCHRES   1     EXTNL  PREC
WDM      1 EVAP     ENGL    1              RCHRES   1     EXTNL  POTEV

END EXT SOURCES

EXT TARGETS
<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Volume-> <Member> Tsys Tgap Amd ***
<Name>   #        <Name> # #<-factor->strg <Name>   # <Name>    tem strg strg***
COPY     1 OUTPUT MEAN   1 1     12.1      WDM    701 FLOW     ENGL      REPL
COPY   501 OUTPUT MEAN   1 1     12.1      WDM    801 FLOW     ENGL      REPL
END EXT TARGETS

MASS-LINK
<Volume>   <-Grp> <-Member-><--Mult-->     <Target>       <-Grp> <-Member->***
<Name>            <Name> # #<-factor->     <Name>                <Name> # #***
  MASS-LINK        2
PERLND     PWATER SURO       0.083333      RCHRES         INFLOW IVOL
  END MASS-LINK    2

  MASS-LINK        3
PERLND     PWATER IFWO       0.083333      RCHRES         INFLOW IVOL
  END MASS-LINK    3

  MASS-LINK        5
IMPLND     IWATER SURO       0.083333      RCHRES         INFLOW IVOL
  END MASS-LINK    5

  MASS-LINK       12
PERLND     PWATER SURO       0.083333      COPY           INPUT  MEAN
  END MASS-LINK   12

  MASS-LINK       13
PERLND     PWATER IFWO       0.083333      COPY           INPUT  MEAN
  END MASS-LINK   13

  MASS-LINK       15
IMPLND     IWATER SURO       0.083333      COPY           INPUT  MEAN
  END MASS-LINK   15

  MASS-LINK       16
RCHRES     ROFLOW                          COPY           INPUT  MEAN
```

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```
  END MASS-LINK   16

END MASS-LINK

END RUN
```

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PROJECT REPORT

General Model Information

Project Name: Combo 2_pre_rev 11-6
Site Name:
Site Address:
City:
Report Date: 11/26/2013
Gage: ORANGEVA
Data Start: 1964/10/01
Data End: 2004/09/30
Timestep: Hourly
Precip Scale: 1.05
Version: 2013/08/23

POC Thresholds

Low Flow Threshold for POC1:	25 Percent of the 2 Year
High Flow Threshold for POC1:	10 Year

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Landuse Basin Data

Pre-Project Land Use

Basin 1

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
C,Grass,Mod (1-2%)	33.4
D,Grass,Mod (1-2%)	113.93
Pervious Total	147.33

Impervious Land Use	Acres
Impervious Total	0
Basin Total	147.33

Element Flows To:

Surface	Interflow	Groundwater

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Mitigated Land Use

Basin 1

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
C,Urban,Mod (1-2%)	9.29
C,Grass,Mod (1-2%)	16.96
D,Urban,Mod (1-2%)	20.59
D,Grass,Mod (1-2%)	45.47
Pervious Total	92.31

Impervious Land Use	Acres
Imperv,Mod (1-2%)	59.42
Impervious Total	59.42
Basin Total	151.73

Element Flows To:

Surface	Interflow	Groundwater
Combo 2	Combo 2	

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Mitigated Routing

Combo 2

Depth: 15 ft.
Element Flows To:
Outlet 1 Outlet 2

SSD Table Hydraulic Table

Stage (ft)	Area (ac)	Volume (ac-ft)	Manual	NotUsed	NotUsed	NotUsed	NotUsed
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.100	1.110	0.111	0.044	0.000	0.000	0.000	0.000
0.250	1.131	0.281	0.173	0.000	0.000	0.000	0.000
0.500	1.152	0.563	0.452	0.000	0.000	0.000	0.000
0.750	1.173	0.852	0.615	0.000	0.000	0.000	0.000
1.000	1.194	1.147	0.744	0.000	0.000	0.000	0.000
1.250	1.215	1.447	0.853	0.000	0.000	0.000	0.000
1.500	1.237	1.753	0.950	0.000	0.000	0.000	0.000
1.750	1.259	2.065	1.038	0.000	0.000	0.000	0.000
2.000	1.281	2.383	1.119	0.000	0.000	0.000	0.000
2.250	1.303	2.707	1.194	0.000	0.000	0.000	0.000
2.500	1.325	3.037	1.266	0.000	0.000	0.000	0.000
2.750	1.348	3.372	1.333	0.000	0.000	0.000	0.000
3.000	1.370	3.714	1.590	0.000	0.000	0.000	0.000
3.250	1.393	4.061	2.300	0.000	0.000	0.000	0.000
3.500	1.416	4.414	3.262	0.000	0.000	0.000	0.000
3.750	1.440	4.773	4.416	0.000	0.000	0.000	0.000
4.000	1.463	5.138	5.510	0.000	0.000	0.000	0.000
4.250	1.487	5.509	6.248	0.000	0.000	0.000	0.000
4.500	1.511	5.886	6.895	0.000	0.000	0.000	0.000
4.750	1.535	6.268	7.479	0.000	0.000	0.000	0.000
5.000	1.559	6.657	10.22	0.000	0.000	0.000	0.000
5.250	1.584	7.051	14.75	0.000	0.000	0.000	0.000
5.500	1.609	7.451	20.45	0.000	0.000	0.000	0.000
5.750	1.633	7.857	27.08	0.000	0.000	0.000	0.000
6.000	1.659	8.269	34.52	0.000	0.000	0.000	0.000
6.250	1.684	8.687	42.68	0.000	0.000	0.000	0.000
6.500	1.709	9.111	51.50	0.000	0.000	0.000	0.000
6.750	1.735	9.540	60.94	0.000	0.000	0.000	0.000
7.000	1.761	9.976	70.94	0.000	0.000	0.000	0.000
7.250	1.787	10.42	82.01	0.000	0.000	0.000	0.000
7.500	1.814	10.86	94.88	0.000	0.000	0.000	0.000
7.750	1.840	11.32	110.9	0.000	0.000	0.000	0.000
8.000	1.867	11.78	129.0	0.000	0.000	0.000	0.000
8.250	1.894	12.24	148.9	0.000	0.000	0.000	0.000
8.500	1.921	12.71	170.4	0.000	0.000	0.000	0.000
8.750	1.948	13.19	193.2	0.000	0.000	0.000	0.000
9.000	1.976	13.67	217.4	0.000	0.000	0.000	0.000
9.250	2.004	14.16	242.8	0.000	0.000	0.000	0.000
9.500	2.032	14.65	269.3	0.000	0.000	0.000	0.000
9.750	2.060	15.15	296.9	0.000	0.000	0.000	0.000
10.000	2.088	15.66	325.5	0.000	0.000	0.000	0.000
10.25	2.117	16.17	355.2	0.000	0.000	0.000	0.000
10.50	2.145	16.69	385.8	0.000	0.000	0.000	0.000
10.75	2.174	17.21	417.3	0.000	0.000	0.000	0.000

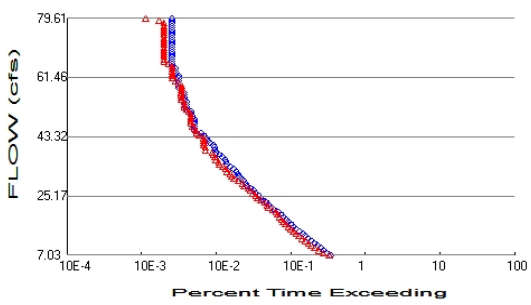
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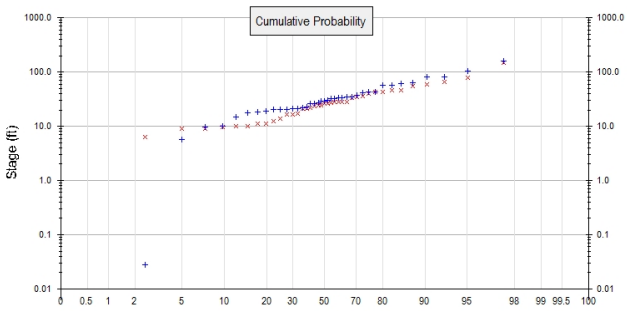
11.00	2.203	17.74	449.7	0.000	0.000	0.000	0.000
11.25	2.233	18.28	483.0	0.000	0.000	0.000	0.000
11.50	2.262	18.82	517.2	0.000	0.000	0.000	0.000
11.75	2.292	19.36	552.1	0.000	0.000	0.000	0.000
12.00	2.322	19.92	587.9	0.000	0.000	0.000	0.000
12.25	2.352	20.47	624.5	0.000	0.000	0.000	0.000
12.50	2.383	21.04	661.8	0.000	0.000	0.000	0.000
12.75	2.413	21.61	699.9	0.000	0.000	0.000	0.000
13.00	2.444	22.19	738.7	0.000	0.000	0.000	0.000
13.25	2.475	22.77	778.3	0.000	0.000	0.000	0.000
13.50	2.506	23.36	818.6	0.000	0.000	0.000	0.000
13.75	2.537	23.95	859.5	0.000	0.000	0.000	0.000
14.00	2.569	24.55	901.2	0.000	0.000	0.000	0.000
14.25	2.601	25.16	943.5	0.000	0.000	0.000	0.000
14.50	2.633	25.77	986.5	0.000	0.000	0.000	0.000
14.75	2.665	26.38	1030.115	0.000	0.000	0.000	0.000
15.00	2.697	27.01	1074.395	0.000	0.000	0.000	0.000

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Analysis Results

POC 1





\+ Pre-Project x Mitigated

Pre-Project Landuse Totals for POC #1
Total Pervious Area: 147.33
Total Impervious Area: 0

Mitigated Landuse Totals for POC #1
Total Pervious Area: 92.31
Total Impervious Area: 59.42

Flow Frequency Method: Log Pearson Type III 17B

Flow Frequency Return Periods for Pre-Project. POC #1

Return Period	**Flow(cfs)**
2 year	28.10331
5 year	54.01211
10 year	79.605466
25 year	114.445244

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Flow Frequency Return Periods for Mitigated. POC #1

Return Period	**Flow(cfs)**
2 year	24.279554
5 year	43.38912
10 year	59.30911
25 year	94.594566

Annual Peaks

Annual Peaks for Pre-Project and Mitigated. POC #1

Year	**Pre-Project**	**Mitigated**
1965	30.127	26.252
1966	10.165	8.966
1967	34.214	35.127
1968	19.322	12.626
1969	34.253	23.750
1970	26.469	27.833
1971	33.782	24.026
1972	9.725	9.677
1973	56.965	43.486
1974	43.513	24.546
1975	20.897	9.985
1976	0.027	6.329
1977	0.027	1.573
1978	82.499	54.670

1979	22.459	16.275
1980	25.947	21.232
1981	20.814	21.916
1982	42.857	40.398
1983	57.653	46.059
1984	28.983	27.680
1985	18.141	16.373
1986	102.405	79.568
1987	20.549	16.829
1988	20.698	28.022
1989	33.544	21.392
1990	20.385	10.196
1991	29.353	28.057
1992	41.929	45.363
1993	32.875	25.762
1994	5.591	11.011
1995	157.255	148.022
1996	62.200	43.044
1997	81.743	65.673
1998	64.215	59.954
1999	17.440	13.740
2000	37.377	36.348
2001	22.125	11.197
2002	14.791	9.159
2003	27.266	27.312
2004	32.699	33.294

Ranked Annual Peaks

Ranked Annual Peaks for Pre-Project and Mitigated. POC #1

Rank	Pre-Project	Mitigated
1	157.2550	148.0220
2	102.4050	79.5681
3	82.4988	65.6728
4	81.7431	59.9535
5	64.2145	54.6695
6	62.2003	46.0592
7	57.6525	45.3634
8	56.9649	43.4861
9	43.5133	43.0443
10	42.8572	40.3981
11	41.9289	36.3478
12	37.3766	35.1268
13	34.2534	33.2939
14	34.2141	28.0565
15	33.7824	28.0215
16	33.5443	27.8334
17	32.8749	27.6799
18	32.6990	27.3116
19	30.1273	26.2516
20	29.3531	25.7617
21	28.9828	24.5461
22	27.2657	24.0257
23	26.4687	23.7501
24	25.9468	21.9158
25	22.4592	21.3919
26	22.1252	21.2318
27	20.8969	16.8292
28	20.8142	16.3732

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29	20.6982	16.2751
30	20.5485	13.7399
31	20.3854	12.6263
32	19.3218	11.1970
33	18.1408	11.0107
34	17.4402	10.1964
35	14.7909	9.9852
36	10.1651	9.6766
37	9.7254	9.1586
38	5.5905	8.9661
39	0.0274	6.3291
40	0.0267	1.5729

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Duration Flows

The Facility PASSED

Flow(cfs)	Predev	Mit	Percentage	Pass/Fail
7.0258	1198	1153	96	Pass
7.7590	1066	958	89	Pass
8.4921	968	827	85	Pass
9.2252	879	733	83	Pass
9.9583	805	663	82	Pass
10.6915	734	599	81	Pass
11.4246	660	555	84	Pass
12.1577	594	498	83	Pass
12.8908	541	450	83	Pass
13.6240	505	410	81	Pass
14.3571	464	379	81	Pass
15.0902	417	350	83	Pass
15.8234	385	323	83	Pass
16.5565	355	295	83	Pass
17.2896	326	278	85	Pass
18.0227	303	262	86	Pass
18.7559	284	246	86	Pass
19.4890	260	234	90	Pass
20.2221	240	222	92	Pass
20.9553	211	200	94	Pass
21.6884	195	175	89	Pass
22.4215	181	170	93	Pass
23.1546	166	157	94	Pass
23.8878	150	140	93	Pass
24.6209	139	126	90	Pass
25.3540	130	119	91	Pass
26.0871	118	109	92	Pass
26.8203	111	100	90	Pass
27.5534	102	94	92	Pass
28.2865	91	82	90	Pass
29.0197	87	79	90	Pass
29.7528	81	69	85	Pass
30.4859	76	61	80	Pass
31.2190	72	56	77	Pass
31.9522	68	55	80	Pass
32.6853	65	49	75	Pass
33.4184	60	47	78	Pass
34.1516	54	43	79	Pass
34.8847	49	39	79	Pass
35.6178	48	38	79	Pass
36.3509	46	35	76	Pass
37.0841	42	34	80	Pass
37.8172	39	32	82	Pass
38.5503	35	31	88	Pass
39.2834	34	25	73	Pass
40.0166	33	25	75	Pass
40.7497	32	24	75	Pass
41.4828	29	24	82	Pass
42.2160	27	24	88	Pass
42.9491	26	24	92	Pass
43.6822	24	21	87	Pass
44.4153	22	19	86	Pass
45.1485	18	19	105	Pass

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45.8816	18	18	100	Pass
46.6147	18	17	94	Pass
47.3478	18	16	88	Pass
48.0810	18	16	88	Pass
48.8141	18	16	88	Pass
49.5472	17	16	94	Pass
50.2804	16	16	100	Pass
51.0135	16	15	93	Pass
51.7466	14	14	100	Pass
52.4797	14	13	92	Pass
53.2129	14	13	92	Pass
53.9460	14	13	92	Pass
54.6791	13	12	92	Pass
55.4123	13	12	92	Pass
56.1454	13	12	92	Pass
56.8785	13	12	92	Pass
57.6116	12	12	100	Pass
58.3448	11	12	109	Pass
59.0779	11	12	109	Pass
59.8110	11	11	100	Pass
60.5441	11	10	90	Pass
61.2773	11	9	81	Pass
62.0104	11	9	81	Pass
62.7435	10	9	90	Pass
63.4767	10	9	90	Pass
64.2098	10	9	90	Pass
64.9429	9	9	100	Pass
65.6760	9	8	88	Pass
66.4092	9	7	77	Pass
67.1423	9	7	77	Pass
67.8754	9	7	77	Pass
68.6086	9	7	77	Pass
69.3417	9	7	77	Pass
70.0748	9	7	77	Pass
70.8079	9	7	77	Pass
71.5411	9	7	77	Pass
72.2742	9	7	77	Pass
73.0073	9	7	77	Pass
73.7404	9	7	77	Pass
74.4736	9	7	77	Pass
75.2067	9	7	77	Pass
75.9398	9	7	77	Pass
76.6730	9	7	77	Pass
77.4061	9	7	77	Pass
78.1392	9	7	77	Pass
78.8723	9	6	66	Pass
79.6055	9	4	44	Pass

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Model Default Modifications

Total of 0 changes have been made.

PERLND Changes

No PERLND changes have been made.

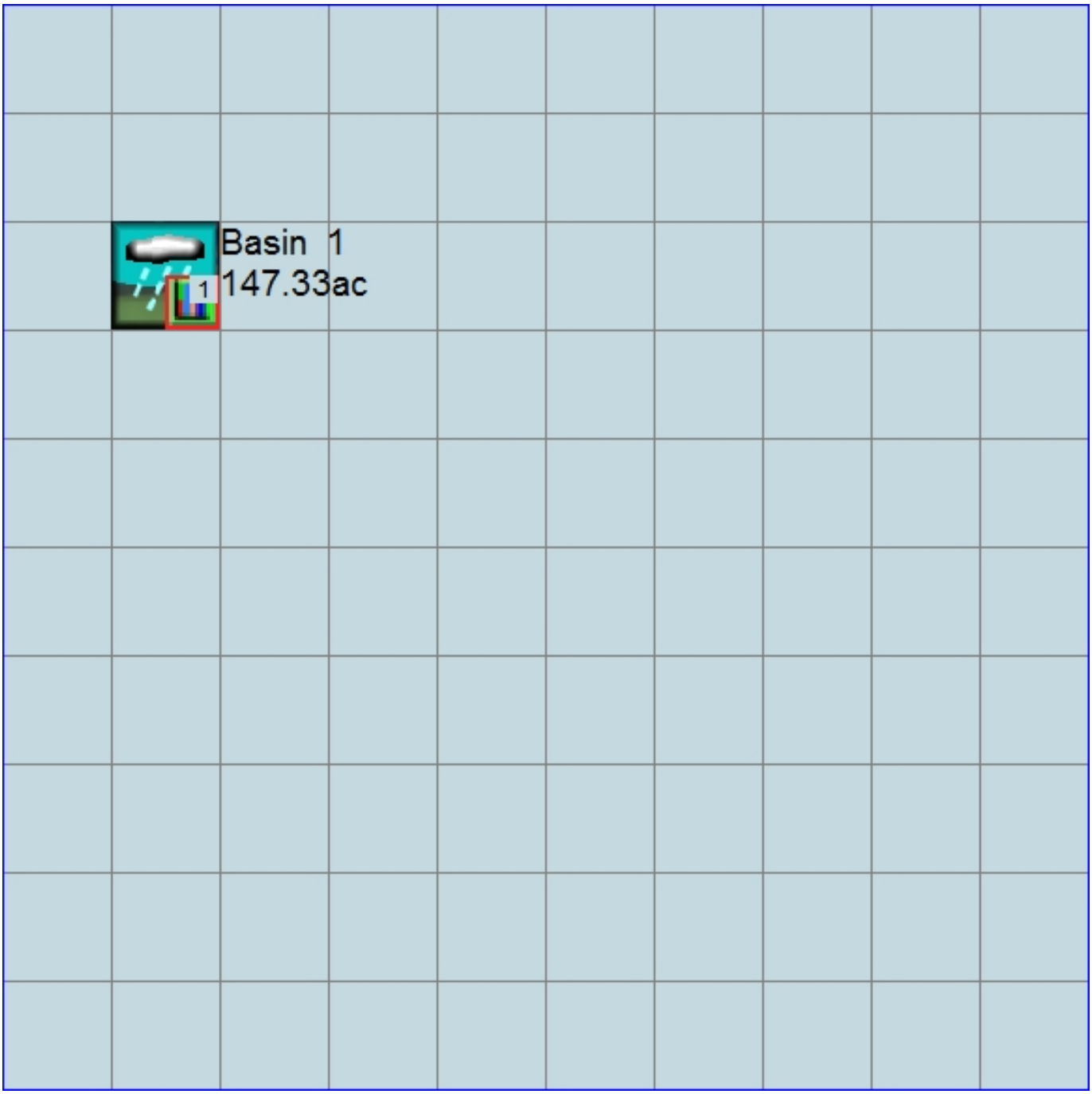
IMPLND Changes

No IMPLND changes have been made.

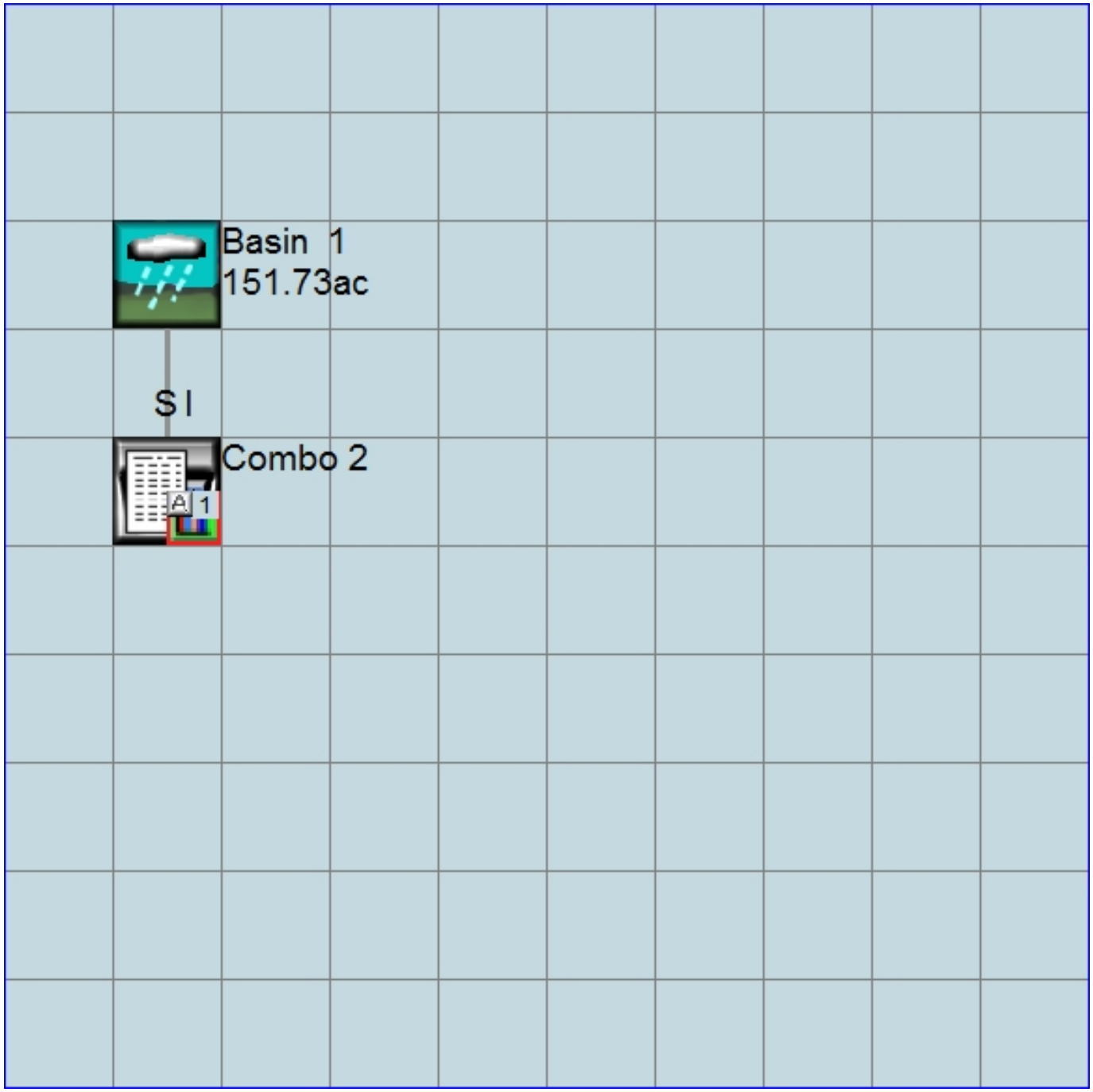
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Appendix

Pre-Project Schematic



Mitigated Schematic



Pre-Project UCI File

```
RUN

GLOBAL
  WWHM4 model simulation
  START       1964 10 01        END    2004 09 30
  RUN INTERP OUTPUT LEVEL    3    0
  RESUME     0 RUN     1                    UNIT SYSTEM     1
END GLOBAL

FILES
<File>  <Un#>   <-----------File Name------------------------------>***
<-ID->                                                              ***
WDM         26   Combo 2_pre_rev 11-6.wdm
MESSU       25   PreCombo 2_pre_rev 11-6.MES
            27   PreCombo 2_pre_rev 11-6.L61
            28   PreCombo 2_pre_rev 11-6.L62
            30   POCCombo 2_pre_rev 11-61.dat
END FILES

OPN SEQUENCE
    INGRP               INDELT 00:60
      PERLND      34
      PERLND      50
      COPY       501
      DISPLY       1
    END INGRP
END OPN SEQUENCE
DISPLY
  DISPLY-INFO1
    # -  #<----------Title---------->***TRAN PIVL DIG1 FIL1  PYR DIG2 FIL2 YRND
    1        Basin  1                  MAX                    1    2   30    9
  END DISPLY-INFO1
END DISPLY
COPY
  TIMESERIES
    # -  #  NPT  NMN ***
    1         1    1
  501         1    1
  END TIMESERIES
END COPY
GENER
  OPCODE
    #    # OPCD ***
  END OPCODE
  PARM
    #    #         K ***
  END PARM
END GENER
PERLND
  GEN-INFO
    <PLS ><-------Name------->NBLKS   Unit-systems   Printer ***
    # -  #                          User  t-series Engl Metr ***
                                        in  out           ***
   34     C,Grass,Mod (1-2%)      1    1    1    1   27    0
   50     D,Grass,Mod (1-2%)      1    1    1    1   27    0
  END GEN-INFO
  *** Section PWATER***

  ACTIVITY
    <PLS > ************ Active Sections ******************************
    # -  # ATMP SNOW PWAT  SED  PST  PWG PQAL MSTL PEST NITR PHOS TRAC ***
   34         0    0    1    0    0    0    0    0    0    0    0    0
   50         0    0    1    0    0    0    0    0    0    0    0    0
  END ACTIVITY

  PRINT-INFO
    <PLS > ***************** Print-flags ***************************** PIVL  PYR
    # -  # ATMP SNOW PWAT  SED  PST  PWG PQAL MSTL PEST NITR PHOS TRAC  *********
```

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```
   34         0    0    4    0    0    0    0    0    0    0    0    0    1    9
   50         0    0    4    0    0    0    0    0    0    0    0    0    1    9
  END PRINT-INFO

  PWAT-PARM1
    <PLS >  PWATER variable monthly parameter value flags  ***
    # -  # CSNO RTOP UZFG  VCS  VUZ  VNN VIFW VIRC  VLE INFC  HWT ***
   34         0    0    0    1    0    0    0    0    1    0    0
   50         0    0    0    1    0    0    0    0    1    0    0
  END PWAT-PARM1

  PWAT-PARM2
    <PLS >      PWATER input info: Part 2         ***
    # -  # ***FOREST      LZSN    INFILT      LSUR     SLSUR     KVARY     AGWRC
   34              0      4.45     0.043       400      0.02         3      0.92
   50              0      4.35     0.028       400      0.02         3      0.92
  END PWAT-PARM2

  PWAT-PARM3
    <PLS >      PWATER input info: Part 3         ***
    # -  # ***PETMAX    PETMIN    INFEXP    INFILD    DEEPFR    BASETP    AGWETP
   34             40        35         2         2         0         0      0.05
   50             40        35         2         2         0         0      0.05
  END PWAT-PARM3
  PWAT-PARM4
    <PLS >     PWATER input info: Part 4                              ***
    # -  #     CEPSC      UZSN      NSUR     INTFW       IRC     LZETP ***
   34              0      0.28      0.25      0.65      0.48         0
   50              0      0.28      0.25      0.65      0.48         0
  END PWAT-PARM4
  MON-LZETPARM
    <PLS >      PWATER input info: Part 3         ***
    # -  #  JAN  FEB  MAR  APR  MAY  JUN  JUL  AUG  SEP  OCT  NOV  DEC  ***
   34       0.4  0.4  0.4 0.45  0.5 0.55 0.55 0.55 0.55 0.55 0.45  0.4
   50       0.4  0.4  0.4 0.45  0.5 0.55 0.55 0.55 0.55 0.55 0.45  0.4
  END MON-LZETPARM
  MON-INTERCEP
    <PLS >      PWATER input info: Part 3         ***
    # -  #  JAN  FEB  MAR  APR  MAY  JUN  JUL  AUG  SEP  OCT  NOV  DEC  ***
   34      0.12 0.12 0.12 0.11  0.1  0.1  0.1  0.1  0.1  0.1 0.11 0.12
   50      0.12 0.12 0.12 0.11  0.1  0.1  0.1  0.1  0.1  0.1 0.11 0.12
  END MON-INTERCEP

  PWAT-STATE1
    <PLS > *** Initial conditions at start of simulation
               ran from 1990 to end of 1992 (pat 1-11-95) RUN 21 ***
    # -  # ***  CEPS      SURS       UZS      IFWS       LZS      AGWS      GWVS
   34              0         0      0.15         0         4      0.05         0
   50              0         0      0.15         0         4      0.05         0
  END PWAT-STATE1

END PERLND

IMPLND
  GEN-INFO
    <PLS ><-------Name------->   Unit-systems   Printer ***
    # -  #                     User  t-series Engl Metr ***
                                     in  out           ***
  END GEN-INFO
  *** Section IWATER***

  ACTIVITY
    <PLS > ************ Active Sections ******************************
    # -  # ATMP SNOW IWAT  SLD  IWG IQAL   ***
  END ACTIVITY

  PRINT-INFO
    <ILS > ******** Print-flags ******** PIVL  PYR
    # -  # ATMP SNOW IWAT  SLD  IWG IQAL    *********
  END PRINT-INFO
```

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```
  IWAT-PARM1
    <PLS >  IWATER variable monthly parameter value flags  ***
    # -  # CSNO RTOP  VRS  VNN RTLI     ***
  END IWAT-PARM1

  IWAT-PARM2
    <PLS >      IWATER input info: Part 2         ***
    # -  # ***  LSUR     SLSUR      NSUR     RETSC
  END IWAT-PARM2

  IWAT-PARM3
    <PLS >      IWATER input info: Part 3         ***
    # -  # ***PETMAX    PETMIN
  END IWAT-PARM3

  IWAT-STATE1
    <PLS > *** Initial conditions at start of simulation
    # -  # ***  RETS      SURS
  END IWAT-STATE1

END IMPLND

SCHEMATIC
<-Source->                 <--Area-->     <-Target->   MBLK    ***
<Name>   #                 <-factor->     <Name>   #   Tbl#    ***
Basin  1***
PERLND  34                       33.4     COPY   501     12
PERLND  34                       33.4     COPY   501     13
PERLND  50                     113.93     COPY   501     12
PERLND  50                     113.93     COPY   501     13

******Routing******
END SCHEMATIC

NETWORK
<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Target vols> <-Grp> <-Member->  ***
<Name>   #        <Name> # #<-factor->strg <Name>   #   #        <Name> # #  ***
COPY   501 OUTPUT MEAN   1 1   12.1        DISPLY   1     INPUT  TIMSER 1



<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Target vols> <-Grp> <-Member->  ***
<Name>   #        <Name> # #<-factor->strg <Name>   #   #        <Name> # #  ***
END NETWORK

RCHRES
  GEN-INFO
    RCHRES       Name        Nexits   Unit Systems   Printer                ***
    # -  #<----------------><---> User T-series  Engl Metr LKFG             ***
                                       in  out                              ***
  END GEN-INFO
  *** Section RCHRES***

  ACTIVITY
    <PLS > ************ Active Sections ****************************
    # -  # HYFG ADFG CNFG HTFG SDFG GQFG OXFG NUFG PKFG PHFG ***
  END ACTIVITY

  PRINT-INFO
    <PLS > ***************** Print-flags ****************** PIVL  PYR
    # -  # HYDR ADCA CONS HEAT  SED  GQL OXRX NUTR PLNK PHCB PIVL  PYR  *********
  END PRINT-INFO

  HYDR-PARM1
    RCHRES  Flags for each HYDR Section                                  ***
    # -  #  VC A1 A2 A3  ODFVFG for each *** ODGTFG for each     FUNCT  for each
            FG FG FG FG  possible  exit  *** possible  exit      possible  exit
             *  *  *  *    *  *  *  *  *       *  *  *  *  *        ***
  END HYDR-PARM1
```

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```
  HYDR-PARM2
    # -  #    FTABNO       LEN      DELTH     STCOR        KS      DB50       ***
  <------><--------><--------><--------><--------><--------><--------><--------> ***
  END HYDR-PARM2
  HYDR-INIT
    RCHRES  Initial conditions for each HYDR section                            ***
    # -  # ***   VOL     Initial  value  of COLIND     Initial  value  of OUTDGT
         *** ac-ft     for each possible exit        for each possible exit
  <------><-------->     <---><---><---><---><---> *** <---><---><---><---><--->
  END HYDR-INIT
END RCHRES

SPEC-ACTIONS
END SPEC-ACTIONS
FTABLES
END FTABLES

EXT SOURCES
<-Volume-> <Member> SsysSgap<--Mult-->Tran <-Target vols> <-Grp> <-Member->  ***
<Name>   # <Name> # tem strg<-factor->strg <Name>   #   #        <Name> # #  ***
WDM      2 PREC     ENGL    1.045          PERLND   1 999 EXTNL  PREC
WDM      2 PREC     ENGL    1.045          IMPLND   1 999 EXTNL  PREC
WDM      1 EVAP     ENGL    1              PERLND   1 999 EXTNL  PETINP
WDM      1 EVAP     ENGL    1              IMPLND   1 999 EXTNL  PETINP

END EXT SOURCES

EXT TARGETS
<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Volume-> <Member> Tsys Tgap Amd ***
<Name>   #        <Name> # #<-factor->strg <Name>   # <Name>    tem strg strg***
COPY   501 OUTPUT MEAN   1 1     12.1      WDM    501 FLOW     ENGL      REPL
END EXT TARGETS

MASS-LINK
<Volume>   <-Grp> <-Member-><--Mult-->     <Target>       <-Grp> <-Member->***
<Name>            <Name> # #<-factor->     <Name>                <Name> # #***
  MASS-LINK       12
PERLND     PWATER SURO       0.083333      COPY           INPUT  MEAN
  END MASS-LINK   12

  MASS-LINK       13
PERLND     PWATER IFWO       0.083333      COPY           INPUT  MEAN
  END MASS-LINK   13


END MASS-LINK

END RUN
```

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Mitigated UCI File

```
RUN

GLOBAL
  WWHM4 model simulation
  START       1964 10 01        END    2004 09 30
  RUN INTERP OUTPUT LEVEL    3    0
  RESUME     0 RUN     1                    UNIT SYSTEM     1
END GLOBAL

FILES
<File>  <Un#>   <-----------File Name------------------------------>***
<-ID->                                                              ***
WDM         26   Combo 2_pre_rev 11-6.wdm
MESSU       25   MitCombo 2_pre_rev 11-6.MES
            27   MitCombo 2_pre_rev 11-6.L61
            28   MitCombo 2_pre_rev 11-6.L62
            30   POCCombo 2_pre_rev 11-61.dat
END FILES

OPN SEQUENCE
    INGRP               INDELT 00:60
      PERLND      42
      PERLND      34
      PERLND      58
      PERLND      50
      IMPLND       2
      RCHRES       1
      COPY         1
      COPY       501
      DISPLY       1
    END INGRP
END OPN SEQUENCE
DISPLY
  DISPLY-INFO1
    # -  #<----------Title---------->***TRAN PIVL DIG1 FIL1  PYR DIG2 FIL2 YRND
    1        Combo 2                  MAX                    1    2   30    9
  END DISPLY-INFO1
END DISPLY
COPY
  TIMESERIES
    # -  #  NPT  NMN ***
    1         1    1
  501         1    1
  END TIMESERIES
END COPY
GENER
  OPCODE
    #    # OPCD ***
  END OPCODE
  PARM
    #    #         K ***
  END PARM
END GENER
PERLND
  GEN-INFO
    <PLS ><-------Name------->NBLKS   Unit-systems   Printer ***
    # -  #                          User  t-series Engl Metr ***
                                          in  out           ***
   42     C,Urban,Mod (1-2%)      1    1    1    1   27    0
   34     C,Grass,Mod (1-2%)      1    1    1    1   27    0
   58     D,Urban,Mod (1-2%)      1    1    1    1   27    0
   50     D,Grass,Mod (1-2%)      1    1    1    1   27    0
  END GEN-INFO
  *** Section PWATER***

  ACTIVITY
    <PLS > ************ Active Sections ******************************
    # -  # ATMP SNOW PWAT  SED  PST  PWG PQAL MSTL PEST NITR PHOS TRAC ***
```

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```
 42         0    0    1    0    0    0    0    0    0    0    0    0
 34         0    0    1    0    0    0    0    0    0    0    0    0
 58         0    0    1    0    0    0    0    0    0    0    0    0
 50         0    0    1    0    0    0    0    0    0    0    0    0
END ACTIVITY

PRINT-INFO
  <PLS > ***************** Print-flags **************************** PIVL  PYR
  # -  # ATMP SNOW PWAT  SED  PST  PWG PQAL MSTL PEST NITR PHOS TRAC  *********
 42         0    0    4    0    0    0    0    0    0    0    0    0    1    9
 34         0    0    4    0    0    0    0    0    0    0    0    0    1    9
 58         0    0    4    0    0    0    0    0    0    0    0    0    1    9
 50         0    0    4    0    0    0    0    0    0    0    0    0    1    9
END PRINT-INFO

PWAT-PARM1
  <PLS >  PWATER variable monthly parameter value flags  ***
  # -  # CSNO RTOP UZFG  VCS  VUZ  VNN VIFW VIRC  VLE INFC  HWT ***
 42         0    0    0    1    0    0    0    0    1    0    0
 34         0    0    0    1    0    0    0    0    1    0    0
 58         0    0    0    1    0    0    0    0    1    0    0
 50         0    0    0    1    0    0    0    0    1    0    0
END PWAT-PARM1

PWAT-PARM2
  <PLS >      PWATER input info: Part 2          ***
  # -  # ***FOREST      LZSN    INFILT      LSUR     SLSUR      KVARY      AGWRC
 42              0       4.4      0.03       400      0.02          3       0.92
 34              0      4.45     0.043       400      0.02          3       0.92
 58              0       4.4     0.018       400      0.02          3       0.92
 50              0      4.35     0.028       400      0.02          3       0.92
END PWAT-PARM2

PWAT-PARM3
  <PLS >      PWATER input info: Part 3          ***
  # -  # ***PETMAX    PETMIN    INFEXP    INFILD    DEEPFR    BASETP    AGWETP
 42             40        35         2         2         0         0      0.05
 34             40        35         2         2         0         0      0.05
 58             40        35         2         2         0         0      0.05
 50             40        35         2         2         0         0      0.05
END PWAT-PARM3
PWAT-PARM4
  <PLS >     PWATER input info: Part 4                                  ***
  # -  #     CEPSC      UZSN      NSUR     INTFW       IRC     LZETP ***
 42              0      0.28      0.25      0.48      0.38         0
 34              0      0.28      0.25      0.65      0.48         0
 58              0      0.28      0.25      0.48      0.38         0
 50              0      0.28      0.25      0.65      0.48         0
END PWAT-PARM4
MON-LZETPARM
  <PLS >      PWATER input info: Part 3          ***
  # -  #  JAN  FEB  MAR  APR  MAY  JUN  JUL  AUG  SEP  OCT  NOV  DEC  ***
 42       0.5  0.5  0.5  0.6 0.65 0.65 0.65 0.65 0.65 0.65 0.55  0.5
 34       0.4  0.4  0.4 0.45  0.5 0.55 0.55 0.55 0.55 0.55 0.45  0.4
 58       0.5  0.5  0.5  0.6 0.65 0.65 0.65 0.65 0.65 0.65 0.55  0.5
 50       0.4  0.4  0.4 0.45  0.5 0.55 0.55 0.55 0.55 0.55 0.45  0.4
END MON-LZETPARM
MON-INTERCEP
  <PLS >      PWATER input info: Part 3          ***
  # -  #  JAN  FEB  MAR  APR  MAY  JUN  JUL  AUG  SEP  OCT  NOV  DEC  ***
 42      0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11
 34      0.12 0.12 0.12 0.11  0.1  0.1  0.1  0.1  0.1  0.1 0.11 0.12
 58      0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11
 50      0.12 0.12 0.12 0.11  0.1  0.1  0.1  0.1  0.1  0.1 0.11 0.12
END MON-INTERCEP

PWAT-STATE1
  <PLS > *** Initial conditions at start of simulation
             ran from 1990 to end of 1992 (pat 1-11-95) RUN 21 ***
  # -  # ***  CEPS      SURS       UZS      IFWS       LZS       AGWS      GWVS
```

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   42             0         0      0.15         0         4      0.05         0
   34             0         0      0.15         0         4      0.05         0
   58             0         0      0.15         0         4      0.05         0
   50             0         0      0.15         0         4      0.05         0
  END PWAT-STATE1

END PERLND

IMPLND
  GEN-INFO
    <PLS ><-------Name------->   Unit-systems   Printer ***
    # -  #                     User  t-series Engl Metr ***
                                      in  out           ***
    2     Imperv,Mod (1-2%)       1    1    1   27    0
  END GEN-INFO
  *** Section IWATER***

  ACTIVITY
    <PLS > ************* Active Sections ******************************
    # -  # ATMP SNOW IWAT  SLD  IWG IQAL    ***
    2         0    0    1    0    0    0
  END ACTIVITY

  PRINT-INFO
    <ILS > ******** Print-flags ******** PIVL  PYR
    # -  # ATMP SNOW IWAT  SLD  IWG IQAL     *********
    2         0    0    4    0    0    0     1    9
  END PRINT-INFO

  IWAT-PARM1
    <PLS >  IWATER variable monthly parameter value flags  ***
    # -  # CSNO RTOP  VRS  VNN RTLI      ***
    2         0    0    0    0    0
  END IWAT-PARM1

  IWAT-PARM2
    <PLS >      IWATER input info: Part 2         ***
    # -  # ***  LSUR      SLSUR      NSUR     RETSC
    2           100       0.02      0.05       0.1
  END IWAT-PARM2

  IWAT-PARM3
    <PLS >      IWATER input info: Part 3         ***
    # -  # ***PETMAX    PETMIN
    2              0         0
  END IWAT-PARM3

  IWAT-STATE1
    <PLS > *** Initial conditions at start of simulation
    # -  # ***  RETS      SURS
    2              0         0
  END IWAT-STATE1

END IMPLND

SCHEMATIC
<-Source->                 <--Area-->     <-Target->   MBLK   ***
<Name>   #                 <-factor->     <Name>   #   Tbl#   ***
Basin  1***
PERLND  42                      9.29     RCHRES   1      2
PERLND  42                      9.29     RCHRES   1      3
PERLND  34                     16.96     RCHRES   1      2
PERLND  34                     16.96     RCHRES   1      3
PERLND  58                     20.59     RCHRES   1      2
PERLND  58                     20.59     RCHRES   1      3
PERLND  50                     45.47     RCHRES   1      2
PERLND  50                     45.47     RCHRES   1      3
IMPLND   2                     59.42     RCHRES   1      5

******Routing******
```

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```
PERLND  42                        9.29     COPY     1     12
PERLND  34                       16.96     COPY     1     12
PERLND  58                       20.59     COPY     1     12
PERLND  50                       45.47     COPY     1     12
IMPLND   2                       59.42     COPY     1     15
PERLND  42                        9.29     COPY     1     13
PERLND  34                       16.96     COPY     1     13
PERLND  58                       20.59     COPY     1     13
PERLND  50                       45.47     COPY     1     13
RCHRES   1                           1     COPY   501     16
END SCHEMATIC

NETWORK
<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Target vols> <-Grp> <-Member->  ***
<Name>   #        <Name> # #<-factor->strg <Name>   #   #        <Name> # #  ***
COPY   501 OUTPUT MEAN   1 1   12.1        DISPLY   1     INPUT  TIMSER 1



<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Target vols> <-Grp> <-Member->  ***
<Name>   #        <Name> # #<-factor->strg <Name>   #   #        <Name> # #  ***
END NETWORK

RCHRES
  GEN-INFO
    RCHRES       Name        Nexits   Unit Systems   Printer                ***
    # -  #<------------------><---> User T-series  Engl Metr LKFG           ***
                                       in  out                              ***
    1     Combo 2                 1     1    1    1   28    0    1
  END GEN-INFO
  *** Section RCHRES***

  ACTIVITY
    <PLS > ************ Active Sections ******************************
    # -  # HYFG ADFG CNFG HTFG SDFG GQFG OXFG NUFG PKFG PHFG ***
    1         1    0    0    0    0    0    0    0    0    0
  END ACTIVITY

  PRINT-INFO
    <PLS > ***************** Print-flags ****************** PIVL  PYR
    # -  # HYDR ADCA CONS HEAT  SED  GQL OXRX NUTR PLNK PHCB PIVL  PYR  *********
    1         4    0    0    0    0    0    0    0    0    0    1    9
  END PRINT-INFO

  HYDR-PARM1
    RCHRES  Flags for each HYDR Section                                   ***
    # -  #  VC A1 A2 A3  ODFVFG for each *** ODGTFG for each     FUNCT  for each
            FG FG FG FG  possible  exit  *** possible  exit      possible  exit
             *  *  *  *    *  *  *  *  *       *  *  *  *  *         ***
    1        0  1  0  0    4  0  0  0  0       0  0  0  0  0       2  2  2  2  2
  END HYDR-PARM1

  HYDR-PARM2
    # -  #    FTABNO       LEN     DELTH     STCOR        KS      DB50       ***
  <------><--------><--------><--------><--------><--------><--------><------>***
    1              1      0.01       0.0       0.0       0.5       0.0
  END HYDR-PARM2
  HYDR-INIT
    RCHRES  Initial conditions for each HYDR section                      ***
    # -  # ***   VOL     Initial  value  of COLIND     Initial  value  of OUTDGT
          *** ac-ft     for each possible exit        for each possible exit
  <------><-------->     <---><---><---><---><---> *** <---><---><---><---><--->
    1         0            4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
  END HYDR-INIT
END RCHRES

SPEC-ACTIONS
END SPEC-ACTIONS
FTABLES
  FTABLE      1
```

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```
  62    4
     Depth      Area    Volume  Outflow1 Velocity  Travel Time***
      (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
  0.000000  0.000000  0.000000  0.000000
  0.100000  1.110000  0.111000  0.043900
  0.250000  1.131400  0.280600  0.173400
  0.500000  1.152100  0.563300  0.451500
  0.750000  1.173000  0.852000  0.615200
  1.000000  1.194100  1.146500  0.743800
  1.250000  1.215400  1.446800  0.853200
  1.500000  1.236900  1.753100  0.950100
  1.750000  1.258700  2.065200  1.037900
  2.000000  1.280600  2.383100  1.118900
  2.250000  1.302700  2.707000  1.194400
  2.500000  1.325000  3.036700  1.265500
  2.750000  1.347500  3.372300  1.332700
  3.000000  1.370300  3.713700  1.590200
  3.250000  1.393200  4.061100  2.300300
  3.500000  1.416300  4.414300  3.261700
  3.750000  1.439600  4.773300  4.416400
  4.000000  1.463100  5.138300  5.509700
  4.250000  1.486900  5.509100  6.248400
  4.500000  1.510800  5.885800  6.895200
  4.750000  1.534900  6.268300  7.478600
  5.000000  1.559300  6.656700  10.22090
  5.250000  1.583800  7.051000  14.75380
  5.500000  1.608500  7.451200  20.44650
  5.750000  1.633400  7.857200  27.07620
  6.000000  1.658600  8.269100  34.51520
  6.250000  1.683900  8.686900  42.67760
  6.500000  1.709400  9.110600  51.50050
  6.750000  1.735200  9.540100  60.93530
  7.000000  1.761100  9.975500  70.94290
  7.250000  1.787200  10.41670  82.00560
  7.500000  1.813600  10.86380  94.88350
  7.750000  1.840100  11.31680  110.8658
  8.000000  1.866900  11.77570  129.0010
  8.250000  1.893800  12.24050  148.9080
  8.500000  1.920900  12.71110  170.3667
  8.750000  1.948300  13.18750  193.2293
  9.000000  1.975800  13.66990  217.3876
  9.250000  2.003600  14.15810  242.7577
  9.500000  2.031500  14.65220  269.2715
  9.750000  2.059700  15.15220  296.8727
  10.00000  2.088000  15.65800  325.5131
  10.25000  2.116500  16.16970  355.1511
  10.50000  2.145300  16.68730  385.7501
  10.75000  2.174200  17.21070  417.2776
  11.00000  2.203400  17.74000  449.7043
  11.25000  2.232700  18.27520  483.0039
  11.50000  2.262300  18.81630  517.1522
  11.75000  2.292000  19.36320  552.1272
  12.00000  2.322000  19.91600  587.9085
  12.25000  2.352200  20.47470  624.4773
  12.50000  2.382500  21.03920  661.8161
  12.75000  2.413100  21.60960  699.9085
  13.00000  2.443800  22.18590  738.7392
  13.25000  2.474800  22.76800  778.2938
  13.50000  2.505900  23.35610  818.5588
  13.75000  2.537300  23.95000  859.5214
  14.00000  2.568900  24.54970  901.1695
  14.25000  2.600600  25.15530  943.4916
  14.50000  2.632600  25.76680  986.4769
  14.75000  2.664700  26.38420  1030.115
  15.00000  2.697100  27.00750  1074.395
  END FTABLE  1
END FTABLES

EXT SOURCES
<-Volume-> <Member> SsysSgap<--Mult-->Tran <-Target vols> <-Grp> <-Member->  ***
```

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```
<Name>   # <Name> # tem strg<-factor->strg <Name>   #   #        <Name> # #  ***
WDM      2 PREC     ENGL    1.045          PERLND   1 999 EXTNL  PREC
WDM      2 PREC     ENGL    1.045          IMPLND   1 999 EXTNL  PREC
WDM      1 EVAP     ENGL    1              PERLND   1 999 EXTNL  PETINP
WDM      1 EVAP     ENGL    1              IMPLND   1 999 EXTNL  PETINP
WDM     22 IRRG     ENGL    0.7       SAME PERLND  42     EXTNL  SURLI
WDM     22 IRRG     ENGL    0.7       SAME PERLND  58     EXTNL  SURLI
WDM      2 PREC     ENGL    1.045          RCHRES   1     EXTNL  PREC
WDM      1 EVAP     ENGL    1              RCHRES   1     EXTNL  POTEV

END EXT SOURCES

EXT TARGETS
<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Volume-> <Member> Tsys Tgap Amd ***
<Name>   #        <Name> # #<-factor->strg <Name>   # <Name>    tem strg strg***
RCHRES   1 HYDR   RO     1 1        1      WDM   1002 FLOW     ENGL      REPL
RCHRES   1 HYDR   STAGE  1 1        1      WDM   1003 STAG     ENGL      REPL
COPY     1 OUTPUT MEAN   1 1     12.1      WDM    701 FLOW     ENGL      REPL
COPY   501 OUTPUT MEAN   1 1     12.1      WDM    801 FLOW     ENGL      REPL
END EXT TARGETS

MASS-LINK
<Volume>   <-Grp> <-Member-><--Mult-->     <Target>       <-Grp> <-Member->***
<Name>            <Name> # #<-factor->     <Name>                <Name> # #***
  MASS-LINK        2
PERLND     PWATER SURO       0.083333      RCHRES         INFLOW IVOL
  END MASS-LINK    2

  MASS-LINK        3
PERLND     PWATER IFWO       0.083333      RCHRES         INFLOW IVOL
  END MASS-LINK    3

  MASS-LINK        5
IMPLND     IWATER SURO       0.083333      RCHRES         INFLOW IVOL
  END MASS-LINK    5

  MASS-LINK       12
PERLND     PWATER SURO       0.083333      COPY           INPUT  MEAN
  END MASS-LINK   12

  MASS-LINK       13
PERLND     PWATER IFWO       0.083333      COPY           INPUT  MEAN
  END MASS-LINK   13

  MASS-LINK       15
IMPLND     IWATER SURO       0.083333      COPY           INPUT  MEAN
  END MASS-LINK   15

  MASS-LINK       16
RCHRES     ROFLOW                          COPY           INPUT  MEAN
  END MASS-LINK   16


END MASS-LINK

END RUN
```

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SAHM

PROJECT REPORT

General Model Information

Project Name: Combo3_post
Site Name:
Site Address:
City:
Report Date: 11/27/2013
Gage: ORANGEVA
Data Start: 1964/10/01
Data End: 2004/09/30
Timestep: Hourly
Precip Scale: 1.14
Version: 2013/08/23

POC Thresholds

Low Flow Threshold for POC1:	25 Percent of the 2 Year
High Flow Threshold for POC1:	10 Year

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Landuse Basin Data

Pre-Project Land Use

Combo #3

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
D,Grass,VSteep(>5%)	81.13
Pervious Total	81.13

Impervious Land Use	Acres
Impervious Total	0
Basin Total	81.13

Element Flows To:

Surface	Interflow	Groundwater

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Mitigated Land Use

Combo#3

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
D,Urban,VSteep(>5%)	30.06
D,Grass,VSteep(>5%)	2.09
Pervious Total	32.15

Impervious Land Use	Acres
Imperv,VSteep(>5%)	48.98
Impervious Total	48.98
Basin Total	81.13

Element Flows To:

Surface	Interflow	Groundwater
SSD Table 1	SSD Table 1	

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Mitigated Routing

SSD Table 1

Depth: 12.75 ft.
Element Flows To:
Outlet 1 Outlet 2

SSD Table Hydraulic Table

Stage (ft)	Area (ac)	Volume (ac-ft)	Manual	NotUsed	NotUsed	NotUsed	NotUsed
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.100	1.640	0.164	0.053	0.000	0.000	0.000	0.000
0.250	1.673	0.415	0.208	0.000	0.000	0.000	0.000
0.500	1.705	0.837	0.589	0.000	0.000	0.000	0.000
0.750	1.737	1.268	0.851	0.000	0.000	0.000	0.000
1.000	1.769	1.706	1.043	0.000	0.000	0.000	0.000
1.250	1.802	2.152	1.204	0.000	0.000	0.000	0.000
1.500	1.834	2.606	1.346	0.000	0.000	0.000	0.000
1.750	1.866	3.068	1.530	0.000	0.000	0.000	0.000
2.000	1.898	3.538	2.413	0.000	0.000	0.000	0.000
2.250	1.930	4.016	3.848	0.000	0.000	0.000	0.000
2.500	1.962	4.502	6.946	0.000	0.000	0.000	0.000
2.750	1.994	4.995	11.25	0.000	0.000	0.000	0.000
3.000	2.026	5.497	16.42	0.000	0.000	0.000	0.000
3.250	2.058	6.007	22.33	0.000	0.000	0.000	0.000
3.500	2.090	6.524	28.88	0.000	0.000	0.000	0.000
3.750	2.122	7.049	36.01	0.000	0.000	0.000	0.000
4.000	2.153	7.582	43.69	0.000	0.000	0.000	0.000
4.250	2.185	8.124	51.87	0.000	0.000	0.000	0.000
4.500	2.217	8.673	60.52	0.000	0.000	0.000	0.000
4.750	2.249	9.230	72.56	0.000	0.000	0.000	0.000
5.000	2.281	9.794	87.07	0.000	0.000	0.000	0.000
5.250	2.313	10.37	103.9	0.000	0.000	0.000	0.000
5.500	2.344	10.95	122.6	0.000	0.000	0.000	0.000
5.750	2.376	11.54	142.9	0.000	0.000	0.000	0.000
6.000	2.408	12.13	164.7	0.000	0.000	0.000	0.000
6.250	2.439	12.74	187.8	0.000	0.000	0.000	0.000
6.500	2.471	13.35	212.2	0.000	0.000	0.000	0.000
6.750	2.503	13.97	237.7	0.000	0.000	0.000	0.000
7.000	2.534	14.60	264.4	0.000	0.000	0.000	0.000
7.250	2.566	15.23	292.1	0.000	0.000	0.000	0.000
7.500	2.598	15.88	320.9	0.000	0.000	0.000	0.000
7.750	2.629	16.53	350.7	0.000	0.000	0.000	0.000
8.000	2.661	17.19	381.4	0.000	0.000	0.000	0.000
8.250	2.692	17.86	413.0	0.000	0.000	0.000	0.000
8.500	2.724	18.53	445.5	0.000	0.000	0.000	0.000
8.750	2.755	19.22	478.8	0.000	0.000	0.000	0.000
9.000	2.787	19.91	513.1	0.000	0.000	0.000	0.000
9.250	2.818	20.61	548.1	0.000	0.000	0.000	0.000
9.500	2.849	21.31	583.9	0.000	0.000	0.000	0.000
9.750	2.881	22.03	620.6	0.000	0.000	0.000	0.000
10.000	2.912	22.75	657.9	0.000	0.000	0.000	0.000
10.25	2.943	23.48	696.1	0.000	0.000	0.000	0.000
10.50	2.975	24.22	735.0	0.000	0.000	0.000	0.000
10.75	3.006	24.97	774.6	0.000	0.000	0.000	0.000

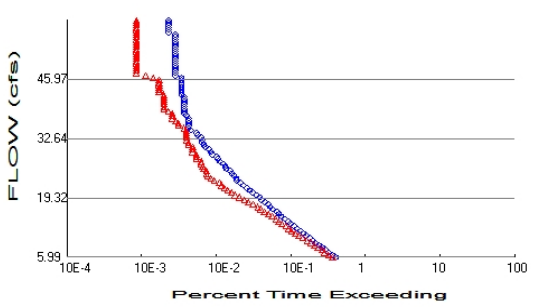
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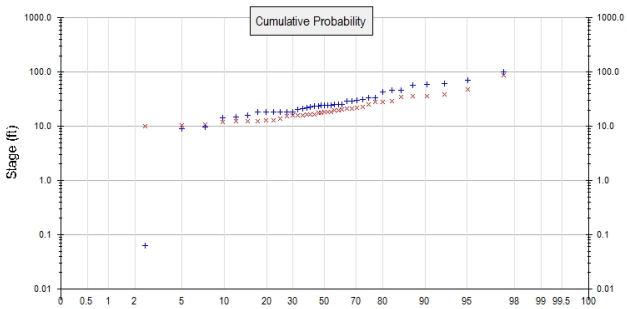
11.00	3.037	25.72	814.9	0.000	0.000	0.000	0.000
11.25	3.068	26.49	855.9	0.000	0.000	0.000	0.000
11.50	3.100	27.26	897.5	0.000	0.000	0.000	0.000
11.75	3.131	28.04	939.9	0.000	0.000	0.000	0.000
12.00	3.162	28.82	982.9	0.000	0.000	0.000	0.000
12.25	3.193	29.62	1026.572	0.000	0.000	0.000	0.000
12.50	3.224	30.42	1070.88	0.000	0.000	0.000	0.000

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Analysis Results

POC 1





\+ Pre-Project x Mitigated

Pre-Project Landuse Totals for POC #1
Total Pervious Area: 81.13
Total Impervious Area: 0

Mitigated Landuse Totals for POC #1
Total Pervious Area: 32.15
Total Impervious Area: 48.98

Flow Frequency Method: Log Pearson Type III 17B

Flow Frequency Return Periods for Pre-Project. POC #1

Return Period	**Flow(cfs)**
2 year	23.95809
5 year	40.429766
10 year	59.298595
25 year	77.598776

Flow Frequency Return Periods for Mitigated. POC #1

Return Period	**Flow(cfs)**
2 year	17.848673
5 year	27.904224
10 year	36.402517
25 year	55.860712

Annual Peaks

Annual Peaks for Pre-Project and Mitigated. POC #1

Year	**Pre-Project**	**Mitigated**
1965	25.075	16.351
1966	9.721	10.663
1967	25.621	21.694
1968	16.119	12.912
1969	24.536	16.047
1970	22.626	18.149
1971	25.276	15.794
1972	14.495	10.465
1973	46.873	29.563
1974	34.043	17.750
1975	18.616	9.932
1976	0.062	12.121
1977	0.021	2.170
1978	61.569	36.543

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1979	18.648	13.788
1980	20.574	19.749
1981	24.416	18.335
1982	33.001	25.474
1983	46.380	27.983
1984	24.758	19.865
1985	23.175	12.489
1986	71.084	46.916
1987	18.604	16.288
1988	21.278	20.797
1989	29.798	17.953
1990	18.504	12.475
1991	21.868	18.296
1992	28.918	27.625
1993	24.047	16.750
1994	9.156	15.176
1995	100.761	87.665
1996	59.714	35.390
1997	56.308	38.820
1998	42.226	35.168
1999	14.905	12.315
2000	28.897	22.702
2001	18.395	12.960
2002	18.333	15.994
2003	23.874	20.799
2004	30.689	20.729

Ranked Annual Peaks

Ranked Annual Peaks for Pre-Project and Mitigated. POC #1

Rank	Pre-Project	Mitigated
1	100.7610	87.6652
2	71.0844	46.9157
3	61.5694	38.8202
4	59.7139	36.5432
5	56.3084	35.3896
6	46.8729	35.1679
7	46.3796	29.5634
8	42.2261	27.9827
9	34.0428	27.6252
10	33.0014	25.4743
11	30.6887	22.7021
12	29.7976	21.6938
13	28.9179	20.7994
14	28.8968	20.7966
15	25.6205	20.7290
16	25.2756	19.8651
17	25.0752	19.7494
18	24.7577	18.3350
19	24.5364	18.2962
20	24.4159	18.1488
21	24.0467	17.9527
22	23.8737	17.7496
23	23.1745	16.7503
24	22.6258	16.3506
25	21.8683	16.2882
26	21.2778	16.0465
27	20.5738	15.9938
28	18.6479	15.7942

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29	18.6158	15.1763
30	18.6040	13.7882
31	18.5043	12.9597
32	18.3952	12.9122
33	18.3334	12.4891
34	16.1190	12.4748
35	14.9050	12.3145
36	14.4949	12.1211
37	9.7214	10.6632
38	9.1558	10.4654
39	0.0623	9.9316
40	0.0210	2.1700

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Duration Flows

The Facility PASSED

Flow(cfs)	Predev	Mit	Percentage	Pass/Fail
5.9895	1405	1266	90	Pass
6.5280	1274	1116	87	Pass
7.0665	1133	1003	88	Pass
7.6049	1028	919	89	Pass
8.1434	932	815	87	Pass
8.6819	838	722	86	Pass
9.2204	751	657	87	Pass
9.7589	690	583	84	Pass
10.2973	629	506	80	Pass
10.8358	563	449	79	Pass
11.3743	519	402	77	Pass
11.9128	481	360	74	Pass
12.4512	427	330	77	Pass
12.9897	386	301	77	Pass
13.5282	350	266	76	Pass
14.0667	323	240	74	Pass
14.6051	291	221	75	Pass
15.1436	261	198	75	Pass
15.6821	243	175	72	Pass
16.2206	228	155	67	Pass
16.7590	202	139	68	Pass
17.2975	189	127	67	Pass
17.8360	173	109	63	Pass
18.3745	157	94	59	Pass
18.9129	142	84	59	Pass
19.4514	135	72	53	Pass
19.9899	122	63	51	Pass
20.5284	108	56	51	Pass
21.0668	99	50	50	Pass
21.6053	91	45	49	Pass
22.1438	81	41	50	Pass
22.6823	74	39	52	Pass
23.2207	66	33	50	Pass
23.7592	65	30	46	Pass
24.2977	61	27	44	Pass
24.8362	57	26	45	Pass
25.3746	54	26	48	Pass
25.9131	48	24	50	Pass
26.4516	46	23	50	Pass
26.9901	44	22	50	Pass
27.5285	40	22	55	Pass
28.0670	37	19	51	Pass
28.6055	36	19	52	Pass
29.1440	31	19	61	Pass
29.6824	30	17	56	Pass
30.2209	28	17	60	Pass
30.7594	25	17	68	Pass
31.2979	24	15	62	Pass
31.8363	23	15	65	Pass
32.3748	23	14	60	Pass
32.9133	22	14	63	Pass
33.4518	20	14	70	Pass
33.9902	19	14	73	Pass

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34.5287	16	14	87	Pass
35.0672	15	13	86	Pass
35.6057	15	11	73	Pass
36.1441	15	11	73	Pass
36.6826	15	10	66	Pass
37.2211	15	9	60	Pass
37.7596	14	9	64	Pass
38.2981	13	9	69	Pass
38.8365	13	8	61	Pass
39.3750	13	7	53	Pass
39.9135	13	7	53	Pass
40.4520	13	7	53	Pass
40.9904	13	7	53	Pass
41.5289	13	7	53	Pass
42.0674	13	7	53	Pass
42.6059	12	7	58	Pass
43.1443	12	6	50	Pass
43.6828	12	6	50	Pass
44.2213	12	6	50	Pass
44.7598	12	6	50	Pass
45.2982	12	6	50	Pass
45.8367	12	6	50	Pass
46.3752	12	5	41	Pass
46.9137	10	4	40	Pass
47.4521	10	3	30	Pass
47.9906	10	3	30	Pass
48.5291	10	3	30	Pass
49.0676	10	3	30	Pass
49.6060	10	3	30	Pass
50.1445	10	3	30	Pass
50.6830	10	3	30	Pass
51.2215	10	3	30	Pass
51.7599	10	3	30	Pass
52.2984	10	3	30	Pass
52.8369	10	3	30	Pass
53.3754	10	3	30	Pass
53.9138	10	3	30	Pass
54.4523	10	3	30	Pass
54.9908	10	3	30	Pass
55.5293	10	3	30	Pass
56.0677	10	3	30	Pass
56.6062	8	3	37	Pass
57.1447	8	3	37	Pass
57.6832	8	3	37	Pass
58.2216	8	3	37	Pass
58.7601	8	3	37	Pass
59.2986	8	3	37	Pass

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Model Default Modifications

Total of 0 changes have been made.

PERLND Changes

No PERLND changes have been made.

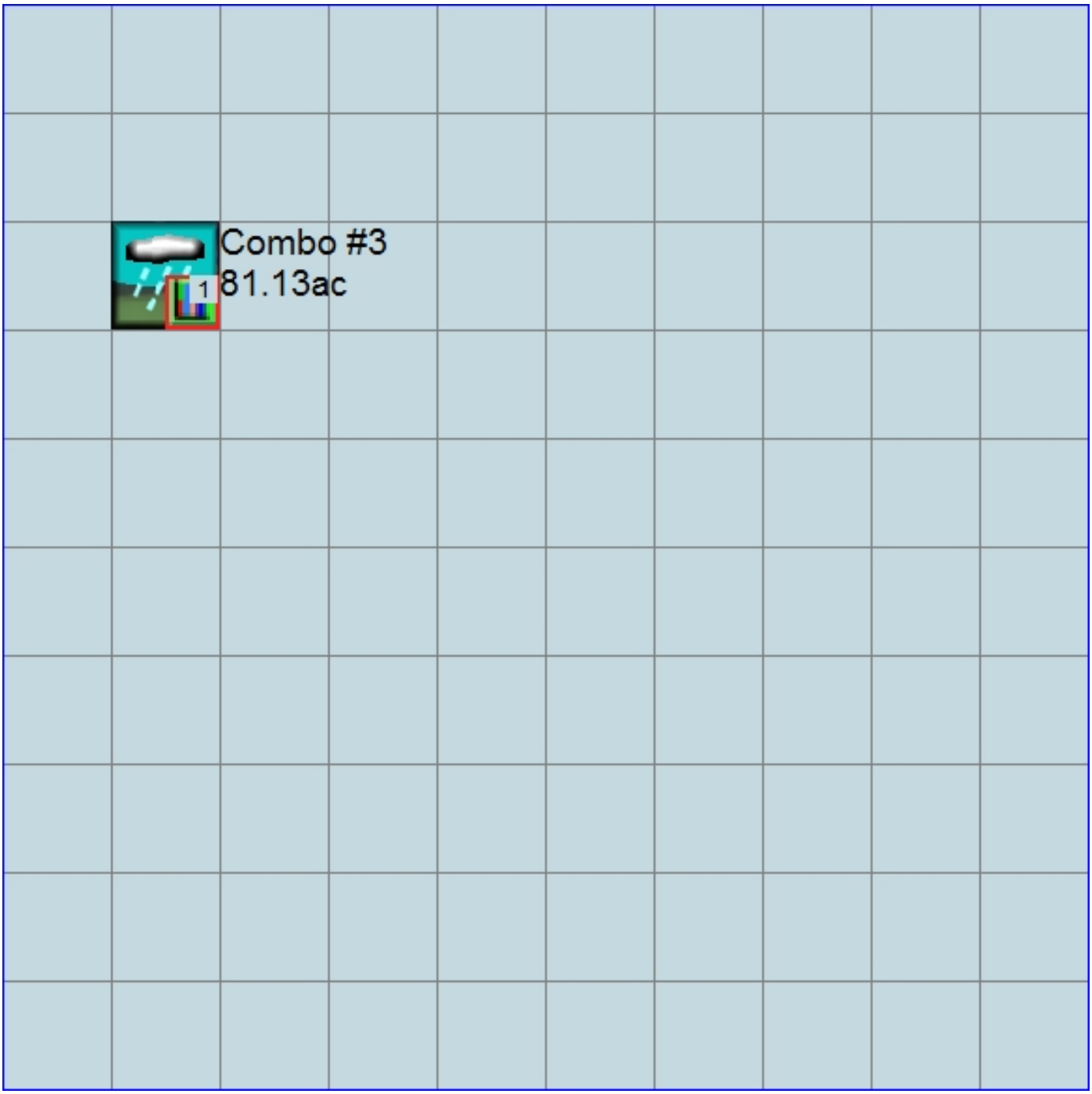
IMPLND Changes

No IMPLND changes have been made.

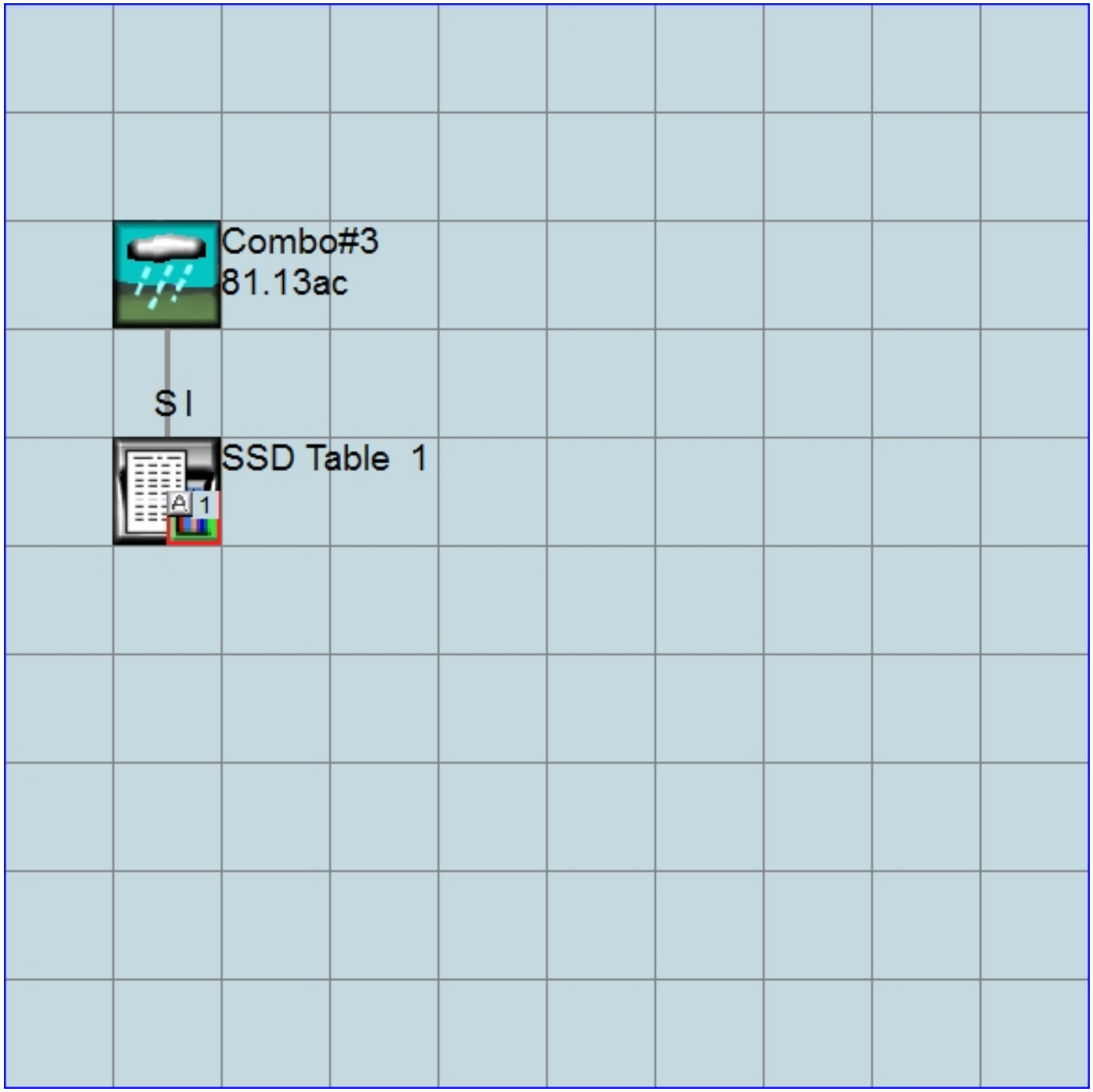
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Appendix

Pre-Project Schematic



Mitigated Schematic



Pre-Project UCI File

```
RUN

GLOBAL
  WWHM4 model simulation
  START       1964 10 01        END    2004 09 30
  RUN INTERP OUTPUT LEVEL    3    0
  RESUME     0 RUN     1                    UNIT SYSTEM     1
END GLOBAL

FILES
<File>  <Un#>   <-----------File Name------------------------------>***
<-ID->                                                              ***
WDM         26   Combo3_post.wdm
MESSU       25   PreCombo3_post.MES
            27   PreCombo3_post.L61
            28   PreCombo3_post.L62
            30   POCCombo3_post1.dat
END FILES

OPN SEQUENCE
    INGRP               INDELT 00:60
      PERLND      52
      COPY       501
      DISPLY       1
    END INGRP
END OPN SEQUENCE
DISPLY
  DISPLY-INFO1
    # -  #<----------Title---------->***TRAN PIVL DIG1 FIL1  PYR DIG2 FIL2 YRND
    1        Combo #3                   MAX                    1    2   30    9
  END DISPLY-INFO1
END DISPLY
COPY
  TIMESERIES
    # -  #  NPT  NMN ***
    1         1    1
  501         1    1
  END TIMESERIES
END COPY
GENER
  OPCODE
    #    # OPCD ***
  END OPCODE
  PARM
    #    #         K ***
  END PARM
END GENER
PERLND
  GEN-INFO
    <PLS ><-------Name------->NBLKS   Unit-systems   Printer ***
    # -  #                         User  t-series Engl Metr ***
                                      in  out           ***
   52     D,Grass,VSteep(>5%)     1    1    1    1   27    0
  END GEN-INFO
  *** Section PWATER***

  ACTIVITY
    <PLS > ************ Active Sections ****************************
    # -  # ATMP SNOW PWAT  SED  PST  PWG PQAL MSTL PEST NITR PHOS TRAC ***
   52         0    0    1    0    0    0    0    0    0    0    0    0
  END ACTIVITY

  PRINT-INFO
    <PLS > ***************** Print-flags **************************** PIVL  PYR
    # -  # ATMP SNOW PWAT  SED  PST  PWG PQAL MSTL PEST NITR PHOS TRAC  *********
   52         0    0    4    0    0    0    0    0    0    0    0    0    1    9
  END PRINT-INFO
```

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```
  PWAT-PARM1
    <PLS >  PWATER variable monthly parameter value flags  ***
    # -  # CSNO RTOP UZFG  VCS  VUZ  VNN VIFW VIRC  VLE INFC  HWT ***
   52         0    0    0    1    0    0    0    0    1    0    0
  END PWAT-PARM1

  PWAT-PARM2
    <PLS >      PWATER input info: Part 2         ***
    # -  # ***FOREST      LZSN    INFILT      LSUR     SLSUR     KVARY     AGWRC
   52             0       4.2      0.02       350       0.1         3      0.92
  END PWAT-PARM2

  PWAT-PARM3
    <PLS >      PWATER input info: Part 3         ***
    # -  # ***PETMAX    PETMIN    INFEXP    INFILD    DEEPFR    BASETP    AGWETP
   52            40        35         2         2         0         0      0.05
  END PWAT-PARM3
  PWAT-PARM4
    <PLS >     PWATER input info: Part 4                              ***
    # -  #     CEPSC      UZSN      NSUR     INTFW       IRC     LZETP ***
   52             0      0.25      0.25       0.5       0.4         0
  END PWAT-PARM4
  MON-LZETPARM
    <PLS >      PWATER input info: Part 3         ***
    # -  #  JAN  FEB  MAR  APR  MAY  JUN  JUL  AUG  SEP  OCT  NOV  DEC  ***
   52       0.4  0.4  0.4 0.45  0.5 0.55 0.55 0.55 0.55 0.55 0.45  0.4
  END MON-LZETPARM
  MON-INTERCEP
    <PLS >      PWATER input info: Part 3         ***
    # -  #  JAN  FEB  MAR  APR  MAY  JUN  JUL  AUG  SEP  OCT  NOV  DEC  ***
   52      0.12 0.12 0.12 0.11  0.1  0.1  0.1  0.1  0.1  0.1 0.11 0.12
  END MON-INTERCEP

  PWAT-STATE1
    <PLS > *** Initial conditions at start of simulation
               ran from 1990 to end of 1992 (pat 1-11-95) RUN 21 ***
    # -  # ***  CEPS      SURS       UZS      IFWS       LZS      AGWS      GWVS
   52             0         0      0.15         0         4      0.05         0
  END PWAT-STATE1

END PERLND

IMPLND
  GEN-INFO
    <PLS ><-------Name------->   Unit-systems   Printer ***
    # -  #                     User  t-series Engl Metr ***
                                     in  out           ***
  END GEN-INFO
  *** Section IWATER***

  ACTIVITY
    <PLS > ************ Active Sections ******************************
    # -  # ATMP SNOW IWAT  SLD  IWG IQAL   ***
  END ACTIVITY

  PRINT-INFO
    <ILS > ******** Print-flags ******** PIVL  PYR
    # -  # ATMP SNOW IWAT  SLD  IWG IQAL    *********
  END PRINT-INFO

  IWAT-PARM1
    <PLS >  IWATER variable monthly parameter value flags  ***
    # -  # CSNO RTOP  VRS  VNN RTLI     ***
  END IWAT-PARM1

  IWAT-PARM2
    <PLS >      IWATER input info: Part 2         ***
    # -  # ***  LSUR     SLSUR      NSUR     RETSC
  END IWAT-PARM2
```

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```
  IWAT-PARM3
    <PLS >      IWATER input info: Part 3         ***
    # -  # ***PETMAX    PETMIN
  END IWAT-PARM3

  IWAT-STATE1
    <PLS > *** Initial conditions at start of simulation
    # -  # ***  RETS      SURS
  END IWAT-STATE1

END IMPLND

SCHEMATIC
<-Source->                  <--Area-->     <-Target->   MBLK   ***
<Name>   #                  <-factor->     <Name>   #   Tbl#   ***
Combo #3***
PERLND  52                       81.13     COPY   501     12
PERLND  52                       81.13     COPY   501     13

******Routing******
END SCHEMATIC

NETWORK
<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Target vols> <-Grp> <-Member->  ***
<Name>   #        <Name> # #<-factor->strg <Name>   #   #        <Name> # #  ***
COPY   501 OUTPUT MEAN   1 1   12.1        DISPLY   1     INPUT  TIMSER 1



<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Target vols> <-Grp> <-Member->  ***
<Name>   #        <Name> # #<-factor->strg <Name>   #   #        <Name> # #  ***
END NETWORK

RCHRES
  GEN-INFO
    RCHRES       Name        Nexits   Unit Systems   Printer                ***
    # -  #<------------------><---> User T-series  Engl Metr LKFG           ***
                                      in  out                               ***
  END GEN-INFO
  *** Section RCHRES***

  ACTIVITY
    <PLS > ************ Active Sections ****************************
    # -  # HYFG ADFG CNFG HTFG SDFG GQFG OXFG NUFG PKFG PHFG ***
  END ACTIVITY

  PRINT-INFO
    <PLS > ***************** Print-flags ******************* PIVL  PYR
    # -  # HYDR ADCA CONS HEAT  SED  GQL OXRX NUTR PLNK PHCB PIVL  PYR  *********
  END PRINT-INFO

  HYDR-PARM1
    RCHRES  Flags for each HYDR Section                                 ***
    # -  #  VC A1 A2 A3  ODFVFG for each *** ODGTFG for each     FUNCT  for each
            FG FG FG FG  possible  exit  *** possible  exit      possible  exit
             *  *  *  *    *  *  *  *  *       *  *  *  *  *         ***
  END HYDR-PARM1

  HYDR-PARM2
    # -  #    FTABNO       LEN     DELTH     STCOR        KS      DB50       ***
  <------><--------><--------><--------><--------><--------><--------><--------> ***
  END HYDR-PARM2
  HYDR-INIT
    RCHRES  Initial conditions for each HYDR section                    ***
    # -  # ***   VOL     Initial  value  of COLIND     Initial  value  of OUTDGT
          *** ac-ft     for each possible exit        for each possible exit
  <------><-------->     <---><---><---><---><---> *** <---><---><---><---><---><--->
  END HYDR-INIT
END RCHRES
```

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```
SPEC-ACTIONS
END SPEC-ACTIONS
FTABLES
END FTABLES

EXT SOURCES
<-Volume-> <Member> SsysSgap<--Mult-->Tran <-Target vols> <-Grp> <-Member->  ***
<Name>   # <Name> # tem strg<-factor->strg <Name>   #   #        <Name> # #  ***
WDM      2 PREC     ENGL    1.136          PERLND   1 999 EXTNL  PREC
WDM      2 PREC     ENGL    1.136          IMPLND   1 999 EXTNL  PREC
WDM      1 EVAP     ENGL    1              PERLND   1 999 EXTNL  PETINP
WDM      1 EVAP     ENGL    1              IMPLND   1 999 EXTNL  PETINP

END EXT SOURCES

EXT TARGETS
<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Volume-> <Member> Tsys Tgap Amd ***
<Name>   #        <Name> # #<-factor->strg <Name>   # <Name>    tem strg strg***
COPY   501 OUTPUT MEAN   1 1     12.1      WDM    501 FLOW     ENGL      REPL
END EXT TARGETS

MASS-LINK
<Volume>   <-Grp> <-Member-><--Mult-->     <Target>       <-Grp> <-Member->***
<Name>            <Name> # #<-factor->     <Name>                <Name> # #***
  MASS-LINK       12
PERLND     PWATER SURO       0.083333      COPY           INPUT  MEAN
  END MASS-LINK   12

  MASS-LINK       13
PERLND     PWATER IFWO       0.083333      COPY           INPUT  MEAN
  END MASS-LINK   13


END MASS-LINK

END RUN
```

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Mitigated UCI File

```
RUN

GLOBAL
  WWHM4 model simulation
  START       1964 10 01        END    2004 09 30
  RUN INTERP OUTPUT LEVEL    3    0
  RESUME     0 RUN     1                    UNIT SYSTEM     1
END GLOBAL

FILES
<File>  <Un#>   <-----------File Name------------------------------>***
<-ID->                                                              ***
WDM         26   Combo3_post.wdm
MESSU       25   MitCombo3_post.MES
            27   MitCombo3_post.L61
            28   MitCombo3_post.L62
            30   POCCombo3_post1.dat
END FILES

OPN SEQUENCE
    INGRP               INDELT 00:60
      PERLND      60
      PERLND      52
      IMPLND       4
      RCHRES       1
      COPY         1
      COPY       501
      DISPLY       1
    END INGRP
END OPN SEQUENCE
DISPLY
  DISPLY-INFO1
    # -  #<----------Title---------->***TRAN PIVL DIG1 FIL1  PYR DIG2 FIL2 YRND
    1        SSD Table  1                MAX                   1    2   30    9
  END DISPLY-INFO1
END DISPLY
COPY
  TIMESERIES
    # -  #  NPT  NMN ***
    1         1    1
  501         1    1
  END TIMESERIES
END COPY
GENER
  OPCODE
    #    # OPCD ***
  END OPCODE
  PARM
    #    #         K ***
  END PARM
END GENER
PERLND
  GEN-INFO
    <PLS ><-------Name------->NBLKS   Unit-systems   Printer ***
    # -  #                         User  t-series Engl Metr ***
                                      in  out           ***
   60     D,Urban,VSteep(>5%)     1    1    1    1   27    0
   52     D,Grass,VSteep(>5%)     1    1    1    1   27    0
  END GEN-INFO
  *** Section PWATER***

  ACTIVITY
    <PLS > ************ Active Sections ******************************
    # -  # ATMP SNOW PWAT  SED  PST  PWG PQAL MSTL PEST NITR PHOS TRAC ***
   60         0    0    1    0    0    0    0    0    0    0    0    0
   52         0    0    1    0    0    0    0    0    0    0    0    0
  END ACTIVITY
```

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```
  PRINT-INFO
    <PLS > ***************** Print-flags ***************************** PIVL  PYR
    # -  # ATMP SNOW PWAT  SED  PST  PWG PQAL MSTL PEST NITR PHOS TRAC  *********
   60         0    0    4    0    0    0    0    0    0    0    0    0    1    9
   52         0    0    4    0    0    0    0    0    0    0    0    0    1    9
  END PRINT-INFO

  PWAT-PARM1
    <PLS >  PWATER variable monthly parameter value flags  ***
    # -  # CSNO RTOP UZFG  VCS  VUZ  VNN VIFW VIRC  VLE INFC  HWT ***
   60         0    0    0    1    0    0    0    0    1    0    0
   52         0    0    0    1    0    0    0    0    1    0    0
  END PWAT-PARM1

  PWAT-PARM2
    <PLS >      PWATER input info: Part 2         ***
    # -  # ***FOREST      LZSN    INFILT      LSUR     SLSUR     KVARY     AGWRC
   60              0      4.25      0.01       350       0.1         3      0.92
   52              0       4.2      0.02       350       0.1         3      0.92
  END PWAT-PARM2

  PWAT-PARM3
    <PLS >      PWATER input info: Part 3         ***
    # -  # ***PETMAX    PETMIN    INFEXP    INFILD    DEEPFR    BASETP    AGWETP
   60             40        35         2         2         0         0      0.05
   52             40        35         2         2         0         0      0.05
  END PWAT-PARM3
  PWAT-PARM4
    <PLS >     PWATER input info: Part 4                                  ***
    # -  #     CEPSC      UZSN      NSUR     INTFW       IRC     LZETP ***
   60              0      0.25      0.25      0.35      0.35         0
   52              0      0.25      0.25       0.5       0.4         0
  END PWAT-PARM4
  MON-LZETPARM
    <PLS >      PWATER input info: Part 3         ***
    # -  #  JAN  FEB  MAR  APR  MAY  JUN  JUL  AUG  SEP  OCT  NOV  DEC  ***
   60       0.5  0.5  0.5  0.6 0.65 0.65 0.65 0.65 0.65 0.65 0.55  0.5
   52       0.4  0.4  0.4 0.45  0.5 0.55 0.55 0.55 0.55 0.55 0.45  0.4
  END MON-LZETPARM
  MON-INTERCEP
    <PLS >      PWATER input info: Part 3         ***
    # -  #  JAN  FEB  MAR  APR  MAY  JUN  JUL  AUG  SEP  OCT  NOV  DEC  ***
   60      0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11
   52      0.12 0.12 0.12 0.11  0.1  0.1  0.1  0.1  0.1  0.1 0.11 0.12
  END MON-INTERCEP

  PWAT-STATE1
    <PLS > *** Initial conditions at start of simulation
               ran from 1990 to end of 1992 (pat 1-11-95) RUN 21 ***
    # -  # ***  CEPS      SURS       UZS      IFWS       LZS      AGWS      GWVS
   60              0         0      0.15         0         4      0.05         0
   52              0         0      0.15         0         4      0.05         0
  END PWAT-STATE1

END PERLND

IMPLND
  GEN-INFO
    <PLS ><-------Name------->   Unit-systems   Printer ***
    # -  #                     User  t-series Engl Metr ***
                                  in  out           ***
    4     Imperv,VSteep(>5%)      1    1    1   27    0
  END GEN-INFO
  *** Section IWATER***

  ACTIVITY
    <PLS > ************* Active Sections ******************************
    # -  # ATMP SNOW IWAT  SLD  IWG IQAL   ***
    4         0    0    1    0    0    0
  END ACTIVITY
```

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```
  PRINT-INFO
    <ILS > ******** Print-flags ******** PIVL  PYR
    # -  # ATMP SNOW IWAT  SLD  IWG IQAL    *********
    4         0    0    4    0    0    0    1    9
  END PRINT-INFO

  IWAT-PARM1
    <PLS >  IWATER variable monthly parameter value flags  ***
    # -  # CSNO RTOP  VRS  VNN RTLI     ***
    4         0    0    0    0    0
  END IWAT-PARM1

  IWAT-PARM2
    <PLS >      IWATER input info: Part 2         ***
    # -  # ***  LSUR     SLSUR      NSUR     RETSC
    4            100       0.1      0.05      0.09
  END IWAT-PARM2

  IWAT-PARM3
    <PLS >      IWATER input info: Part 3         ***
    # -  # ***PETMAX    PETMIN
    4              0         0
  END IWAT-PARM3

  IWAT-STATE1
    <PLS > *** Initial conditions at start of simulation
    # -  # ***  RETS      SURS
    4              0         0
  END IWAT-STATE1

END IMPLND

SCHEMATIC
<-Source->                <--Area-->     <-Target->   MBLK   ***
<Name>   #                <-factor->     <Name>   #   Tbl#   ***
Combo#3***
PERLND  60                      30.06     RCHRES   1      2
PERLND  60                      30.06     RCHRES   1      3
PERLND  52                       2.09     RCHRES   1      2
PERLND  52                       2.09     RCHRES   1      3
IMPLND   4                      48.98     RCHRES   1      5

******Routing******
PERLND  60                      30.06     COPY     1     12
PERLND  52                       2.09     COPY     1     12
IMPLND   4                      48.98     COPY     1     15
PERLND  60                      30.06     COPY     1     13
PERLND  52                       2.09     COPY     1     13
RCHRES   1                          1     COPY   501     16
END SCHEMATIC

NETWORK
<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Target vols> <-Grp> <-Member->  ***
<Name>   #        <Name> # #<-factor->strg <Name>   #   #        <Name> # #  ***
COPY   501 OUTPUT MEAN   1 1   12.1        DISPLY   1     INPUT  TIMSER 1



<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Target vols> <-Grp> <-Member->  ***
<Name>   #        <Name> # #<-factor->strg <Name>   #   #        <Name> # #  ***
END NETWORK

RCHRES
  GEN-INFO
    RCHRES       Name        Nexits   Unit Systems   Printer                ***
    # -  #<------------------><---> User T-series  Engl Metr LKFG           ***
                                       in  out                              ***
    1     SSD Table  10005        1    1    1    1   28    0    1
  END GEN-INFO
```

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```
  *** Section RCHRES***

  ACTIVITY
    <PLS > ************ Active Sections ****************************
    # -  # HYFG ADFG CNFG HTFG SDFG GQFG OXFG NUFG PKFG PHFG ***
    1         1    0    0    0    0    0    0    0    0    0
  END ACTIVITY

  PRINT-INFO
    <PLS > ***************** Print-flags ****************** PIVL  PYR
    # -  # HYDR ADCA CONS HEAT  SED  GQL OXRX NUTR PLNK PHCB PIVL  PYR  *********
    1         4    0    0    0    0    0    0    0    0    0    1    9
  END PRINT-INFO

  HYDR-PARM1
    RCHRES  Flags for each HYDR Section                                    ***
    # -  #  VC A1 A2 A3  ODFVFG for each *** ODGTFG for each     FUNCT  for each
           FG FG FG FG  possible  exit  *** possible  exit      possible  exit
            *  *  *  *    *  *  *  *  *       *  *  *  *  *         ***
    1        0  1  0  0    4  0  0  0  0       0  0  0  0  0       2  2  2  2  2
  END HYDR-PARM1

  HYDR-PARM2
    # -  #    FTABNO       LEN      DELTH     STCOR        KS      DB50       ***
  <------><--------><--------><--------><--------><--------><--------><--------> ***
    1               1      0.01       0.0       0.0       0.5       0.0
  END HYDR-PARM2
  HYDR-INIT
    RCHRES  Initial conditions for each HYDR section                       ***
    # -  # ***   VOL     Initial  value  of COLIND     Initial  value  of OUTDGT
         *** ac-ft     for each possible exit        for each possible exit
  <------><-------->     <---><---><---><---><---> *** <---><---><---><---><--->
    1         0           4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
  END HYDR-INIT
END RCHRES

SPEC-ACTIONS
END SPEC-ACTIONS
FTABLES
  FTABLE      1
   53    4
     Depth      Area    Volume  Outflow1 Velocity  Travel Time***
      (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
  0.000000  0.000000  0.000000  0.000000
  0.100000  1.640000  0.164000  0.052700
  0.250000  1.672800  0.414600  0.208100
  0.500000  1.705000  0.837100  0.588700
  0.750000  1.737200  1.267500  0.851200
  1.000000  1.769300  1.705800  1.042500
  1.250000  1.801500  2.152000  1.203700
  1.500000  1.833600  2.606100  1.345800
  1.750000  1.865600  3.068200  1.530100
  2.000000  1.897700  3.538100  2.413200
  2.250000  1.929800  4.016000  3.847800
  2.500000  1.961800  4.501700  6.946100
  2.750000  1.993800  4.995400  11.24550
  3.000000  2.025800  5.497000  16.41900
  3.250000  2.057700  6.006500  22.32520
  3.500000  2.089600  6.523900  28.87720
  3.750000  2.121500  7.049200  36.01400
  4.000000  2.153400  7.582400  43.68960
  4.250000  2.185300  8.123500  51.86750
  4.500000  2.217100  8.672600  60.51780
  4.750000  2.249000  9.229500  72.55690
  5.000000  2.280800  9.794400  87.07250
  5.250000  2.312500  10.36710  103.8994
  5.500000  2.344300  10.94780  122.5947
  5.750000  2.376000  11.53640  142.9125
  6.000000  2.407700  12.13290  164.6907
  6.250000  2.439400  12.73730  187.8116
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  6.500000  2.471100  13.34960  212.1847
  6.750000  2.502700  13.96980  237.7370
  7.000000  2.534300  14.59800  264.4081
  7.250000  2.565900  15.23400  292.1467
  7.500000  2.597500  15.87800  320.9086
  7.750000  2.629000  16.52980  350.6549
  8.000000  2.660600  17.18960  381.3511
  8.250000  2.692100  17.85730  412.9666
  8.500000  2.723600  18.53290  445.4733
  8.750000  2.755000  19.21640  478.8460
  9.000000  2.786500  19.90780  513.0615
  9.250000  2.817900  20.60710  548.0984
  9.500000  2.849300  21.31430  583.9369
  9.750000  2.880600  22.02950  620.5588
  10.00000  2.912000  22.75250  657.9470
  10.25000  2.943300  23.48350  696.0854
  10.50000  2.974600  24.22230  734.9591
  10.75000  3.005900  24.96910  774.5541
  11.00000  3.037200  25.72380  814.8570
  11.25000  3.068400  26.48640  855.8552
  11.50000  3.099600  27.25690  897.5369
  11.75000  3.130800  28.03530  939.8907
  12.00000  3.162000  28.82160  982.9059
  12.25000  3.193100  29.61580  1026.572
  12.50000  3.224300  30.41800  1070.880
  12.75000  3.255400  31.22800  1115.819
  END FTABLE  1
END FTABLES

EXT SOURCES
<-Volume-> <Member> SsysSgap<--Mult-->Tran <-Target vols> <-Grp> <-Member->  ***
<Name>   # <Name> # tem strg<-factor->strg <Name>   #   #        <Name> # #  ***
WDM      2 PREC     ENGL    1.136          PERLND   1 999 EXTNL  PREC
WDM      2 PREC     ENGL    1.136          IMPLND   1 999 EXTNL  PREC
WDM      1 EVAP     ENGL    1              PERLND   1 999 EXTNL  PETINP
WDM      1 EVAP     ENGL    1              IMPLND   1 999 EXTNL  PETINP
WDM     22 IRRG     ENGL    0.7       SAME PERLND  60     EXTNL  SURLI
WDM      2 PREC     ENGL    1.136          RCHRES   1     EXTNL  PREC
WDM      1 EVAP     ENGL    1              RCHRES   1     EXTNL  POTEV

END EXT SOURCES

EXT TARGETS
<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Volume-> <Member> Tsys Tgap Amd ***
<Name>   #        <Name> # #<-factor->strg <Name>   # <Name>    tem strg strg***
RCHRES   1 HYDR   RO     1 1        1      WDM   1000 FLOW     ENGL      REPL
RCHRES   1 HYDR   STAGE  1 1        1      WDM   1001 STAG     ENGL      REPL
COPY     1 OUTPUT MEAN   1 1     12.1      WDM    701 FLOW     ENGL      REPL
COPY   501 OUTPUT MEAN   1 1     12.1      WDM    801 FLOW     ENGL      REPL
END EXT TARGETS

MASS-LINK
<Volume>   <-Grp> <-Member-><--Mult-->     <Target>       <-Grp> <-Member->***
<Name>            <Name> # #<-factor->     <Name>                <Name> # #***
  MASS-LINK        2
PERLND     PWATER SURO       0.083333      RCHRES         INFLOW IVOL
  END MASS-LINK    2

  MASS-LINK        3
PERLND     PWATER IFWO       0.083333      RCHRES         INFLOW IVOL
  END MASS-LINK    3

  MASS-LINK        5
IMPLND     IWATER SURO       0.083333      RCHRES         INFLOW IVOL
  END MASS-LINK    5

  MASS-LINK       12
PERLND     PWATER SURO       0.083333      COPY           INPUT  MEAN
  END MASS-LINK   12
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```
  MASS-LINK       13
PERLND     PWATER IFWO       0.083333      COPY           INPUT  MEAN
  END MASS-LINK   13

  MASS-LINK       15
IMPLND     IWATER SURO       0.083333      COPY           INPUT  MEAN
  END MASS-LINK   15

  MASS-LINK       16
RCHRES     ROFLOW                          COPY           INPUT  MEAN
  END MASS-LINK   16


END MASS-LINK

END RUN
```

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PROJECT REPORT

General Model Information

Project Name: Combo4_SSD
Site Name:
Site Address:
City:
Report Date: 11/27/2013
Gage: ORANGEVA
Data Start: 1964/10/01
Data End: 2004/09/30
Timestep: Hourly
Precip Scale: 1.14
Version: 2013/08/23

POC Thresholds

Low Flow Threshold for POC1:	25 Percent of the 2 Year
High Flow Threshold for POC1:	10 Year

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Landuse Basin Data

Pre-Project Land Use

Basin 1

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
D,Grass,VSteep(>5%)	29.64
Pervious Total	29.64

Impervious Land Use	Acres
Impervious Total	0
Basin Total	29.64

Element Flows To:

Surface	Interflow	Groundwater

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Mitigated Land Use

Basin 1

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
D,Urban,VSteep(>5%)	14.22
D,Grass,VSteep(>5%)	2.15
Pervious Total	16.37

Impervious Land Use	Acres
Imperv,VSteep(>5%)	8.57
Impervious Total	8.57
Basin Total	24.94

Element Flows To:

Surface	Interflow	Groundwater
SSD Table 1	SSD Table 1	

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Mitigated Routing

SSD Table 1

Depth: 24.25 ft.
Element Flows To:
Outlet 1 Outlet 2

SSD Table Hydraulic Table

Stage (ft)	Area (ac)	Volume (ac-ft)	Manual	NotUsed	NotUsed	NotUsed	NotUsed
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.010	0.001	0.001	0.000	0.000	0.000	0.000	0.000
0.250	0.005	0.003	0.027	0.000	0.000	0.000	0.000
0.500	0.010	0.003	0.043	0.000	0.000	0.000	0.000
0.750	0.015	0.005	0.055	0.000	0.000	0.000	0.000
1.000	0.021	0.008	0.064	0.000	0.000	0.000	0.000
1.250	0.028	0.013	0.072	0.000	0.000	0.000	0.000
1.500	0.036	0.020	0.080	0.000	0.000	0.000	0.000
1.750	0.044	0.029	0.086	0.000	0.000	0.000	0.000
2.000	0.053	0.040	0.093	0.000	0.000	0.000	0.000
2.250	0.063	0.053	0.098	0.000	0.000	0.000	0.000
2.500	0.073	0.069	0.104	0.000	0.000	0.000	0.000
2.750	0.084	0.088	0.109	0.000	0.000	0.000	0.000
3.000	0.095	0.109	0.114	0.000	0.000	0.000	0.000
3.250	0.108	0.134	0.119	0.000	0.000	0.000	0.000
3.500	0.121	0.162	0.124	0.000	0.000	0.000	0.000
3.750	0.134	0.193	0.128	0.000	0.000	0.000	0.000
4.000	0.149	0.228	0.132	0.000	0.000	0.000	0.000
4.250	0.164	0.266	0.137	0.000	0.000	0.000	0.000
4.500	0.180	0.309	0.141	0.000	0.000	0.000	0.000
4.750	0.196	0.355	0.144	0.000	0.000	0.000	0.000
5.000	0.213	0.406	0.148	0.000	0.000	0.000	0.000
5.250	0.231	0.461	0.152	0.000	0.000	0.000	0.000
5.500	0.249	0.521	0.156	0.000	0.000	0.000	0.000
5.750	0.268	0.586	0.888	0.000	0.000	0.000	0.000
6.000	0.288	0.655	4.041	0.000	0.000	0.000	0.000
6.250	0.309	0.730	10.17	0.000	0.000	0.000	0.000
6.500	0.330	0.810	17.12	0.000	0.000	0.000	0.000
6.750	0.352	0.895	21.46	0.000	0.000	0.000	0.000
7.000	0.374	0.987	28.61	0.000	0.000	0.000	0.000
7.250	0.398	1.084	40.22	0.000	0.000	0.000	0.000
7.500	0.421	1.186	54.37	0.000	0.000	0.000	0.000
7.750	0.446	1.296	70.54	0.000	0.000	0.000	0.000
8.000	0.471	1.411	88.45	0.000	0.000	0.000	0.000
8.250	0.497	1.533	107.9	0.000	0.000	0.000	0.000
8.500	0.524	1.662	128.8	0.000	0.000	0.000	0.000
8.750	0.551	1.797	151.1	0.000	0.000	0.000	0.000
9.000	0.579	1.939	174.6	0.000	0.000	0.000	0.000
9.250	0.608	2.089	199.3	0.000	0.000	0.000	0.000
9.500	0.637	2.246	225.1	0.000	0.000	0.000	0.000
9.750	0.667	2.411	252.0	0.000	0.000	0.000	0.000
10.000	0.698	2.583	279.9	0.000	0.000	0.000	0.000
10.25	0.729	2.763	308.8	0.000	0.000	0.000	0.000
10.50	0.761	2.952	338.7	0.000	0.000	0.000	0.000
10.75	0.794	3.148	369.5	0.000	0.000	0.000	0.000

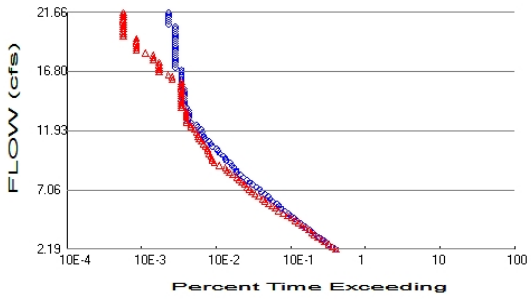
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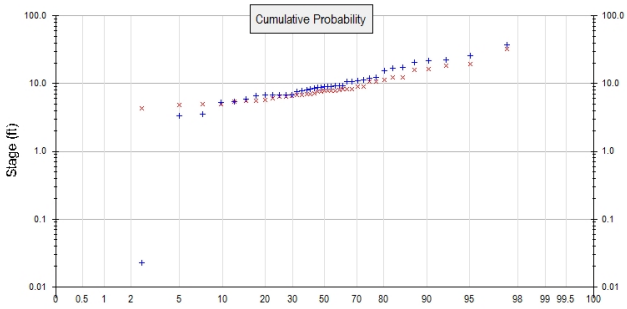
11.00	0.827	3.353	401.2	0.000	0.000	0.000	0.000
11.25	0.862	3.566	433.8	0.000	0.000	0.000	0.000
11.50	0.896	3.789	467.2	0.000	0.000	0.000	0.000
11.75	0.932	4.020	501.5	0.000	0.000	0.000	0.000
12.00	0.968	4.260	536.6	0.000	0.000	0.000	0.000
12.25	1.005	4.510	572.5	0.000	0.000	0.000	0.000
12.50	1.042	4.768	609.1	0.000	0.000	0.000	0.000
12.75	1.081	5.037	646.5	0.000	0.000	0.000	0.000
13.00	1.119	5.315	684.7	0.000	0.000	0.000	0.000
13.25	1.159	5.604	723.6	0.000	0.000	0.000	0.000
13.50	1.199	5.902	763.2	0.000	0.000	0.000	0.000
13.75	1.240	6.211	803.5	0.000	0.000	0.000	0.000
14.00	1.282	6.530	844.5	0.000	0.000	0.000	0.000
14.25	1.324	6.860	886.2	0.000	0.000	0.000	0.000
14.50	1.367	7.201	928.6	0.000	0.000	0.000	0.000
14.75	1.411	7.552	971.6	0.000	0.000	0.000	0.000
15.00	1.455	7.915	1015.247	0.000	0.000	0.000	0.000
15.25	1.500	8.289	1059.55	0.000	0.000	0.000	0.000
15.50	1.546	8.675	1104.482	0.000	0.000	0.000	0.000
15.75	1.592	9.072	1150.036	0.000	0.000	0.000	0.000
16.00	1.639	9.481	1196.202	0.000	0.000	0.000	0.000
16.25	1.687	9.903	1242.974	0.000	0.000	0.000	0.000
16.50	1.735	10.34	1290.342	0.000	0.000	0.000	0.000
16.75	1.784	10.78	1338.3	0.000	0.000	0.000	0.000
17.00	1.834	11.24	1386.84	0.000	0.000	0.000	0.000
17.25	1.884	11.71	1435.956	0.000	0.000	0.000	0.000
17.50	1.936	12.20	1485.64	0.000	0.000	0.000	0.000
17.75	1.987	12.69	1535.887	0.000	0.000	0.000	0.000
18.00	2.040	13.20	1586.69	0.000	0.000	0.000	0.000
18.25	2.093	13.73	1638.043	0.000	0.000	0.000	0.000
18.50	2.147	14.26	1689.939	0.000	0.000	0.000	0.000
18.75	2.201	14.81	1742.375	0.000	0.000	0.000	0.000
19.00	2.257	15.38	1795.343	0.000	0.000	0.000	0.000
19.25	2.313	15.96	1848.839	0.000	0.000	0.000	0.000
19.50	2.369	16.55	1902.858	0.000	0.000	0.000	0.000
19.75	2.426	17.16	1957.394	0.000	0.000	0.000	0.000
20.00	2.484	17.78	2012.443	0.000	0.000	0.000	0.000
20.25	2.543	18.42	2067.999	0.000	0.000	0.000	0.000
20.50	2.602	19.07	2124.059	0.000	0.000	0.000	0.000
20.75	2.662	19.74	2180.618	0.000	0.000	0.000	0.000
21.00	2.723	20.42	2237.67	0.000	0.000	0.000	0.000
21.25	2.784	21.12	2295.214	0.000	0.000	0.000	0.000
21.50	2.846	21.83	2353.243	0.000	0.000	0.000	0.000
21.75	2.909	22.56	2411.754	0.000	0.000	0.000	0.000
22.00	2.972	23.31	2470.743	0.000	0.000	0.000	0.000
22.25	3.036	24.07	2530.206	0.000	0.000	0.000	0.000
22.50	3.101	24.85	2590.139	0.000	0.000	0.000	0.000
22.75	3.167	25.64	2650.54	0.000	0.000	0.000	0.000
23.00	3.233	26.45	2711.403	0.000	0.000	0.000	0.000
23.25	3.299	27.28	2772.726	0.000	0.000	0.000	0.000
23.50	3.367	28.13	2834.505	0.000	0.000	0.000	0.000
23.75	3.435	28.99	2896.738	0.000	0.000	0.000	0.000
24.00	3.504	29.87	2959.419	0.000	0.000	0.000	0.000

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Analysis Results

POC 1





\+ Pre-Project x Mitigated

Pre-Project Landuse Totals for POC #1
Total Pervious Area: 29.64
Total Impervious Area: 0

Mitigated Landuse Totals for POC #1
Total Pervious Area: 16.37
Total Impervious Area: 8.57

Flow Frequency Method: Log Pearson Type III 17B

Flow Frequency Return Periods for Pre-Project. POC #1

Return Period	**Flow(cfs)**
2 year	8.752834
5 year	14.770624
10 year	21.66408
25 year	28.349873

Flow Frequency Return Periods for Mitigated. POC #1

Return Period	**Flow(cfs)**
2 year	7.695436
5 year	11.194095
10 year	16.445476
25 year	22.424905

Annual Peaks

Annual Peaks for Pre-Project and Mitigated. POC #1

Year	**Pre-Project**	**Mitigated**
1965	9.161	7.076
1966	3.552	4.295
1967	9.360	7.692
1968	5.889	5.489
1969	8.964	7.699
1970	8.266	6.877
1971	9.234	8.938
1972	5.296	5.701
1973	17.125	12.180
1974	12.437	10.844
1975	6.801	5.515
1976	0.023	5.027
1977	0.008	1.155
1978	22.494	18.427

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1979	6.813	5.618
1980	7.516	7.027
1981	8.920	7.891
1982	12.057	10.562
1983	16.944	11.293
1984	9.045	7.908
1985	8.467	7.722
1986	25.970	19.535
1987	6.797	6.368
1988	7.774	6.718
1989	10.886	8.400
1990	6.760	6.446
1991	7.989	6.618
1992	10.565	9.152
1993	8.785	8.337
1994	3.345	4.999
1995	36.812	32.699
1996	21.816	16.510
1997	20.572	15.985
1998	15.427	12.498
1999	5.445	4.778
2000	10.557	8.309
2001	6.721	7.148
2002	6.698	6.142
2003	8.722	8.044
2004	11.212	7.842

Ranked Annual Peaks

Ranked Annual Peaks for Pre-Project and Mitigated. POC #1

Rank	Pre-Project	Mitigated
1	36.8120	32.6987
2	25.9699	19.5354
3	22.4937	18.4270
4	21.8158	16.5095
5	20.5717	15.9845
6	17.1245	12.4977
7	16.9443	12.1796
8	15.4269	11.2927
9	12.4372	10.8435
10	12.0567	10.5620
11	11.2118	9.1524
12	10.8862	8.9381
13	10.5648	8.4000
14	10.5572	8.3371
15	9.3602	8.3095
16	9.2342	8.0441
17	9.1610	7.9078
18	9.0450	7.8911
19	8.9641	7.8419
20	8.9201	7.7217
21	8.7852	7.6990
22	8.7220	7.6921
23	8.4666	7.1478
24	8.2661	7.0758
25	7.9894	7.0274
26	7.7736	6.8769
27	7.5164	6.7180
28	6.8128	6.6176

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29	6.8011	6.4459
30	6.7968	6.3685
31	6.7604	6.1416
32	6.7205	5.7013
33	6.6979	5.6185
34	5.8889	5.5149
35	5.4454	5.4886
36	5.2956	5.0274
37	3.5516	4.9986
38	3.3450	4.7779
39	0.0227	4.2947
40	0.0077	1.1548

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Duration Flows

The Facility PASSED

Flow(cfs)	Predev	Mit	Percentage	Pass/Fail
2.1882	1405	1408	100	Pass
2.3849	1274	1274	100	Pass
2.5817	1133	1132	99	Pass
2.7784	1028	1005	97	Pass
2.9751	932	912	97	Pass
3.1718	840	817	97	Pass
3.3686	751	728	96	Pass
3.5653	690	665	96	Pass
3.7620	629	608	96	Pass
3.9587	563	550	97	Pass
4.1555	519	496	95	Pass
4.3522	481	452	93	Pass
4.5489	427	406	95	Pass
4.7456	386	358	92	Pass
4.9424	350	319	91	Pass
5.1391	323	279	86	Pass
5.3358	291	240	82	Pass
5.5326	261	216	82	Pass
5.7293	243	197	81	Pass
5.9260	228	178	78	Pass
6.1227	201	158	78	Pass
6.3195	189	150	79	Pass
6.5162	173	131	75	Pass
6.7129	157	116	73	Pass
6.9096	142	105	73	Pass
7.1064	135	98	72	Pass
7.3031	122	90	73	Pass
7.4998	108	84	77	Pass
7.6965	99	77	77	Pass
7.8933	91	71	78	Pass
8.0900	81	66	81	Pass
8.2867	74	59	79	Pass
8.4834	66	53	80	Pass
8.6802	65	49	75	Pass
8.8769	61	47	77	Pass
9.0736	57	39	68	Pass
9.2703	54	33	61	Pass
9.4671	48	31	64	Pass
9.6638	46	31	67	Pass
9.8605	44	30	68	Pass
10.0572	40	28	70	Pass
10.2540	37	27	72	Pass
10.4507	36	27	75	Pass
10.6474	31	25	80	Pass
10.8442	30	24	80	Pass
11.0409	28	22	78	Pass
11.2376	25	21	84	Pass
11.4343	24	20	83	Pass
11.6311	23	20	86	Pass
11.8278	23	19	82	Pass
12.0245	22	18	81	Pass
12.2212	20	16	80	Pass
12.4180	19	16	84	Pass

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12.6147	16	14	87	Pass
12.8114	15	14	93	Pass
13.0081	15	14	93	Pass
13.2049	15	14	93	Pass
13.4016	15	14	93	Pass
13.5983	15	14	93	Pass
13.7950	14	12	85	Pass
13.9918	13	12	92	Pass
14.1885	13	12	92	Pass
14.3852	13	12	92	Pass
14.5819	13	12	92	Pass
14.7787	13	12	92	Pass
14.9754	13	12	92	Pass
15.1721	13	12	92	Pass
15.3688	13	12	92	Pass
15.5656	12	12	100	Pass
15.7623	12	12	100	Pass
15.9590	12	12	100	Pass
16.1558	12	9	75	Pass
16.3525	12	9	75	Pass
16.5492	12	8	66	Pass
16.7459	12	6	50	Pass
16.9427	12	6	50	Pass
17.1394	10	6	60	Pass
17.3361	10	6	60	Pass
17.5328	10	6	60	Pass
17.7296	10	5	50	Pass
17.9263	10	5	50	Pass
18.1230	10	5	50	Pass
18.3197	10	4	40	Pass
18.5165	10	3	30	Pass
18.7132	10	3	30	Pass
18.9099	10	3	30	Pass
19.1066	10	3	30	Pass
19.3034	10	3	30	Pass
19.5001	10	3	30	Pass
19.6968	10	2	20	Pass
19.8935	10	2	20	Pass
20.0903	10	2	20	Pass
20.2870	10	2	20	Pass
20.4837	10	2	20	Pass
20.6805	8	2	25	Pass
20.8772	8	2	25	Pass
21.0739	8	2	25	Pass
21.2706	8	2	25	Pass
21.4674	8	2	25	Pass
21.6641	8	2	25	Pass

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Model Default Modifications

Total of 0 changes have been made.

PERLND Changes

No PERLND changes have been made.

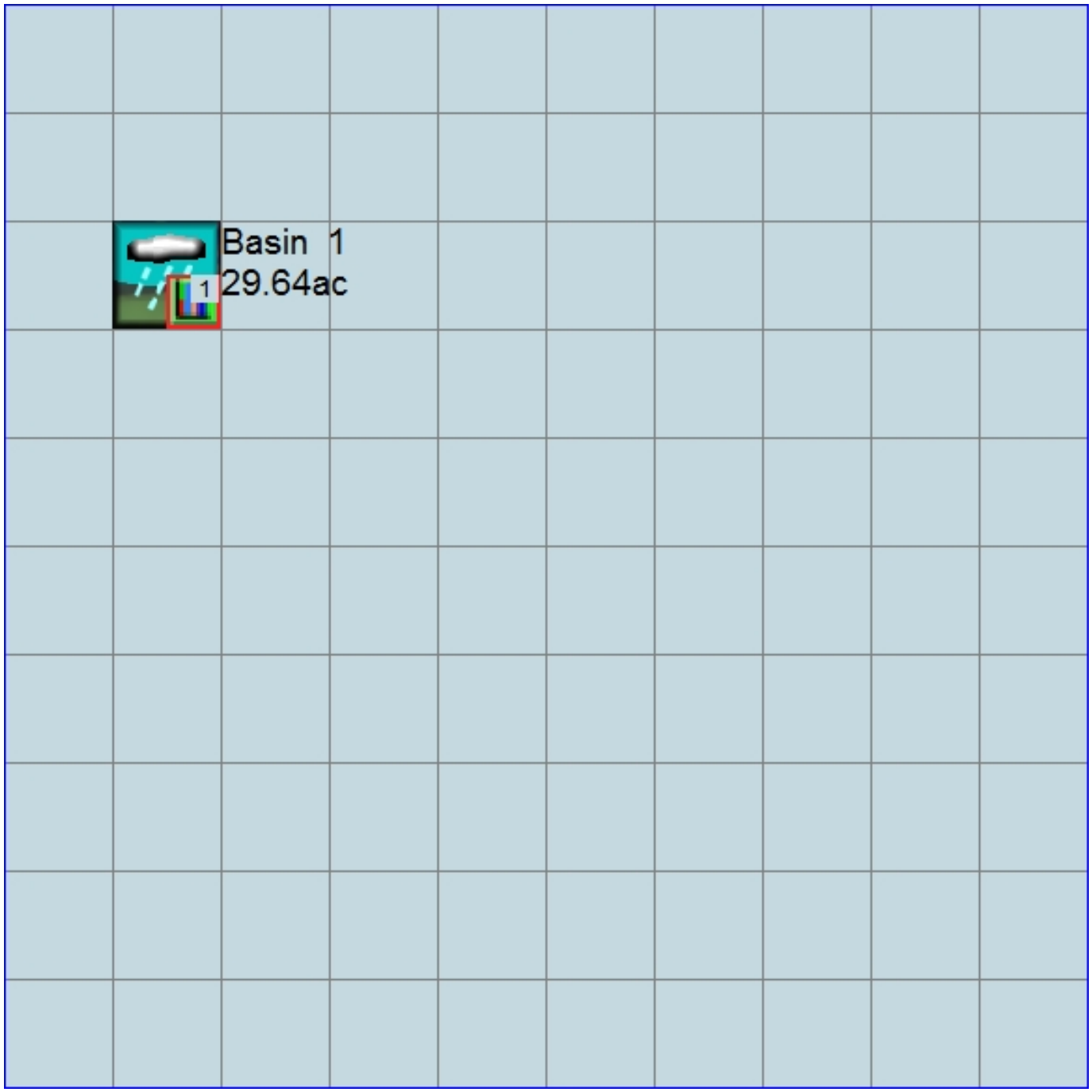
IMPLND Changes

No IMPLND changes have been made.

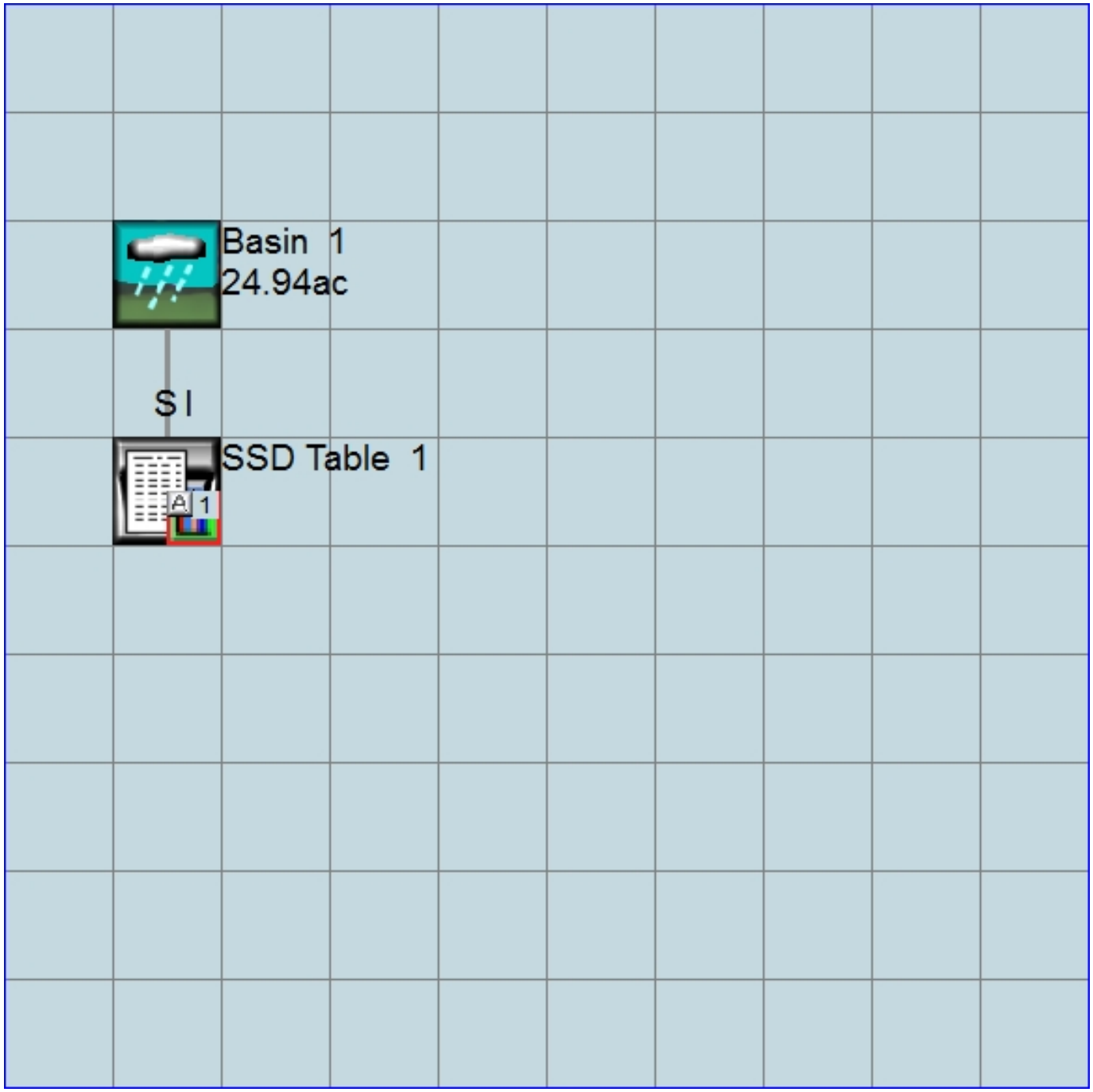
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Appendix

Pre-Project Schematic



Mitigated Schematic



Pre-Project UCI File

```
RUN

GLOBAL
  WWHM4 model simulation
  START       1964 10 01        END    2004 09 30
  RUN INTERP OUTPUT LEVEL    3    0
  RESUME     0 RUN     1                    UNIT SYSTEM     1
END GLOBAL

FILES
<File>  <Un#>   <-----------File Name------------------------------>***
<-ID->                                                              ***
WDM         26   Combo4_SSD.wdm
MESSU       25   PreCombo4_SSD.MES
            27   PreCombo4_SSD.L61
            28   PreCombo4_SSD.L62
            30   POCCombo4_SSD1.dat
END FILES

OPN SEQUENCE
    INGRP               INDELT 00:60
      PERLND      52
      COPY       501
      DISPLY       1
    END INGRP
END OPN SEQUENCE
DISPLY
  DISPLY-INFO1
    # -  #<----------Title---------->***TRAN PIVL DIG1 FIL1  PYR DIG2 FIL2 YRND
    1        Basin  1                   MAX                    1    2   30    9
  END DISPLY-INFO1
END DISPLY
COPY
  TIMESERIES
    # -  #  NPT  NMN ***
    1         1    1
  501         1    1
  END TIMESERIES
END COPY
GENER
  OPCODE
    #    # OPCD ***
  END OPCODE
  PARM
    #    #         K ***
  END PARM
END GENER
PERLND
  GEN-INFO
    <PLS ><-------Name------->NBLKS   Unit-systems   Printer ***
    # -  #                         User  t-series Engl Metr ***
                                      in  out           ***
   52     D,Grass,VSteep(>5%)     1    1    1    1   27    0
  END GEN-INFO
  *** Section PWATER***

  ACTIVITY
    <PLS > ************ Active Sections ******************************
    # -  # ATMP SNOW PWAT  SED  PST  PWG PQAL MSTL PEST NITR PHOS TRAC ***
   52         0    0    1    0    0    0    0    0    0    0    0    0
  END ACTIVITY

  PRINT-INFO
    <PLS > ***************** Print-flags ***************************** PIVL  PYR
    # -  # ATMP SNOW PWAT  SED  PST  PWG PQAL MSTL PEST NITR PHOS TRAC  *********
   52         0    0    4    0    0    0    0    0    0    0    0    0    1    9
  END PRINT-INFO
```

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```
  PWAT-PARM1
    <PLS >  PWATER variable monthly parameter value flags  ***
    # -  # CSNO RTOP UZFG  VCS  VUZ  VNN VIFW VIRC  VLE INFC  HWT ***
   52         0    0    0    1    0    0    0    0    1    0    0
  END PWAT-PARM1

  PWAT-PARM2
    <PLS >      PWATER input info: Part 2         ***
    # -  # ***FOREST      LZSN    INFILT      LSUR     SLSUR     KVARY     AGWRC
   52             0       4.2      0.02       350       0.1         3      0.92
  END PWAT-PARM2

  PWAT-PARM3
    <PLS >      PWATER input info: Part 3         ***
    # -  # ***PETMAX    PETMIN    INFEXP    INFILD    DEEPFR    BASETP    AGWETP
   52            40        35         2         2         0         0      0.05
  END PWAT-PARM3
  PWAT-PARM4
    <PLS >     PWATER input info: Part 4                              ***
    # -  #     CEPSC      UZSN      NSUR     INTFW       IRC     LZETP ***
   52             0      0.25      0.25       0.5       0.4         0
  END PWAT-PARM4
  MON-LZETPARM
    <PLS >      PWATER input info: Part 3         ***
    # -  #  JAN  FEB  MAR  APR  MAY  JUN  JUL  AUG  SEP  OCT  NOV  DEC  ***
   52       0.4  0.4  0.4 0.45  0.5 0.55 0.55 0.55 0.55 0.55 0.45  0.4
  END MON-LZETPARM
  MON-INTERCEP
    <PLS >      PWATER input info: Part 3         ***
    # -  #  JAN  FEB  MAR  APR  MAY  JUN  JUL  AUG  SEP  OCT  NOV  DEC  ***
   52      0.12 0.12 0.12 0.11  0.1  0.1  0.1  0.1  0.1  0.1 0.11 0.12
  END MON-INTERCEP

  PWAT-STATE1
    <PLS > *** Initial conditions at start of simulation
               ran from 1990 to end of 1992 (pat 1-11-95) RUN 21 ***
    # -  # ***  CEPS      SURS       UZS      IFWS       LZS      AGWS      GWVS
   52             0         0      0.15         0         4      0.05         0
  END PWAT-STATE1

END PERLND

IMPLND
  GEN-INFO
    <PLS ><-------Name------->   Unit-systems   Printer ***
    # -  #                     User  t-series Engl Metr ***
                                     in  out           ***
  END GEN-INFO
  *** Section IWATER***

  ACTIVITY
    <PLS > ************ Active Sections ******************************
    # -  # ATMP SNOW IWAT  SLD  IWG IQAL   ***
  END ACTIVITY

  PRINT-INFO
    <ILS > ******** Print-flags ******** PIVL  PYR
    # -  # ATMP SNOW IWAT  SLD  IWG IQAL    *********
  END PRINT-INFO

  IWAT-PARM1
    <PLS >  IWATER variable monthly parameter value flags  ***
    # -  # CSNO RTOP  VRS  VNN RTLI     ***
  END IWAT-PARM1

  IWAT-PARM2
    <PLS >      IWATER input info: Part 2         ***
    # -  # ***  LSUR     SLSUR      NSUR     RETSC
  END IWAT-PARM2
```

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```
  IWAT-PARM3
    <PLS >      IWATER input info: Part 3         ***
    # -  # ***PETMAX    PETMIN
  END IWAT-PARM3

  IWAT-STATE1
    <PLS > *** Initial conditions at start of simulation
    # -  # ***  RETS      SURS
  END IWAT-STATE1

END IMPLND

SCHEMATIC
<-Source->                  <--Area-->     <-Target->   MBLK   ***
<Name>   #                  <-factor->     <Name>   #   Tbl#   ***
Basin  1***
PERLND  52                      29.64      COPY   501     12
PERLND  52                      29.64      COPY   501     13

******Routing******
END SCHEMATIC

NETWORK
<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Target vols> <-Grp> <-Member->  ***
<Name>   #        <Name> # #<-factor->strg <Name>   #   #        <Name> # #  ***
COPY   501 OUTPUT MEAN   1 1   12.1        DISPLY   1     INPUT  TIMSER 1



<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Target vols> <-Grp> <-Member->  ***
<Name>   #        <Name> # #<-factor->strg <Name>   #   #        <Name> # #  ***
END NETWORK

RCHRES
  GEN-INFO
    RCHRES       Name        Nexits   Unit Systems   Printer                 ***
    # -  #<------------------><---> User T-series  Engl Metr LKFG            ***
                                          in  out                            ***
  END GEN-INFO
  *** Section RCHRES***

  ACTIVITY
    <PLS > ************* Active Sections *****************************
    # -  # HYFG ADFG CNFG HTFG SDFG GQFG OXFG NUFG PKFG PHFG ***
  END ACTIVITY

  PRINT-INFO
    <PLS > ***************** Print-flags ******************* PIVL  PYR
    # -  # HYDR ADCA CONS HEAT  SED  GQL OXRX NUTR PLNK PHCB PIVL  PYR  *********
  END PRINT-INFO

  HYDR-PARM1
    RCHRES  Flags for each HYDR Section                                      ***
    # -  #  VC A1 A2 A3  ODFVFG for each *** ODGTFG for each     FUNCT  for each
            FG FG FG FG  possible  exit  *** possible  exit      possible  exit
             *  *  *  *     *  *  *  *  *        *  *  *  *  *         ***
  END HYDR-PARM1

  HYDR-PARM2
    # -  #    FTABNO       LEN     DELTH     STCOR        KS      DB50       ***
  <------><--------><--------><--------><--------><--------><-------->       ***
  END HYDR-PARM2
  HYDR-INIT
    RCHRES  Initial conditions for each HYDR section                         ***
    # -  # ***   VOL     Initial  value  of COLIND     Initial  value  of OUTDGT
          *** ac-ft     for each possible exit       for each possible exit
  <------><-------->     <---><---><---><---><---> *** <---><---><---><---><--->
  END HYDR-INIT
END RCHRES
```

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```
SPEC-ACTIONS
END SPEC-ACTIONS
FTABLES
END FTABLES

EXT SOURCES
<-Volume-> <Member> SsysSgap<--Mult-->Tran <-Target vols> <-Grp> <-Member->  ***
<Name>   # <Name> # tem strg<-factor->strg <Name>   #   #        <Name> # #  ***
WDM      2 PREC     ENGL    1.136          PERLND   1 999 EXTNL  PREC
WDM      2 PREC     ENGL    1.136          IMPLND   1 999 EXTNL  PREC
WDM      1 EVAP     ENGL    1              PERLND   1 999 EXTNL  PETINP
WDM      1 EVAP     ENGL    1              IMPLND   1 999 EXTNL  PETINP

END EXT SOURCES

EXT TARGETS
<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Volume-> <Member> Tsys Tgap Amd ***
<Name>   #        <Name> # #<-factor->strg <Name>   # <Name>    tem strg strg***
COPY   501 OUTPUT MEAN   1 1     12.1      WDM    501 FLOW     ENGL      REPL
END EXT TARGETS

MASS-LINK
<Volume>   <-Grp> <-Member-><--Mult-->     <Target>       <-Grp> <-Member->***
<Name>            <Name> # #<-factor->     <Name>                <Name> # #***
  MASS-LINK       12
PERLND     PWATER SURO       0.083333      COPY           INPUT  MEAN
  END MASS-LINK   12

  MASS-LINK       13
PERLND     PWATER IFWO       0.083333      COPY           INPUT  MEAN
  END MASS-LINK   13


END MASS-LINK

END RUN
```

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Mitigated UCI File

```
RUN

GLOBAL
  WWHM4 model simulation
  START       1964 10 01        END    2004 09 30
  RUN INTERP OUTPUT LEVEL    3    0
  RESUME     0 RUN     1                    UNIT SYSTEM     1
END GLOBAL

FILES
<File>  <Un#>   <-----------File Name------------------------------>***
<-ID->                                                              ***
WDM         26   Combo4_SSD.wdm
MESSU       25   MitCombo4_SSD.MES
            27   MitCombo4_SSD.L61
            28   MitCombo4_SSD.L62
            30   POCCombo4_SSD1.dat
END FILES

OPN SEQUENCE
    INGRP               INDELT 00:60
      PERLND      60
      PERLND      52
      IMPLND       4
      RCHRES       1
      COPY         1
      COPY       501
      DISPLY       1
    END INGRP
END OPN SEQUENCE
DISPLY
  DISPLY-INFO1
    # -  #<----------Title---------->***TRAN PIVL DIG1 FIL1  PYR DIG2 FIL2 YRND
    1        SSD Table  1                MAX                   1    2   30    9
  END DISPLY-INFO1
END DISPLY
COPY
  TIMESERIES
    # -  #  NPT  NMN ***
    1         1    1
  501         1    1
  END TIMESERIES
END COPY
GENER
  OPCODE
    #    # OPCD ***
  END OPCODE
  PARM
    #    #         K ***
  END PARM
END GENER
PERLND
  GEN-INFO
    <PLS ><-------Name------->NBLKS   Unit-systems   Printer ***
    # -  #                         User  t-series Engl Metr ***
                                          in  out           ***
   60     D,Urban,VSteep(>5%)     1    1    1    1   27    0
   52     D,Grass,VSteep(>5%)     1    1    1    1   27    0
  END GEN-INFO
  *** Section PWATER***

  ACTIVITY
    <PLS > ************ Active Sections ******************************
    # -  # ATMP SNOW PWAT  SED  PST  PWG PQAL MSTL PEST NITR PHOS TRAC ***
   60         0    0    1    0    0    0    0    0    0    0    0    0
   52         0    0    1    0    0    0    0    0    0    0    0    0
  END ACTIVITY
```

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```
  PRINT-INFO
    <PLS > ***************** Print-flags ***************************** PIVL  PYR
    # -  # ATMP SNOW PWAT  SED  PST  PWG PQAL MSTL PEST NITR PHOS TRAC  *********
   60         0    0    4    0    0    0    0    0    0    0    0    0    1    9
   52         0    0    4    0    0    0    0    0    0    0    0    0    1    9
  END PRINT-INFO

  PWAT-PARM1
    <PLS >  PWATER variable monthly parameter value flags  ***
    # -  # CSNO RTOP UZFG  VCS  VUZ  VNN VIFW VIRC  VLE INFC  HWT ***
   60         0    0    0    1    0    0    0    0    1    0    0
   52         0    0    0    1    0    0    0    0    1    0    0
  END PWAT-PARM1

  PWAT-PARM2
    <PLS >      PWATER input info: Part 2         ***
    # -  # ***FOREST      LZSN    INFILT      LSUR     SLSUR     KVARY     AGWRC
   60              0      4.25      0.01       350       0.1         3      0.92
   52              0       4.2      0.02       350       0.1         3      0.92
  END PWAT-PARM2

  PWAT-PARM3
    <PLS >      PWATER input info: Part 3         ***
    # -  # ***PETMAX    PETMIN    INFEXP    INFILD    DEEPFR    BASETP    AGWETP
   60             40        35         2         2         0         0      0.05
   52             40        35         2         2         0         0      0.05
  END PWAT-PARM3
  PWAT-PARM4
    <PLS >     PWATER input info: Part 4                                  ***
    # -  #     CEPSC      UZSN      NSUR     INTFW       IRC     LZETP ***
   60              0      0.25      0.25      0.35      0.35         0
   52              0      0.25      0.25       0.5       0.4         0
  END PWAT-PARM4
  MON-LZETPARM
    <PLS >      PWATER input info: Part 3         ***
    # -  #  JAN  FEB  MAR  APR  MAY  JUN  JUL  AUG  SEP  OCT  NOV  DEC  ***
   60       0.5  0.5  0.5  0.6 0.65 0.65 0.65 0.65 0.65 0.65 0.55  0.5
   52       0.4  0.4  0.4 0.45  0.5 0.55 0.55 0.55 0.55 0.55 0.45  0.4
  END MON-LZETPARM
  MON-INTERCEP
    <PLS >      PWATER input info: Part 3         ***
    # -  #  JAN  FEB  MAR  APR  MAY  JUN  JUL  AUG  SEP  OCT  NOV  DEC  ***
   60      0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11
   52      0.12 0.12 0.12 0.11  0.1  0.1  0.1  0.1  0.1  0.1 0.11 0.12
  END MON-INTERCEP

  PWAT-STATE1
    <PLS > *** Initial conditions at start of simulation
              ran from 1990 to end of 1992 (pat 1-11-95) RUN 21 ***
    # -  # ***  CEPS      SURS       UZS      IFWS       LZS      AGWS      GWVS
   60              0         0      0.15         0         4      0.05         0
   52              0         0      0.15         0         4      0.05         0
  END PWAT-STATE1

END PERLND

IMPLND
  GEN-INFO
    <PLS ><-------Name------->   Unit-systems   Printer ***
    # -  #                     User  t-series Engl Metr ***
                                  in  out           ***
    4     Imperv,VSteep(>5%)      1    1    1   27    0
  END GEN-INFO
  *** Section IWATER***

  ACTIVITY
    <PLS > ************* Active Sections ******************************
    # -  # ATMP SNOW IWAT  SLD  IWG IQAL   ***
    4         0    0    1    0    0    0
  END ACTIVITY
```

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```
  PRINT-INFO
    <ILS > ******** Print-flags ******** PIVL  PYR
    # -  # ATMP SNOW IWAT  SLD  IWG IQAL    *********
    4         0    0    4    0    0    0    1    9
  END PRINT-INFO

  IWAT-PARM1
    <PLS >  IWATER variable monthly parameter value flags  ***
    # -  # CSNO RTOP  VRS  VNN RTLI     ***
    4         0    0    0    0    0
  END IWAT-PARM1

  IWAT-PARM2
    <PLS >      IWATER input info: Part 2         ***
    # -  # ***  LSUR     SLSUR      NSUR     RETSC
    4            100       0.1      0.05      0.09
  END IWAT-PARM2

  IWAT-PARM3
    <PLS >      IWATER input info: Part 3         ***
    # -  # ***PETMAX    PETMIN
    4              0         0
  END IWAT-PARM3

  IWAT-STATE1
    <PLS > *** Initial conditions at start of simulation
    # -  # ***  RETS      SURS
    4              0         0
  END IWAT-STATE1

END IMPLND

SCHEMATIC
<-Source->                <--Area-->     <-Target->   MBLK   ***
<Name>   #                <-factor->     <Name>   #   Tbl#   ***
Basin  1***
PERLND  60                      14.22     RCHRES   1      2
PERLND  60                      14.22     RCHRES   1      3
PERLND  52                       2.15     RCHRES   1      2
PERLND  52                       2.15     RCHRES   1      3
IMPLND   4                       8.57     RCHRES   1      5

******Routing******
PERLND  60                      14.22     COPY     1     12
PERLND  52                       2.15     COPY     1     12
IMPLND   4                       8.57     COPY     1     15
PERLND  60                      14.22     COPY     1     13
PERLND  52                       2.15     COPY     1     13
RCHRES   1                          1     COPY   501     16
END SCHEMATIC

NETWORK
<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Target vols> <-Grp> <-Member->  ***
<Name>   #        <Name> # #<-factor->strg <Name>   #   #        <Name> # #  ***
COPY   501 OUTPUT MEAN   1 1   12.1        DISPLY   1     INPUT  TIMSER 1



<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Target vols> <-Grp> <-Member->  ***
<Name>   #        <Name> # #<-factor->strg <Name>   #   #        <Name> # #  ***
END NETWORK

RCHRES
  GEN-INFO
    RCHRES       Name        Nexits   Unit Systems   Printer                ***
    # -  #<------------------><---> User T-series  Engl Metr LKFG           ***
                                       in  out                              ***
    1     SSD Table  10005        1    1    1    1   28    0    1
  END GEN-INFO
```

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```
  *** Section RCHRES***

  ACTIVITY
    <PLS > ************* Active Sections ******************************
    # -  # HYFG ADFG CNFG HTFG SDFG GQFG OXFG NUFG PKFG PHFG ***
    1         1    0    0    0    0    0    0    0    0
  END ACTIVITY

  PRINT-INFO
    <PLS > ***************** Print-flags ****************** PIVL  PYR
    # -  # HYDR ADCA CONS HEAT  SED  GQL OXRX NUTR PLNK PHCB PIVL  PYR  *********
    1         4    0    0    0    0    0    0    0    0    0    1    9
  END PRINT-INFO

  HYDR-PARM1
    RCHRES  Flags for each HYDR Section                                    ***
    # -  #  VC A1 A2 A3  ODFVFG for each *** ODGTFG for each     FUNCT  for each
           FG FG FG FG  possible  exit  *** possible  exit      possible  exit
            *  *  *  *    *  *  *  *  *       *  *  *  *  *         ***
    1        0  1  0  0    4  0  0  0  0       0  0  0  0  0       2  2  2  2  2
  END HYDR-PARM1

  HYDR-PARM2
    # -  #    FTABNO       LEN      DELTH     STCOR        KS      DB50       ***
  <------><--------><--------><--------><--------><--------><--------><--------> ***
    1               1      0.01       0.0       0.0       0.5       0.0
  END HYDR-PARM2
  HYDR-INIT
    RCHRES  Initial conditions for each HYDR section                       ***
    # -  # ***   VOL     Initial  value  of COLIND     Initial  value  of OUTDGT
         *** ac-ft     for each possible exit        for each possible exit
  <------><-------->     <---><---><---><---><---> *** <---><---><---><---><--->
    1         0           4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
  END HYDR-INIT
END RCHRES

SPEC-ACTIONS
END SPEC-ACTIONS
FTABLES
  FTABLE      1
   99    4
     Depth      Area    Volume  Outflow1 Velocity  Travel Time***
      (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
  0.000000  0.000000  0.000000  0.000000
  0.010000  0.001000  0.001000  0.000000
  0.250000  0.005000  0.002600  0.027000
  0.500000  0.010000  0.003100  0.043000
  0.750000  0.015000  0.004900  0.055000
  1.000000  0.021000  0.008100  0.064000
  1.250000  0.028000  0.013100  0.072000
  1.500000  0.036000  0.019900  0.080000
  1.750000  0.044000  0.028700  0.086000
  2.000000  0.053000  0.039800  0.093000
  2.250000  0.063000  0.053200  0.098000
  2.500000  0.073000  0.069100  0.104000
  2.750000  0.084000  0.087700  0.109000
  3.000000  0.095000  0.109200  0.114000
  3.250000  0.108000  0.133800  0.119000
  3.500000  0.121000  0.161600  0.124000
  3.750000  0.134000  0.192800  0.128000
  4.000000  0.149000  0.227600  0.132000
  4.250000  0.164000  0.266100  0.137000
  4.500000  0.180000  0.308600  0.141000
  4.750000  0.196000  0.355100  0.144000
  5.000000  0.213000  0.405900  0.148000
  5.250000  0.231000  0.461200  0.152000
  5.500000  0.249000  0.521000  0.156000
  5.750000  0.268000  0.585700  0.888000
  6.000000  0.288000  0.655200  4.041000
  6.250000  0.309000  0.729900  10.16600
```

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6.500000	0.330000	0.810000	17.11700
6.750000	0.352000	0.895400	21.45700
7.000000	0.374000	0.986600	28.61300
7.250000	0.398000	1.083500	40.22400
7.500000	0.421000	1.186400	54.37000
7.750000	0.446000	1.295500	70.53700
8.000000	0.471000	1.411000	88.45000
8.250000	0.497000	1.532900	107.9270
8.500000	0.524000	1.661500	128.8390
8.750000	0.551000	1.797000	151.0830
9.000000	0.579000	1.939400	174.5790
9.250000	0.608000	2.089100	199.2590
9.500000	0.637000	2.246200	225.0660
9.750000	0.667000	2.410800	251.9510
10.00000	0.698000	2.583100	279.8700
10.25000	0.729000	2.763300	308.7850
10.50000	0.761000	2.951500	338.6620
10.75000	0.794000	3.148000	369.4700
11.00000	0.827000	3.352900	401.1820
11.25000	0.862000	3.566400	433.7710
11.50000	0.896000	3.788600	467.2140
11.75000	0.932000	4.019800	501.4900
12.00000	0.968000	4.260000	536.5780
12.25000	1.005000	4.509500	572.4600
12.50000	1.042000	4.768400	609.1190
12.75000	1.081000	5.037000	646.5380
13.00000	1.119000	5.315300	684.7010
13.25000	1.159000	5.603600	723.5950
13.50000	1.199000	5.902100	763.2060
13.75000	1.240000	6.210800	803.5200
14.00000	1.282000	6.530000	844.5270
14.25000	1.324000	6.859900	886.2130
14.50000	1.367000	7.200500	928.5690
14.75000	1.411000	7.552200	971.5840
15.00000	1.455000	7.915000	1015.247
15.25000	1.500000	8.289200	1059.550
15.50000	1.546000	8.674900	1104.482
15.75000	1.592000	9.072200	1150.036
16.00000	1.639000	9.481400	1196.202
16.25000	1.687000	9.902700	1242.974
16.50000	1.735000	10.33610	1290.342
16.75000	1.784000	10.78190	1338.300
17.00000	1.834000	11.24030	1386.840
17.25000	1.884000	11.71140	1435.956
17.50000	1.936000	12.19530	1485.640
17.75000	1.987000	12.69240	1535.887
18.00000	2.040000	13.20260	1586.690
18.25000	2.093000	13.72630	1638.043
18.50000	2.147000	14.26350	1689.939
18.75000	2.201000	14.81450	1742.375
19.00000	2.257000	15.37950	1795.343
19.25000	2.313000	15.95850	1848.839
19.50000	2.369000	16.55180	1902.858
19.75000	2.426000	17.15950	1957.394
20.00000	2.484000	17.78190	2012.443
20.25000	2.543000	18.41900	2067.999
20.50000	2.602000	19.07120	2124.059
20.75000	2.662000	19.73840	2180.618
21.00000	2.723000	20.42090	2237.670
21.25000	2.784000	21.11900	2295.214
21.50000	2.846000	21.83260	2353.243
21.75000	2.909000	22.56210	2411.754
22.00000	2.972000	23.30760	2470.743
22.25000	3.036000	24.06930	2530.206
22.50000	3.101000	24.84730	2590.139
22.75000	3.167000	25.64180	2650.540
23.00000	3.233000	26.45300	2711.403
23.25000	3.299000	27.28100	2772.726
23.50000	3.367000	28.12610	2834.505
23.75000	3.435000	28.98840	2896.738

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```
  24.00000  3.504000  29.86810  2959.419
  24.25000  3.573000  30.76530  3022.547
  END FTABLE  1
END FTABLES

EXT SOURCES
<-Volume-> <Member> SsysSgap<--Mult-->Tran <-Target vols> <-Grp> <-Member->  ***
<Name>   # <Name> # tem strg<-factor->strg <Name>   #   #        <Name> # #  ***
WDM      2 PREC     ENGL    1.136          PERLND   1 999 EXTNL  PREC
WDM      2 PREC     ENGL    1.136          IMPLND   1 999 EXTNL  PREC
WDM      1 EVAP     ENGL    1              PERLND   1 999 EXTNL  PETINP
WDM      1 EVAP     ENGL    1              IMPLND   1 999 EXTNL  PETINP
WDM     22 IRRG     ENGL    0.7       SAME PERLND  60     EXTNL  SURLI
WDM      2 PREC     ENGL    1.136          RCHRES   1     EXTNL  PREC
WDM      1 EVAP     ENGL    1              RCHRES   1     EXTNL  POTEV

END EXT SOURCES

EXT TARGETS
<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Volume-> <Member> Tsys Tgap Amd ***
<Name>   #        <Name> # #<-factor->strg <Name>   # <Name>    tem strg strg***
RCHRES   1 HYDR   RO     1 1        1      WDM   1000 FLOW     ENGL      REPL
RCHRES   1 HYDR   STAGE  1 1        1      WDM   1001 STAG     ENGL      REPL
COPY     1 OUTPUT MEAN   1 1     12.1      WDM    701 FLOW     ENGL      REPL
COPY   501 OUTPUT MEAN   1 1     12.1      WDM    801 FLOW     ENGL      REPL
END EXT TARGETS

MASS-LINK
<Volume>   <-Grp> <-Member-><--Mult-->     <Target>       <-Grp> <-Member->***
<Name>            <Name> # #<-factor->     <Name>                <Name> # #***
  MASS-LINK        2
PERLND     PWATER SURO       0.083333      RCHRES         INFLOW IVOL
  END MASS-LINK    2

  MASS-LINK        3
PERLND     PWATER IFWO       0.083333      RCHRES         INFLOW IVOL
  END MASS-LINK    3

  MASS-LINK        5
IMPLND     IWATER SURO       0.083333      RCHRES         INFLOW IVOL
  END MASS-LINK    5

  MASS-LINK       12
PERLND     PWATER SURO       0.083333      COPY           INPUT  MEAN
  END MASS-LINK   12

  MASS-LINK       13
PERLND     PWATER IFWO       0.083333      COPY           INPUT  MEAN
  END MASS-LINK   13

  MASS-LINK       15
IMPLND     IWATER SURO       0.083333      COPY           INPUT  MEAN
  END MASS-LINK   15

  MASS-LINK       16
RCHRES     ROFLOW                          COPY           INPUT  MEAN
  END MASS-LINK   16


END MASS-LINK

END RUN
```

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PROJECT REPORT

General Model Information

Project Name: Combo5_11-5-13
Site Name:
Site Address:
City:
Report Date: 11/27/2013
Gage: ORANGEVA
Data Start: 1964/10/01
Data End: 2004/09/30
Timestep: Hourly
Precip Scale: 1.05
Version: 2013/08/23

POC Thresholds

Low Flow Threshold for POC1:	25 Percent of the 2 Year
High Flow Threshold for POC1:	10 Year

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Landuse Basin Data

Pre-Project Land Use

Basin 1

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
D,Grass,Mod (1-2%)	78
Pervious Total	78

Impervious Land Use	Acres
Impervious Total	0
Basin Total	78

Element Flows To:

Surface	Interflow	Groundwater

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Mitigated Land Use

Basin 1

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
D,Urban,Mod (1-2%)	33.72
D,Grass,Mod (1-2%)	3.85
Pervious Total	37.57

Impervious Land Use	Acres
Imperv,Mod (1-2%)	29.25
Impervious Total	29.25
Basin Total	66.82

Element Flows To:

Surface	Interflow	Groundwater
Combo 5	Combo 5	

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Basin 2

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
D,Grass,Mod (1-2%)	12.16
Pervious Total	12.16

Impervious Land Use	Acres
Impervious Total	0
Basin Total	12.16

Element Flows To:

Surface	Interflow	Groundwater
Combo 5	Combo 5	

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Mitigated Routing

Combo 5

Depth: 9.6 ft.
Element Flows To:
Outlet 1 Outlet 2

SSD Table Hydraulic Table

Stage (ft)	Area (ac)	Volume (ac-ft)	Manual	NotUsed	NotUsed	NotUsed	NotUsed
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.010	1.000	0.010	0.001	0.000	0.000	0.000	0.000
0.100	1.010	0.100	0.035	0.000	0.000	0.000	0.000
0.200	1.022	0.201	0.099	0.000	0.000	0.000	0.000
0.300	1.034	0.304	0.182	0.000	0.000	0.000	0.000
0.400	1.046	0.408	0.258	0.000	0.000	0.000	0.000
0.500	1.057	0.513	0.309	0.000	0.000	0.000	0.000
0.600	1.069	0.620	0.352	0.000	0.000	0.000	0.000
0.700	1.081	0.727	0.391	0.000	0.000	0.000	0.000
0.800	1.093	0.836	0.426	0.000	0.000	0.000	0.000
0.900	1.105	0.946	0.458	0.000	0.000	0.000	0.000
1.000	1.116	1.057	0.488	0.000	0.000	0.000	0.000
1.100	1.128	1.169	0.517	0.000	0.000	0.000	0.000
1.200	1.140	1.282	0.544	0.000	0.000	0.000	0.000
1.300	1.152	1.397	0.570	0.000	0.000	0.000	0.000
1.400	1.163	1.513	0.594	0.000	0.000	0.000	0.000
1.500	1.175	1.630	0.618	0.000	0.000	0.000	0.000
1.600	1.187	1.748	0.641	0.000	0.000	0.000	0.000
1.700	1.199	1.867	0.733	0.000	0.000	0.000	0.000
1.800	1.210	1.987	0.882	0.000	0.000	0.000	0.000
1.900	1.222	2.109	1.069	0.000	0.000	0.000	0.000
2.000	1.234	2.231	1.286	0.000	0.000	0.000	0.000
2.100	1.245	2.355	1.529	0.000	0.000	0.000	0.000
2.200	1.257	2.480	1.795	0.000	0.000	0.000	0.000
2.300	1.269	2.607	2.082	0.000	0.000	0.000	0.000
2.400	1.281	2.734	2.388	0.000	0.000	0.000	0.000
2.500	1.292	2.862	2.713	0.000	0.000	0.000	0.000
2.600	1.304	2.992	3.055	0.000	0.000	0.000	0.000
2.700	1.316	3.123	3.338	0.000	0.000	0.000	0.000
2.800	1.327	3.255	3.554	0.000	0.000	0.000	0.000
2.900	1.339	3.388	4.240	0.000	0.000	0.000	0.000
3.000	1.351	3.523	5.316	0.000	0.000	0.000	0.000
3.100	1.362	3.658	6.643	0.000	0.000	0.000	0.000
3.200	1.374	3.795	8.174	0.000	0.000	0.000	0.000
3.300	1.386	3.933	9.879	0.000	0.000	0.000	0.000
3.400	1.397	4.072	11.74	0.000	0.000	0.000	0.000
3.500	1.409	4.212	13.75	0.000	0.000	0.000	0.000
3.600	1.421	4.354	15.88	0.000	0.000	0.000	0.000
3.700	1.432	4.496	18.15	0.000	0.000	0.000	0.000
3.800	1.444	4.640	20.52	0.000	0.000	0.000	0.000
3.900	1.456	4.785	23.01	0.000	0.000	0.000	0.000
4.000	1.467	4.931	25.61	0.000	0.000	0.000	0.000
4.100	1.479	5.078	28.31	0.000	0.000	0.000	0.000
4.200	1.491	5.226	31.10	0.000	0.000	0.000	0.000
4.300	1.502	5.376	33.99	0.000	0.000	0.000	0.000

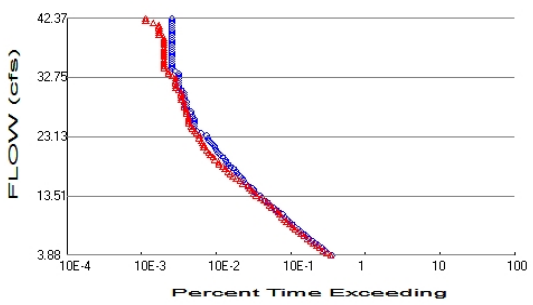
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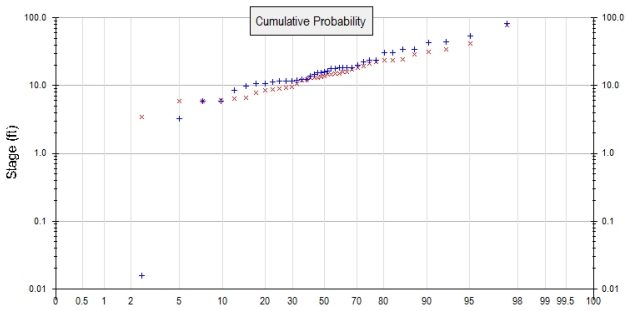
4.400	1.514	5.527	36.97	0.000	0.000	0.000	0.000
4.500	1.526	5.679	40.04	0.000	0.000	0.000	0.000
4.600	1.537	5.832	43.19	0.000	0.000	0.000	0.000
4.700	1.549	5.986	47.45	0.000	0.000	0.000	0.000
4.800	1.561	6.141	51.81	0.000	0.000	0.000	0.000
4.900	1.572	6.298	56.78	0.000	0.000	0.000	0.000
5.000	1.584	6.456	62.21	0.000	0.000	0.000	0.000
5.100	1.595	6.615	68.05	0.000	0.000	0.000	0.000
5.200	1.607	6.775	74.25	0.000	0.000	0.000	0.000
5.300	1.619	6.936	80.79	0.000	0.000	0.000	0.000
5.400	1.630	7.098	87.63	0.000	0.000	0.000	0.000
5.500	1.642	7.262	94.76	0.000	0.000	0.000	0.000
5.600	1.653	7.427	102.2	0.000	0.000	0.000	0.000
5.700	1.665	7.593	109.8	0.000	0.000	0.000	0.000
5.800	1.677	7.760	117.7	0.000	0.000	0.000	0.000
5.900	1.688	7.928	125.9	0.000	0.000	0.000	0.000
6.000	1.700	8.097	134.3	0.000	0.000	0.000	0.000
6.100	1.711	8.268	142.9	0.000	0.000	0.000	0.000
6.200	1.723	8.440	151.7	0.000	0.000	0.000	0.000
6.300	1.734	8.613	160.8	0.000	0.000	0.000	0.000
6.400	1.746	8.787	170.0	0.000	0.000	0.000	0.000
6.500	1.758	8.962	179.4	0.000	0.000	0.000	0.000
6.600	1.769	9.138	189.1	0.000	0.000	0.000	0.000
6.700	1.781	9.316	198.9	0.000	0.000	0.000	0.000
6.800	1.792	9.495	208.9	0.000	0.000	0.000	0.000
6.900	1.804	9.675	219.1	0.000	0.000	0.000	0.000
7.000	1.815	9.856	229.5	0.000	0.000	0.000	0.000
7.100	1.827	10.04	240.1	0.000	0.000	0.000	0.000
7.200	1.838	10.22	250.8	0.000	0.000	0.000	0.000
7.300	1.850	10.41	261.7	0.000	0.000	0.000	0.000
7.400	1.861	10.59	272.7	0.000	0.000	0.000	0.000
7.500	1.873	10.78	284.0	0.000	0.000	0.000	0.000
7.600	1.885	10.97	295.4	0.000	0.000	0.000	0.000
7.700	1.896	11.16	306.9	0.000	0.000	0.000	0.000
7.800	1.908	11.35	318.6	0.000	0.000	0.000	0.000
7.900	1.919	11.54	330.5	0.000	0.000	0.000	0.000
8.000	1.931	11.73	342.5	0.000	0.000	0.000	0.000
8.100	1.942	11.93	999.0	0.000	0.000	0.000	0.000
8.200	1.954	12.12	340.9	0.000	0.000	0.000	0.000
8.300	1.965	12.32	353.0	0.000	0.000	0.000	0.000
8.400	1.977	12.51	365.3	0.000	0.000	0.000	0.000
8.500	1.988	12.71	377.7	0.000	0.000	0.000	0.000
8.600	2.000	12.91	390.3	0.000	0.000	0.000	0.000
8.700	2.011	13.11	403.0	0.000	0.000	0.000	0.000
8.800	2.023	13.32	415.9	0.000	0.000	0.000	0.000
8.900	2.034	13.52	428.9	0.000	0.000	0.000	0.000
9.000	2.045	13.72	442.1	0.000	0.000	0.000	0.000
9.100	2.057	13.93	455.4	0.000	0.000	0.000	0.000
9.200	2.068	14.14	468.8	0.000	0.000	0.000	0.000
9.300	2.080	14.34	482.3	0.000	0.000	0.000	0.000
9.400	2.091	14.55	496.0	0.000	0.000	0.000	0.000
9.500	2.103	14.76	509.9	0.000	0.000	0.000	0.000
9.600	2.114	14.97	999.0	0.000	0.000	0.000	0.000

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Analysis Results

POC 1





\+ Pre-Project x Mitigated

Pre-Project Landuse Totals for POC #1
Total Pervious Area: 78
Total Impervious Area: 0

Mitigated Landuse Totals for POC #1
Total Pervious Area: 49.73
Total Impervious Area: 29.25

Flow Frequency Method: Log Pearson Type III 17B

Flow Frequency Return Periods for Pre-Project. POC #1

Return Period	**Flow(cfs)**
2 year	15.538815
5 year	29.120627
10 year	42.374502
25 year	60.834644

Flow Frequency Return Periods for Mitigated. POC #1

Return Period	**Flow(cfs)**
2 year	13.213741
5 year	23.214634
10 year	30.788049
25 year	49.549154

Annual Peaks

Annual Peaks for Pre-Project and Mitigated. POC #1

Year	**Pre-Project**	**Mitigated**
1965	16.326	13.842
1966	5.893	5.856
1967	18.451	18.456
1968	10.791	8.749
1969	18.364	12.955
1970	14.748	15.053
1971	18.223	12.905
1972	5.837	6.509
1973	30.646	23.495
1974	23.699	13.485
1975	11.576	5.951
1976	0.015	3.403
1977	0.016	0.794
1978	44.152	28.790

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1979	12.182	9.579
1980	13.985	12.079
1981	11.995	12.904
1982	23.490	21.222
1983	30.848	24.105
1984	15.662	14.779
1985	10.796	9.185
1986	54.457	41.528
1987	11.499	10.649
1988	11.656	15.867
1989	18.098	12.434
1990	11.392	6.006
1991	15.943	15.243
1992	22.611	23.994
1993	17.935	14.700
1994	3.229	8.491
1995	83.510	78.068
1996	33.797	22.219
1997	43.510	34.119
1998	34.198	31.066
1999	9.723	8.898
2000	20.051	19.338
2001	12.469	7.774
2002	8.642	6.658
2003	15.421	16.056
2004	17.766	17.560

Ranked Annual Peaks

Ranked Annual Peaks for Pre-Project and Mitigated. POC #1

Rank	Pre-Project	Mitigated
1	83.5100	78.0681
2	54.4572	41.5282
3	44.1520	34.1189
4	43.5101	31.0655
5	34.1982	28.7904
6	33.7974	24.1053
7	30.8478	23.9940
8	30.6456	23.4946
9	23.6985	22.2192
10	23.4902	21.2220
11	22.6105	19.3375
12	20.0506	18.4563
13	18.4508	17.5597
14	18.3643	16.0560
15	18.2227	15.8667
16	18.0976	15.2431
17	17.9347	15.0527
18	17.7655	14.7786
19	16.3257	14.7001
20	15.9433	13.8422
21	15.6621	13.4850
22	15.4214	12.9554
23	14.7483	12.9053
24	13.9846	12.9042
25	12.4693	12.4335
26	12.1821	12.0794
27	11.9953	10.6489
28	11.6564	9.5787

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29	11.5764	9.1851
30	11.4992	8.8985
31	11.3916	8.7491
32	10.7964	8.4910
33	10.7912	7.7740
34	9.7229	6.6580
35	8.6415	6.5088
36	5.8928	6.0061
37	5.8368	5.9514
38	3.2295	5.8558
39	0.0157	3.4034
40	0.0154	0.7940

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Duration Flows

The Facility PASSED

Flow(cfs)	Predev	Mit	Percentage	Pass/Fail
3.8847	1241	1204	97	Pass
4.2735	1100	1068	97	Pass
4.6623	995	952	95	Pass
5.0511	908	855	94	Pass
5.4398	825	782	94	Pass
5.8286	756	704	93	Pass
6.2174	684	643	94	Pass
6.6062	613	580	94	Pass
6.9950	567	523	92	Pass
7.3838	520	485	93	Pass
7.7726	478	440	92	Pass
8.1613	440	399	90	Pass
8.5501	397	371	93	Pass
8.9389	368	337	91	Pass
9.3277	339	308	90	Pass
9.7165	311	287	92	Pass
10.1053	290	263	90	Pass
10.4941	271	250	92	Pass
10.8828	243	236	97	Pass
11.2716	226	221	97	Pass
11.6604	205	196	95	Pass
12.0492	187	184	98	Pass
12.4380	171	167	97	Pass
12.8268	155	155	100	Pass
13.2156	142	138	97	Pass
13.6043	137	121	88	Pass
13.9931	120	113	94	Pass
14.3819	114	106	92	Pass
14.7707	107	98	91	Pass
15.1595	96	93	96	Pass
15.5483	88	80	90	Pass
15.9371	82	73	89	Pass
16.3259	79	65	82	Pass
16.7146	74	59	79	Pass
17.1034	69	54	78	Pass
17.4922	65	50	76	Pass
17.8810	61	46	75	Pass
18.2698	55	43	78	Pass
18.6586	51	38	74	Pass
19.0474	48	38	79	Pass
19.4361	47	34	72	Pass
19.8249	43	32	74	Pass
20.2137	40	29	72	Pass
20.6025	37	28	75	Pass
20.9913	35	26	74	Pass
21.3801	34	24	70	Pass
21.7689	32	24	75	Pass
22.1576	30	23	76	Pass
22.5464	28	22	78	Pass
22.9352	27	21	77	Pass
23.3240	26	21	80	Pass
23.7128	22	19	86	Pass
24.1016	19	18	94	Pass

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24.4904	18	17	94	Pass
24.8791	18	16	88	Pass
25.2679	18	15	83	Pass
25.6567	18	15	83	Pass
26.0455	18	15	83	Pass
26.4343	17	15	88	Pass
26.8231	16	14	87	Pass
27.2119	16	14	87	Pass
27.6006	14	14	100	Pass
27.9894	14	13	92	Pass
28.3782	14	13	92	Pass
28.7670	14	13	92	Pass
29.1558	13	12	92	Pass
29.5446	13	12	92	Pass
29.9334	13	12	92	Pass
30.3221	13	12	92	Pass
30.7109	12	11	91	Pass
31.0997	11	10	90	Pass
31.4885	11	10	90	Pass
31.8773	11	10	90	Pass
32.2661	11	10	90	Pass
32.6549	11	10	90	Pass
33.0436	11	9	81	Pass
33.4324	11	8	72	Pass
33.8212	10	8	80	Pass
34.2100	9	7	77	Pass
34.5988	9	7	77	Pass
34.9876	9	7	77	Pass
35.3764	9	7	77	Pass
35.7651	9	7	77	Pass
36.1539	9	7	77	Pass
36.5427	9	7	77	Pass
36.9315	9	7	77	Pass
37.3203	9	7	77	Pass
37.7091	9	7	77	Pass
38.0979	9	7	77	Pass
38.4866	9	7	77	Pass
38.8754	9	7	77	Pass
39.2642	9	7	77	Pass
39.6530	9	6	66	Pass
40.0418	9	6	66	Pass
40.4306	9	6	66	Pass
40.8194	9	6	66	Pass
41.2081	9	6	66	Pass
41.5969	9	5	55	Pass
41.9857	9	4	44	Pass
42.3745	9	4	44	Pass

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Model Default Modifications

Total of 0 changes have been made.

PERLND Changes

No PERLND changes have been made.

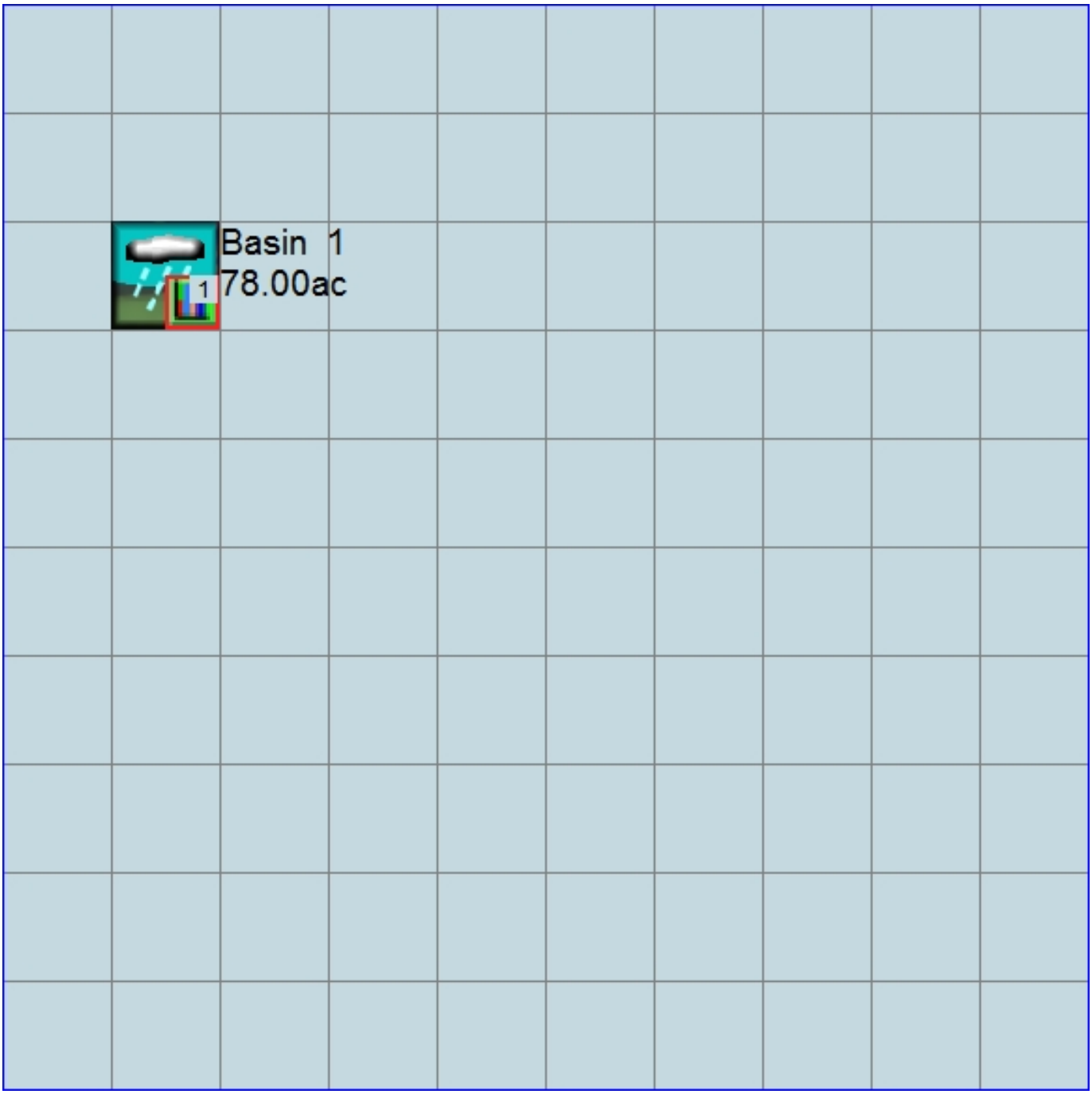
IMPLND Changes

No IMPLND changes have been made.

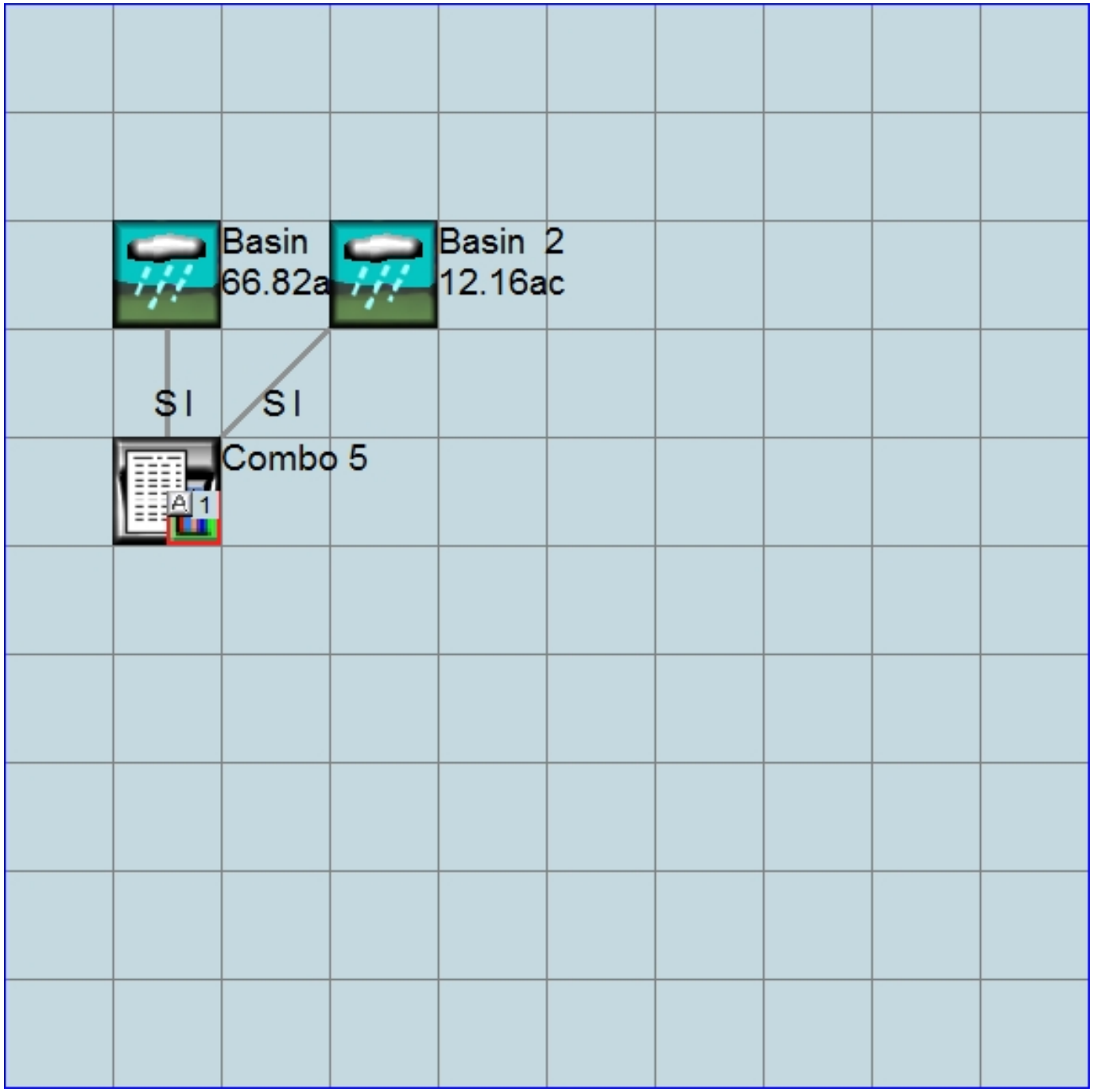
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Appendix

Pre-Project Schematic



Mitigated Schematic



Pre-Project UCI File

```
RUN

GLOBAL
  WWHM4 model simulation
  START       1964 10 01        END    2004 09 30
  RUN INTERP OUTPUT LEVEL    3    0
  RESUME     0 RUN     1                    UNIT SYSTEM     1
END GLOBAL

FILES
<File>  <Un#>   <-----------File Name------------------------------>***
<-ID->                                                              ***
WDM         26   Combo5_11-5-13.wdm
MESSU       25   PreCombo5_11-5-13.MES
            27   PreCombo5_11-5-13.L61
            28   PreCombo5_11-5-13.L62
            30   POCCombo5_11-5-131.dat
END FILES

OPN SEQUENCE
    INGRP               INDELT 00:60
      PERLND      50
      COPY       501
      DISPLY       1
    END INGRP
END OPN SEQUENCE
DISPLY
  DISPLY-INFO1
    # -  #<----------Title---------->***TRAN PIVL DIG1 FIL1  PYR DIG2 FIL2 YRND
    1        Basin  1                   MAX                    1    2   30    9
  END DISPLY-INFO1
END DISPLY
COPY
  TIMESERIES
    # -  #  NPT  NMN ***
    1         1    1
  501         1    1
  END TIMESERIES
END COPY
GENER
  OPCODE
    #    # OPCD ***
  END OPCODE
  PARM
    #    #         K ***
  END PARM
END GENER
PERLND
  GEN-INFO
    <PLS ><-------Name------->NBLKS   Unit-systems   Printer ***
    # -  #                         User  t-series Engl Metr ***
                                      in  out           ***
   50     D,Grass,Mod (1-2%)      1    1    1    1   27    0
  END GEN-INFO
  *** Section PWATER***

  ACTIVITY
    <PLS > ************ Active Sections ****************************
    # -  # ATMP SNOW PWAT  SED  PST  PWG PQAL MSTL PEST NITR PHOS TRAC ***
   50         0    0    1    0    0    0    0    0    0    0    0    0
  END ACTIVITY

  PRINT-INFO
    <PLS > ***************** Print-flags **************************** PIVL  PYR
    # -  # ATMP SNOW PWAT  SED  PST  PWG PQAL MSTL PEST NITR PHOS TRAC  *********
   50         0    0    4    0    0    0    0    0    0    0    0    0    1    9
  END PRINT-INFO
```

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```
  PWAT-PARM1
    <PLS >  PWATER variable monthly parameter value flags  ***
    # -  # CSNO RTOP UZFG  VCS  VUZ  VNN VIFW VIRC  VLE INFC  HWT ***
   50         0    0    0    1    0    0    0    0    1    0    0
  END PWAT-PARM1

  PWAT-PARM2
    <PLS >      PWATER input info: Part 2         ***
    # -  # ***FOREST      LZSN    INFILT      LSUR     SLSUR     KVARY     AGWRC
   50             0      4.35     0.028       400      0.02         3      0.92
  END PWAT-PARM2

  PWAT-PARM3
    <PLS >      PWATER input info: Part 3         ***
    # -  # ***PETMAX    PETMIN    INFEXP    INFILD    DEEPFR    BASETP    AGWETP
   50            40        35         2         2         0         0      0.05
  END PWAT-PARM3
  PWAT-PARM4
    <PLS >     PWATER input info: Part 4                              ***
    # -  #     CEPSC      UZSN      NSUR     INTFW       IRC     LZETP ***
   50             0      0.28      0.25      0.65      0.48         0
  END PWAT-PARM4
  MON-LZETPARM
    <PLS >      PWATER input info: Part 3         ***
    # -  #  JAN  FEB  MAR  APR  MAY  JUN  JUL  AUG  SEP  OCT  NOV  DEC  ***
   50       0.4  0.4  0.4 0.45  0.5 0.55 0.55 0.55 0.55 0.55 0.45  0.4
  END MON-LZETPARM
  MON-INTERCEP
    <PLS >      PWATER input info: Part 3         ***
    # -  #  JAN  FEB  MAR  APR  MAY  JUN  JUL  AUG  SEP  OCT  NOV  DEC  ***
   50      0.12 0.12 0.12 0.11  0.1  0.1  0.1  0.1  0.1  0.1 0.11 0.12
  END MON-INTERCEP

  PWAT-STATE1
    <PLS > *** Initial conditions at start of simulation
               ran from 1990 to end of 1992 (pat 1-11-95) RUN 21 ***
    # -  # ***  CEPS      SURS       UZS       IFWS       LZS       AGWS      GWVS
   50             0         0      0.15          0         4      0.05         0
  END PWAT-STATE1

END PERLND

IMPLND
  GEN-INFO
    <PLS ><-------Name------->   Unit-systems   Printer ***
    # -  #                     User  t-series Engl Metr ***
                                     in  out           ***
  END GEN-INFO
  *** Section IWATER***

  ACTIVITY
    <PLS > ************ Active Sections ******************************
    # -  # ATMP SNOW IWAT  SLD  IWG IQAL   ***
  END ACTIVITY

  PRINT-INFO
    <ILS > ******** Print-flags ******** PIVL  PYR
    # -  # ATMP SNOW IWAT  SLD  IWG IQAL    *********
  END PRINT-INFO

  IWAT-PARM1
    <PLS >  IWATER variable monthly parameter value flags  ***
    # -  # CSNO RTOP  VRS  VNN RTLI     ***
  END IWAT-PARM1

  IWAT-PARM2
    <PLS >      IWATER input info: Part 2         ***
    # -  # ***  LSUR     SLSUR      NSUR     RETSC
  END IWAT-PARM2
```

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```
  IWAT-PARM3
    <PLS >      IWATER input info: Part 3         ***
    # -  # ***PETMAX    PETMIN
  END IWAT-PARM3

  IWAT-STATE1
    <PLS > *** Initial conditions at start of simulation
    # -  # ***  RETS      SURS
  END IWAT-STATE1

END IMPLND

SCHEMATIC
<-Source->                  <--Area-->     <-Target->   MBLK   ***
<Name>   #                  <-factor->     <Name>   #   Tbl#   ***
Basin  1***
PERLND  50                          78     COPY   501     12
PERLND  50                          78     COPY   501     13

******Routing******
END SCHEMATIC

NETWORK
<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Target vols> <-Grp> <-Member->  ***
<Name>   #        <Name> # #<-factor->strg <Name>   #   #        <Name> # #  ***
COPY   501 OUTPUT MEAN   1 1   12.1        DISPLY   1     INPUT  TIMSER 1



<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Target vols> <-Grp> <-Member->  ***
<Name>   #        <Name> # #<-factor->strg <Name>   #   #        <Name> # #  ***
END NETWORK

RCHRES
  GEN-INFO
    RCHRES       Name        Nexits   Unit Systems   Printer                 ***
    # -  #<------------------><---> User T-series  Engl Metr LKFG                 ***
                                           in  out                           ***
  END GEN-INFO
  *** Section RCHRES***

  ACTIVITY
    <PLS > ************* Active Sections *****************************
    # -  # HYFG ADFG CNFG HTFG SDFG GQFG OXFG NUFG PKFG PHFG ***
  END ACTIVITY

  PRINT-INFO
    <PLS > ***************** Print-flags ****************** PIVL  PYR
    # -  # HYDR ADCA CONS HEAT  SED  GQL OXRX NUTR PLNK PHCB PIVL  PYR  *********
  END PRINT-INFO

  HYDR-PARM1
    RCHRES  Flags for each HYDR Section                                      ***
    # -  #  VC A1 A2 A3  ODFVFG for each *** ODGTFG for each     FUNCT  for each
            FG FG FG FG  possible  exit  *** possible  exit      possible  exit
             *  *  *  *    *  *  *  *  *       *  *  *  *  *        ***
  END HYDR-PARM1

  HYDR-PARM2
    # -  #    FTABNO       LEN     DELTH     STCOR        KS      DB50       ***
  <------><--------><--------><--------><--------><--------><-------->       ***
  END HYDR-PARM2
  HYDR-INIT
    RCHRES  Initial conditions for each HYDR section                         ***
    # -  # ***    VOL     Initial  value  of COLIND     Initial  value  of OUTDGT
          *** ac-ft     for each possible exit        for each possible exit
  <------><-------->     <---><---><---><---><---> *** <---><---><---><---><--->
  END HYDR-INIT
END RCHRES
```

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```
SPEC-ACTIONS
END SPEC-ACTIONS
FTABLES
END FTABLES

EXT SOURCES
<-Volume-> <Member> SsysSgap<--Mult-->Tran <-Target vols> <-Grp> <-Member->  ***
<Name>   # <Name> # tem strg<-factor->strg <Name>   #   #        <Name> # #  ***
WDM      2 PREC     ENGL    1.045          PERLND   1 999 EXTNL  PREC
WDM      2 PREC     ENGL    1.045          IMPLND   1 999 EXTNL  PREC
WDM      1 EVAP     ENGL    1              PERLND   1 999 EXTNL  PETINP
WDM      1 EVAP     ENGL    1              IMPLND   1 999 EXTNL  PETINP

END EXT SOURCES

EXT TARGETS
<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Volume-> <Member> Tsys Tgap Amd ***
<Name>   #        <Name> # #<-factor->strg <Name>   # <Name>    tem strg strg***
COPY   501 OUTPUT MEAN   1 1     12.1      WDM    501 FLOW     ENGL      REPL
END EXT TARGETS

MASS-LINK
<Volume>   <-Grp> <-Member-><--Mult-->     <Target>       <-Grp> <-Member->***
<Name>            <Name> # #<-factor->     <Name>                <Name> # #***
  MASS-LINK       12
PERLND     PWATER SURO       0.083333      COPY           INPUT  MEAN
  END MASS-LINK   12

  MASS-LINK       13
PERLND     PWATER IFWO       0.083333      COPY           INPUT  MEAN
  END MASS-LINK   13


END MASS-LINK

END RUN
```

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Mitigated UCI File

```
RUN

GLOBAL
  WWHM4 model simulation
  START       1964 10 01        END    2004 09 30
  RUN INTERP OUTPUT LEVEL    3    0
  RESUME     0 RUN     1                    UNIT SYSTEM     1
END GLOBAL

FILES
<File>  <Un#>   <-----------File Name------------------------------>***
<-ID->                                                              ***
WDM         26   Combo5_11-5-13.wdm
MESSU       25   MitCombo5_11-5-13.MES
            27   MitCombo5_11-5-13.L61
            28   MitCombo5_11-5-13.L62
            30   POCCombo5_11-5-131.dat
END FILES

OPN SEQUENCE
    INGRP               INDELT 00:60
      PERLND      58
      PERLND      50
      IMPLND       2
      RCHRES       1
      COPY         1
      COPY       501
      DISPLY       1
    END INGRP
END OPN SEQUENCE
DISPLY
  DISPLY-INFO1
    # -  #<----------Title---------->***TRAN PIVL DIG1 FIL1  PYR DIG2 FIL2 YRND
    1        Combo 5                  MAX                    1    2   30    9
  END DISPLY-INFO1
END DISPLY
COPY
  TIMESERIES
    # -  #  NPT  NMN ***
    1         1    1
  501         1    1
  END TIMESERIES
END COPY
GENER
  OPCODE
    #    # OPCD ***
  END OPCODE
  PARM
    #    #         K ***
  END PARM
END GENER
PERLND
  GEN-INFO
    <PLS ><-------Name------->NBLKS   Unit-systems   Printer ***
    # -  #                          User  t-series Engl Metr ***
                                          in  out           ***
   58     D,Urban,Mod (1-2%)      1    1    1    1   27    0
   50     D,Grass,Mod (1-2%)      1    1    1    1   27    0
  END GEN-INFO
  *** Section PWATER***

  ACTIVITY
    <PLS > ************ Active Sections ******************************
    # -  # ATMP SNOW PWAT  SED  PST  PWG PQAL MSTL PEST NITR PHOS TRAC ***
   58         0    0    1    0    0    0    0    0    0    0    0    0
   50         0    0    1    0    0    0    0    0    0    0    0    0
  END ACTIVITY
```

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```
  PRINT-INFO
    <PLS > ***************** Print-flags ***************************** PIVL  PYR
    # -  # ATMP SNOW PWAT  SED  PST  PWG PQAL MSTL PEST NITR PHOS TRAC  *********
   58         0    0    4    0    0    0    0    0    0    0    0    0    1    9
   50         0    0    4    0    0    0    0    0    0    0    0    0    1    9
  END PRINT-INFO

  PWAT-PARM1
    <PLS >  PWATER variable monthly parameter value flags  ***
    # -  # CSNO RTOP UZFG  VCS  VUZ  VNN VIFW VIRC  VLE INFC  HWT ***
   58         0    0    0    1    0    0    0    0    1    0    0
   50         0    0    0    1    0    0    0    0    1    0    0
  END PWAT-PARM1

  PWAT-PARM2
    <PLS >      PWATER input info: Part 2         ***
    # -  # ***FOREST      LZSN    INFILT      LSUR     SLSUR     KVARY     AGWRC
   58              0       4.4     0.018       400      0.02         3      0.92
   50              0      4.35     0.028       400      0.02         3      0.92
  END PWAT-PARM2

  PWAT-PARM3
    <PLS >      PWATER input info: Part 3         ***
    # -  # ***PETMAX    PETMIN    INFEXP    INFILD    DEEPFR    BASETP    AGWETP
   58             40        35         2         2         0         0      0.05
   50             40        35         2         2         0         0      0.05
  END PWAT-PARM3
  PWAT-PARM4
    <PLS >     PWATER input info: Part 4                                  ***
    # -  #     CEPSC      UZSN      NSUR     INTFW       IRC     LZETP ***
   58              0      0.28      0.25      0.48      0.38         0
   50              0      0.28      0.25      0.65      0.48         0
  END PWAT-PARM4
  MON-LZETPARM
    <PLS >      PWATER input info: Part 3         ***
    # -  #  JAN  FEB  MAR  APR  MAY  JUN  JUL  AUG  SEP  OCT  NOV  DEC  ***
   58       0.5  0.5  0.5  0.6 0.65 0.65 0.65 0.65 0.65 0.65 0.55  0.5
   50       0.4  0.4  0.4 0.45  0.5 0.55 0.55 0.55 0.55 0.55 0.45  0.4
  END MON-LZETPARM
  MON-INTERCEP
    <PLS >      PWATER input info: Part 3         ***
    # -  #  JAN  FEB  MAR  APR  MAY  JUN  JUL  AUG  SEP  OCT  NOV  DEC  ***
   58      0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11
   50      0.12 0.12 0.12 0.11  0.1  0.1  0.1  0.1  0.1  0.1 0.11 0.12
  END MON-INTERCEP

  PWAT-STATE1
    <PLS > *** Initial conditions at start of simulation
               ran from 1990 to end of 1992 (pat 1-11-95) RUN 21 ***
    # -  # ***  CEPS      SURS       UZS      IFWS       LZS      AGWS      GWVS
   58              0         0      0.15         0         4      0.05         0
   50              0         0      0.15         0         4      0.05         0
  END PWAT-STATE1

END PERLND

IMPLND
  GEN-INFO
    <PLS ><-------Name------->   Unit-systems   Printer ***
    # -  #                     User  t-series Engl Metr ***
                                  in  out           ***
    2     Imperv,Mod (1-2%)       1    1    1   27    0
  END GEN-INFO
  *** Section IWATER***

  ACTIVITY
    <PLS > ************* Active Sections ******************************
    # -  # ATMP SNOW IWAT  SLD  IWG IQAL   ***
    2         0    0    1    0    0    0
  END ACTIVITY
```

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```
  PRINT-INFO
    <ILS > ******** Print-flags ******** PIVL  PYR
    # -  # ATMP SNOW IWAT  SLD  IWG IQAL    *********
    2         0    0    4    0    0    0    1    9
  END PRINT-INFO

  IWAT-PARM1
    <PLS >  IWATER variable monthly parameter value flags  ***
    # -  # CSNO RTOP  VRS  VNN RTLI     ***
    2         0    0    0    0    0
  END IWAT-PARM1

  IWAT-PARM2
    <PLS >      IWATER input info: Part 2         ***
    # -  # ***  LSUR     SLSUR      NSUR     RETSC
    2            100      0.02      0.05       0.1
  END IWAT-PARM2

  IWAT-PARM3
    <PLS >      IWATER input info: Part 3         ***
    # -  # ***PETMAX    PETMIN
    2              0         0
  END IWAT-PARM3

  IWAT-STATE1
    <PLS > *** Initial conditions at start of simulation
    # -  # ***  RETS      SURS
    2              0         0
  END IWAT-STATE1

END IMPLND

SCHEMATIC
<-Source->                <--Area-->     <-Target->   MBLK   ***
<Name>   #                <-factor->     <Name>   #   Tbl#   ***
Basin  1***
PERLND  58                      33.72     RCHRES   1      2
PERLND  58                      33.72     RCHRES   1      3
PERLND  50                       3.85     RCHRES   1      2
PERLND  50                       3.85     RCHRES   1      3
IMPLND   2                      29.25     RCHRES   1      5
Basin  2***
PERLND  50                      12.16     RCHRES   1      2
PERLND  50                      12.16     RCHRES   1      3

******Routing******
PERLND  58                      33.72     COPY     1     12
PERLND  50                       3.85     COPY     1     12
IMPLND   2                      29.25     COPY     1     15
PERLND  58                      33.72     COPY     1     13
PERLND  50                       3.85     COPY     1     13
PERLND  50                      12.16     COPY     1     12
PERLND  50                      12.16     COPY     1     13
RCHRES   1                          1     COPY   501     16
END SCHEMATIC

NETWORK
<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Target vols> <-Grp> <-Member->  ***
<Name>   #        <Name> # #<-factor->strg <Name>   #   #        <Name> # #  ***
COPY   501 OUTPUT MEAN   1 1   12.1        DISPLY   1     INPUT  TIMSER 1



<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Target vols> <-Grp> <-Member->  ***
<Name>   #        <Name> # #<-factor->strg <Name>   #   #        <Name> # #  ***
END NETWORK

RCHRES
  GEN-INFO
```

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```
    RCHRES       Name        Nexits   Unit Systems   Printer                ***
    # -  #<------------------><---> User T-series  Engl Metr LKFG           ***
                                       in  out                              ***
    1     Combo 5                1    1    1    1   28    0    1
  END GEN-INFO
  *** Section RCHRES***

  ACTIVITY
    <PLS > ************ Active Sections ****************************
    # -  # HYFG ADFG CNFG HTFG SDFG GQFG OXFG NUFG PKFG PHFG ***
    1         1    0    0    0    0    0    0    0    0    0
  END ACTIVITY

  PRINT-INFO
    <PLS > ***************** Print-flags ******************* PIVL  PYR
    # -  # HYDR ADCA CONS HEAT  SED  GQL OXRX NUTR PLNK PHCB PIVL  PYR  *********
    1         4    0    0    0    0    0    0    0    0    0    1    9
  END PRINT-INFO

  HYDR-PARM1
    RCHRES  Flags for each HYDR Section                                    ***
    # -  #  VC A1 A2 A3  ODFVFG for each *** ODGTFG for each     FUNCT  for each
           FG FG FG FG  possible  exit  *** possible  exit      possible  exit
            *  *  *  *    *  *  *  *  *       *  *  *  *  *        ***
    1        0  1  0  0    4  0  0  0  0       0  0  0  0  0        2  2  2  2  2
  END HYDR-PARM1

  HYDR-PARM2
    # -  #    FTABNO       LEN      DELTH     STCOR        KS      DB50       ***
  <------><--------><--------><--------><--------><--------><--------><--------> ***
    1               1      0.01       0.0       0.0       0.5       0.0
  END HYDR-PARM2
  HYDR-INIT
    RCHRES  Initial conditions for each HYDR section                       ***
    # -  # ***   VOL     Initial  value  of COLIND     Initial  value  of OUTDGT
          *** ac-ft     for each possible exit        for each possible exit
  <------><--------> <---><---><---><---><---> *** <---><---><---><---><--->
    1         0        4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
  END HYDR-INIT
END RCHRES

SPEC-ACTIONS
END SPEC-ACTIONS
FTABLES
  FTABLE      1
   98    4
     Depth      Area    Volume  Outflow1 Velocity  Travel Time***
      (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
  0.000000  0.000000  0.000000  0.000000
  0.010000  1.000000  0.010000  0.001000
  0.100000  1.010000  0.100000  0.035000
  0.200000  1.022000  0.201000  0.099000
  0.300000  1.034000  0.304000  0.182000
  0.400000  1.046000  0.408000  0.258000
  0.500000  1.057000  0.513000  0.309000
  0.600000  1.069000  0.620000  0.352000
  0.700000  1.081000  0.727000  0.391000
  0.800000  1.093000  0.836000  0.426000
  0.900000  1.105000  0.946000  0.458000
  1.000000  1.116000  1.057000  0.488000
  1.100000  1.128000  1.169000  0.517000
  1.200000  1.140000  1.282000  0.544000
  1.300000  1.152000  1.397000  0.570000
  1.400000  1.163000  1.513000  0.594000
  1.500000  1.175000  1.630000  0.618000
  1.600000  1.187000  1.748000  0.641000
  1.700000  1.199000  1.867000  0.733000
  1.800000  1.210000  1.987000  0.882000
  1.900000  1.222000  2.109000  1.069000
  2.000000  1.234000  2.231000  1.286000
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2.100000	1.245000	2.355000	1.529000
2.200000	1.257000	2.480000	1.795000
2.300000	1.269000	2.607000	2.082000
2.400000	1.281000	2.734000	2.388000
2.500000	1.292000	2.862000	2.713000
2.600000	1.304000	2.992000	3.055000
2.700000	1.316000	3.123000	3.338000
2.800000	1.327000	3.255000	3.554000
2.900000	1.339000	3.388000	4.240000
3.000000	1.351000	3.523000	5.316000
3.100000	1.362000	3.658000	6.643000
3.200000	1.374000	3.795000	8.174000
3.300000	1.386000	3.933000	9.879000
3.400000	1.397000	4.072000	11.74100
3.500000	1.409000	4.212000	13.74600
3.600000	1.421000	4.354000	15.88300
3.700000	1.432000	4.496000	18.14500
3.800000	1.444000	4.640000	20.52300
3.900000	1.456000	4.785000	23.01300
4.000000	1.467000	4.931000	25.60800
4.100000	1.479000	5.078000	28.30500
4.200000	1.491000	5.226000	31.10000
4.300000	1.502000	5.376000	33.99000
4.400000	1.514000	5.527000	36.97000
4.500000	1.526000	5.679000	40.03900
4.600000	1.537000	5.832000	43.19400
4.700000	1.549000	5.986000	47.44700
4.800000	1.561000	6.141000	51.81400
4.900000	1.572000	6.298000	56.77500
5.000000	1.584000	6.456000	62.20800
5.100000	1.595000	6.615000	68.04900
5.200000	1.607000	6.775000	74.25200
5.300000	1.619000	6.936000	80.78700
5.400000	1.630000	7.098000	87.63000
5.500000	1.642000	7.262000	94.76100
5.600000	1.653000	7.427000	102.1670
5.700000	1.665000	7.593000	109.8320
5.800000	1.677000	7.760000	117.7470
5.900000	1.688000	7.928000	125.9020
6.000000	1.700000	8.097000	134.2880
6.100000	1.711000	8.268000	142.8980
6.200000	1.723000	8.440000	151.7240
6.300000	1.734000	8.613000	160.7610
6.400000	1.746000	8.787000	170.0030
6.500000	1.758000	8.962000	179.4460
6.600000	1.769000	9.138000	189.0830
6.700000	1.781000	9.316000	198.9110
6.800000	1.792000	9.495000	208.9260
6.900000	1.804000	9.675000	219.1240
7.000000	1.815000	9.856000	229.5020
7.100000	1.827000	10.03800	240.0550
7.200000	1.838000	10.22200	250.7810
7.300000	1.850000	10.40600	261.6780
7.400000	1.861000	10.59200	272.7410
7.500000	1.873000	10.77900	283.9690
7.600000	1.885000	10.96700	295.3580
7.700000	1.896000	11.15600	306.9070
7.800000	1.908000	11.34700	318.6130
7.900000	1.919000	11.53800	330.4740
8.000000	1.931000	11.73100	342.4870
8.100000	1.942000	11.92500	999.0000
8.200000	1.954000	12.12000	340.8660
8.300000	1.965000	12.31600	353.0080
8.400000	1.977000	12.51400	365.2990
8.500000	1.988000	12.71300	377.7380
8.600000	2.000000	12.91200	390.3220
8.700000	2.011000	13.11300	403.0490
8.800000	2.023000	13.31500	415.9190
8.900000	2.034000	13.51900	428.9280
9.000000	2.045000	13.72300	442.0770

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```
  9.100000  2.057000  13.92900  455.3630
  9.200000  2.068000  14.13600  468.7850
  9.300000  2.080000  14.34400  482.3410
  9.400000  2.091000  14.55300  496.0300
  9.500000  2.103000  14.76300  509.8510
  9.600000  2.114000  14.97400  999.0000
  END FTABLE  1
END FTABLES

EXT SOURCES
<-Volume-> <Member> SsysSgap<--Mult-->Tran <-Target vols> <-Grp> <-Member->  ***
<Name>   # <Name> # tem strg<-factor->strg <Name>   #   #        <Name> # #  ***
WDM      2 PREC     ENGL    1.045          PERLND   1 999 EXTNL  PREC
WDM      2 PREC     ENGL    1.045          IMPLND   1 999 EXTNL  PREC
WDM      1 EVAP     ENGL    1              PERLND   1 999 EXTNL  PETINP
WDM      1 EVAP     ENGL    1              IMPLND   1 999 EXTNL  PETINP
WDM     22 IRRG     ENGL    0.7       SAME PERLND  58     EXTNL  SURLI
WDM      2 PREC     ENGL    1.045          RCHRES   1     EXTNL  PREC
WDM      1 EVAP     ENGL    1              RCHRES   1     EXTNL  POTEV

END EXT SOURCES

EXT TARGETS
<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Volume-> <Member> Tsys Tgap Amd ***
<Name>   #        <Name> # #<-factor->strg <Name>   # <Name>    tem strg strg***
RCHRES   1 HYDR   RO     1 1        1      WDM   1000 FLOW     ENGL      REPL
RCHRES   1 HYDR   STAGE  1 1        1      WDM   1001 STAG     ENGL      REPL
COPY     1 OUTPUT MEAN   1 1     12.1      WDM    701 FLOW     ENGL      REPL
COPY   501 OUTPUT MEAN   1 1     12.1      WDM    801 FLOW     ENGL      REPL
END EXT TARGETS

MASS-LINK
<Volume>   <-Grp> <-Member-><--Mult-->     <Target>       <-Grp> <-Member->***
<Name>             <Name> # #<-factor->     <Name>                <Name> # #***
  MASS-LINK        2
PERLND     PWATER SURO       0.083333      RCHRES         INFLOW IVOL
  END MASS-LINK    2

  MASS-LINK        3
PERLND     PWATER IFWO       0.083333      RCHRES         INFLOW IVOL
  END MASS-LINK    3

  MASS-LINK        5
IMPLND     IWATER SURO       0.083333      RCHRES         INFLOW IVOL
  END MASS-LINK    5

  MASS-LINK       12
PERLND     PWATER SURO       0.083333      COPY           INPUT  MEAN
  END MASS-LINK   12

  MASS-LINK       13
PERLND     PWATER IFWO       0.083333      COPY           INPUT  MEAN
  END MASS-LINK   13

  MASS-LINK       15
IMPLND     IWATER SURO       0.083333      COPY           INPUT  MEAN
  END MASS-LINK   15

  MASS-LINK       16
RCHRES     ROFLOW                          COPY           INPUT  MEAN
  END MASS-LINK   16


END MASS-LINK

END RUN
```

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SAHM

PROJECT REPORT

General Model Information

Project Name: HMB 14_pre-prj
Site Name:
Site Address:
City:
Report Date: 11/27/2013
Gage: ORANGEVA
Data Start: 1964/10/01
Data End: 2004/09/30
Timestep: Hourly
Precip Scale: 1.05
Version: 2013/08/23

POC Thresholds

Low Flow Threshold for POC1:	25 Percent of the 2 Year
High Flow Threshold for POC1:	10 Year

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Landuse Basin Data

Pre-Project Land Use

Basin 1

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
B,Grass,Mod (1-2%)	7.74
D,Grass,Mod (1-2%)	48.87
Pervious Total	56.61

Impervious Land Use	Acres
Impervious Total	0
Basin Total	56.61

Element Flows To:

Surface	Interflow	Groundwater

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Mitigated Land Use

Basin 1

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
B,Urban,Mod (1-2%)	3.22
B,Grass,Mod (1-2%)	4.23
D,Urban,Mod (1-2%)	25.09
D,Grass,Mod (1-2%)	17.17
Pervious Total	49.71

Impervious Land Use	Acres
Imperv,Mod (1-2%)	13.83
Impervious Total	13.83
Basin Total	63.54

Element Flows To:

Surface	Interflow	Groundwater
SSD Table 1	SSD Table 1	

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Mitigated Routing

SSD Table 1

Depth: 9.6 ft.
Element Flows To:
Outlet 1 Outlet 2

SSD Table Hydraulic Table

Stage (ft)	Area (ac)	Volume (ac-ft)	Manual	NotUsed	NotUsed	NotUsed	NotUsed
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.010	0.450	0.004	0.001	0.000	0.000	0.000	0.000
0.100	0.457	0.044	0.039	0.000	0.000	0.000	0.000
0.200	0.465	0.091	0.112	0.000	0.000	0.000	0.000
0.300	0.473	0.138	0.205	0.000	0.000	0.000	0.000
0.400	0.482	0.185	0.291	0.000	0.000	0.000	0.000
0.500	0.490	0.234	0.347	0.000	0.000	0.000	0.000
0.600	0.498	0.283	0.396	0.000	0.000	0.000	0.000
0.700	0.507	0.334	0.440	0.000	0.000	0.000	0.000
0.800	0.515	0.385	0.479	0.000	0.000	0.000	0.000
0.900	0.523	0.437	0.515	0.000	0.000	0.000	0.000
1.000	0.531	0.489	0.549	0.000	0.000	0.000	0.000
1.100	0.540	0.543	0.581	0.000	0.000	0.000	0.000
1.200	0.548	0.597	0.612	0.000	0.000	0.000	0.000
1.300	0.556	0.652	0.641	0.000	0.000	0.000	0.000
1.400	0.564	0.708	0.668	0.000	0.000	0.000	0.000
1.500	0.573	0.765	0.695	0.000	0.000	0.000	0.000
1.600	0.581	0.823	0.721	0.000	0.000	0.000	0.000
1.700	0.589	0.881	0.745	0.000	0.000	0.000	0.000
1.800	0.597	0.940	0.769	0.000	0.000	0.000	0.000
1.900	0.605	1.001	0.792	0.000	0.000	0.000	0.000
2.000	0.614	1.061	0.834	0.000	0.000	0.000	0.000
2.100	0.622	1.123	0.934	0.000	0.000	0.000	0.000
2.200	0.630	1.186	1.066	0.000	0.000	0.000	0.000
2.300	0.638	1.249	1.224	0.000	0.000	0.000	0.000
2.400	0.647	1.313	1.402	0.000	0.000	0.000	0.000
2.500	0.655	1.378	1.579	0.000	0.000	0.000	0.000
2.600	0.663	1.444	1.700	0.000	0.000	0.000	0.000
2.700	0.671	1.511	1.809	0.000	0.000	0.000	0.000
2.800	0.679	1.578	1.909	0.000	0.000	0.000	0.000
2.900	0.688	1.646	2.002	0.000	0.000	0.000	0.000
3.000	0.696	1.715	2.090	0.000	0.000	0.000	0.000
3.100	0.704	1.785	2.173	0.000	0.000	0.000	0.000
3.200	0.712	1.856	2.252	0.000	0.000	0.000	0.000
3.300	0.720	1.927	2.328	0.000	0.000	0.000	0.000
3.400	0.728	2.000	2.401	0.000	0.000	0.000	0.000
3.500	0.737	2.073	2.471	0.000	0.000	0.000	0.000
3.600	0.745	2.147	2.540	0.000	0.000	0.000	0.000
3.700	0.753	2.222	2.606	0.000	0.000	0.000	0.000
3.800	0.761	2.297	2.670	0.000	0.000	0.000	0.000
3.900	0.769	2.374	2.732	0.000	0.000	0.000	0.000
4.000	0.777	2.451	2.793	0.000	0.000	0.000	0.000
4.100	0.786	2.529	3.064	0.000	0.000	0.000	0.000
4.200	0.794	2.608	3.507	0.000	0.000	0.000	0.000
4.300	0.802	2.687	4.062	0.000	0.000	0.000	0.000

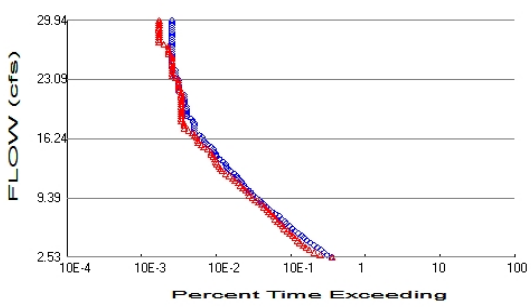
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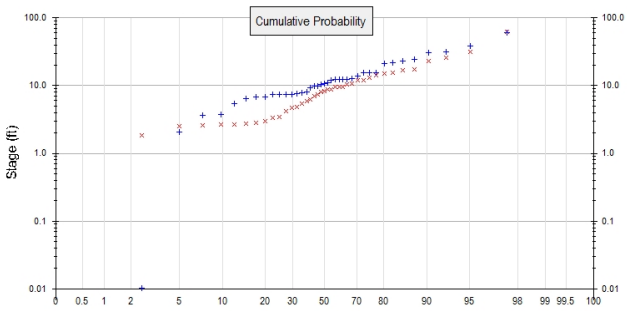
4.400	0.810	2.768	4.709	0.000	0.000	0.000	0.000
4.500	0.818	2.849	5.433	0.000	0.000	0.000	0.000
4.600	0.826	2.931	6.227	0.000	0.000	0.000	0.000
4.700	0.834	3.014	7.085	0.000	0.000	0.000	0.000
4.800	0.843	3.098	8.002	0.000	0.000	0.000	0.000
4.900	0.851	3.183	8.974	0.000	0.000	0.000	0.000
5.000	0.859	3.268	9.997	0.000	0.000	0.000	0.000
5.100	0.867	3.354	11.07	0.000	0.000	0.000	0.000
5.200	0.875	3.442	12.19	0.000	0.000	0.000	0.000
5.300	0.883	3.529	13.36	0.000	0.000	0.000	0.000
5.400	0.891	3.618	14.56	0.000	0.000	0.000	0.000
5.500	0.899	3.708	15.81	0.000	0.000	0.000	0.000
5.600	0.907	3.798	17.10	0.000	0.000	0.000	0.000
5.700	0.915	3.889	18.43	0.000	0.000	0.000	0.000
5.800	0.924	3.981	19.80	0.000	0.000	0.000	0.000
5.900	0.932	4.074	21.20	0.000	0.000	0.000	0.000
6.000	0.940	4.167	22.64	0.000	0.000	0.000	0.000
6.100	0.948	4.262	24.11	0.000	0.000	0.000	0.000
6.200	0.956	4.357	25.62	0.000	0.000	0.000	0.000
6.300	0.964	4.453	27.16	0.000	0.000	0.000	0.000
6.400	0.972	4.550	28.73	0.000	0.000	0.000	0.000
6.500	0.980	4.648	31.21	0.000	0.000	0.000	0.000
6.600	0.988	4.746	33.78	0.000	0.000	0.000	0.000
6.700	0.996	4.846	36.78	0.000	0.000	0.000	0.000
6.800	1.004	4.946	40.11	0.000	0.000	0.000	0.000
6.900	1.012	5.047	43.72	0.000	0.000	0.000	0.000
7.000	1.020	5.148	47.60	0.000	0.000	0.000	0.000
7.100	1.028	5.251	51.71	0.000	0.000	0.000	0.000
7.200	1.036	5.354	56.04	0.000	0.000	0.000	0.000
7.300	1.044	5.459	60.56	0.000	0.000	0.000	0.000
7.400	1.052	5.564	65.28	0.000	0.000	0.000	0.000
7.500	1.060	5.670	70.19	0.000	0.000	0.000	0.000
7.600	1.069	5.776	75.26	0.000	0.000	0.000	0.000
7.700	1.077	5.884	80.51	0.000	0.000	0.000	0.000
7.800	1.085	5.992	85.91	0.000	0.000	0.000	0.000
7.900	1.093	6.101	91.47	0.000	0.000	0.000	0.000
8.000	1.101	6.211	97.17	0.000	0.000	0.000	0.000
8.100	1.109	6.322	103.0	0.000	0.000	0.000	0.000
8.200	1.117	6.434	109.0	0.000	0.000	0.000	0.000
8.300	1.125	6.546	115.2	0.000	0.000	0.000	0.000
8.400	1.133	6.659	121.4	0.000	0.000	0.000	0.000
8.500	1.141	6.773	127.8	0.000	0.000	0.000	0.000
8.600	1.149	6.888	134.3	0.000	0.000	0.000	0.000
8.700	1.157	7.004	141.0	0.000	0.000	0.000	0.000
8.800	1.165	7.120	147.8	0.000	0.000	0.000	0.000
8.900	1.172	7.238	154.7	0.000	0.000	0.000	0.000
9.000	1.180	7.356	161.7	0.000	0.000	0.000	0.000
9.100	1.188	7.475	168.8	0.000	0.000	0.000	0.000
9.200	1.196	7.594	176.0	0.000	0.000	0.000	0.000
9.300	1.204	7.715	183.4	0.000	0.000	0.000	0.000
9.400	1.212	7.836	190.9	0.000	0.000	0.000	0.000
9.500	1.220	7.959	198.4	0.000	0.000	0.000	0.000

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Analysis Results

POC 1





\+ Pre-Project x Mitigated

Pre-Project Landuse Totals for POC #1
Total Pervious Area: 56.61
Total Impervious Area: 0

Mitigated Landuse Totals for POC #1
Total Pervious Area: 49.71
Total Impervious Area: 13.83

Flow Frequency Method: Log Pearson Type III 17B

Flow Frequency Return Periods for Pre-Project. POC #1

Return Period	Flow(cfs)
2 year	10.12969
5 year	20.146973
10 year	29.9434
25 year	43.3947

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Flow Frequency Return Periods for Mitigated. POC #1

Return Period	Flow(cfs)
2 year	7.758956
5 year	14.706849
10 year	22.532746
25 year	37.977534

Annual Peaks

Annual Peaks for Pre-Project and Mitigated. POC #1

Year	Pre-Project	Mitigated
1965	11.034	9.669
1966	3.710	2.545
1967	12.377	13.043
1968	6.861	3.419
1969	12.512	8.173
1970	9.716	9.534
1971	12.349	8.758
1972	3.678	2.841
1973	21.415	12.095
1974	15.640	7.396
1975	7.447	2.706
1976	0.010	1.863
1977	0.010	0.624
1978	31.007	17.004

1979	8.096	4.826
1980	9.394	5.947
1981	7.574	6.992
1982	15.553	14.847
1983	21.558	17.393
1984	10.523	10.304
1985	6.784	5.465
1986	38.756	31.189
1987	7.308	4.209
1988	7.461	9.649
1989	12.369	4.678
1990	7.335	2.667
1991	10.667	8.817
1992	15.282	15.624
1993	12.259	8.140
1994	2.059	2.644
1995	59.888	62.115
1996	23.055	10.806
1997	30.732	25.869
1998	24.263	23.247
1999	6.366	3.389
2000	13.885	14.210
2001	7.923	2.993
2002	5.446	2.590
2003	9.755	6.159
2004	11.934	11.838

Ranked Annual Peaks

Ranked Annual Peaks for Pre-Project and Mitigated. POC #1

Rank	Pre-Project	Mitigated
1	59.8875	62.1149
2	38.7561	31.1889
3	31.0066	25.8692
4	30.7324	23.2466
5	24.2626	17.3930
6	23.0547	17.0043
7	21.5580	15.6238
8	21.4147	14.8467
9	15.6395	14.2096
10	15.5530	13.0428
11	15.2818	12.0953
12	13.8851	11.8382
13	12.5117	10.8055
14	12.3774	10.3037
15	12.3685	9.6690
16	12.3489	9.6491
17	12.2585	9.5343
18	11.9339	8.8167
19	11.0342	8.7581
20	10.6668	8.1730
21	10.5226	8.1399
22	9.7555	7.3962
23	9.7155	6.9925
24	9.3944	6.1590
25	8.0962	5.9467
26	7.9226	5.4651
27	7.5738	4.8257
28	7.4612	4.6782

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29	7.4466	4.2090
30	7.3354	3.4186
31	7.3079	3.3892
32	6.8606	2.9930
33	6.7840	2.8414
34	6.3656	2.7057
35	5.4459	2.6665
36	3.7102	2.6438
37	3.6780	2.5904
38	2.0588	2.5453
39	0.0103	1.8632
40	0.0101	0.6236

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Duration Flows

The Facility PASSED

Flow(cfs)	Predev	Mit	Percentage	Pass/Fail
2.5324	1229	1259	102	Pass
2.8093	1075	868	80	Pass
3.0862	976	724	74	Pass
3.3631	877	626	71	Pass
3.6399	795	564	70	Pass
3.9168	723	512	70	Pass
4.1937	635	469	73	Pass
4.4706	578	435	75	Pass
4.7475	527	397	75	Pass
5.0243	487	370	75	Pass
5.3012	440	340	77	Pass
5.5781	397	320	80	Pass
5.8550	368	288	78	Pass
6.1318	339	271	79	Pass
6.4087	306	254	83	Pass
6.6856	290	233	80	Pass
6.9625	264	217	82	Pass
7.2394	248	206	83	Pass
7.5162	218	188	86	Pass
7.7931	198	177	89	Pass
8.0700	181	167	92	Pass
8.3469	165	154	93	Pass
8.6238	153	143	93	Pass
8.9006	140	129	92	Pass
9.1775	133	117	87	Pass
9.4544	119	107	89	Pass
9.7313	109	98	89	Pass
10.0081	102	94	92	Pass
10.2850	95	87	91	Pass
10.5619	87	79	90	Pass
10.8388	83	75	90	Pass
11.1157	78	69	88	Pass
11.3925	74	62	83	Pass
11.6694	69	58	84	Pass
11.9463	66	53	80	Pass
12.2232	62	47	75	Pass
12.5001	54	42	77	Pass
12.7769	50	40	80	Pass
13.0538	48	38	79	Pass
13.3307	47	36	76	Pass
13.6076	44	35	79	Pass
13.8844	39	34	87	Pass
14.1613	36	32	88	Pass
14.4382	35	30	85	Pass
14.7151	33	30	90	Pass
14.9920	32	27	84	Pass
15.2688	30	24	80	Pass
15.5457	27	22	81	Pass
15.8226	25	20	80	Pass
16.0995	24	20	83	Pass
16.3764	23	19	82	Pass
16.6532	21	18	85	Pass
16.9301	18	17	94	Pass

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17.2070	18	15	83	Pass
17.4839	18	13	72	Pass
17.7607	18	13	72	Pass
18.0376	18	13	72	Pass
18.3145	17	12	70	Pass
18.5914	16	12	75	Pass
18.8683	14	12	85	Pass
19.1451	14	12	85	Pass
19.4220	14	12	85	Pass
19.6989	14	12	85	Pass
19.9758	14	12	85	Pass
20.2527	13	12	92	Pass
20.5295	13	12	92	Pass
20.8064	13	12	92	Pass
21.0833	13	12	92	Pass
21.3602	13	12	92	Pass
21.6370	11	12	109	Pass
21.9139	11	11	100	Pass
22.1908	11	11	100	Pass
22.4677	11	11	100	Pass
22.7446	11	11	100	Pass
23.0214	11	11	100	Pass
23.2983	10	10	100	Pass
23.5752	10	9	90	Pass
23.8521	10	9	90	Pass
24.1290	10	9	90	Pass
24.4058	9	9	100	Pass
24.6827	9	9	100	Pass
24.9596	9	9	100	Pass
25.2365	9	9	100	Pass
25.5133	9	9	100	Pass
25.7902	9	9	100	Pass
26.0671	9	8	88	Pass
26.3440	9	8	88	Pass
26.6209	9	8	88	Pass
26.8977	9	8	88	Pass
27.1746	9	7	77	Pass
27.4515	9	6	66	Pass
27.7284	9	6	66	Pass
28.0053	9	6	66	Pass
28.2821	9	6	66	Pass
28.5590	9	6	66	Pass
28.8359	9	6	66	Pass
29.1128	9	6	66	Pass
29.3896	9	6	66	Pass
29.6665	9	6	66	Pass
29.9434	9	6	66	Pass

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Model Default Modifications

Total of 0 changes have been made.

PERLND Changes

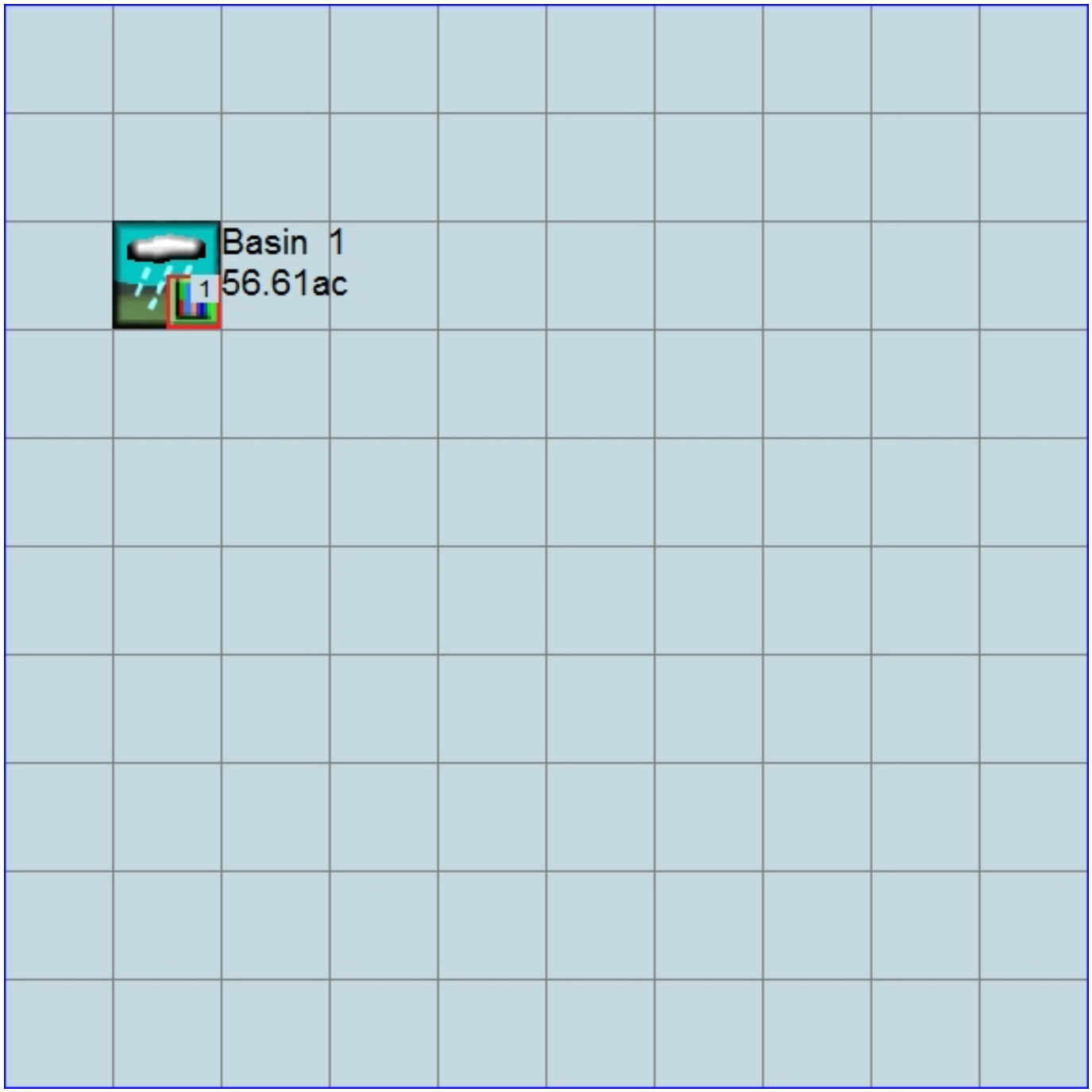
No PERLND changes have been made.

IMPLND Changes

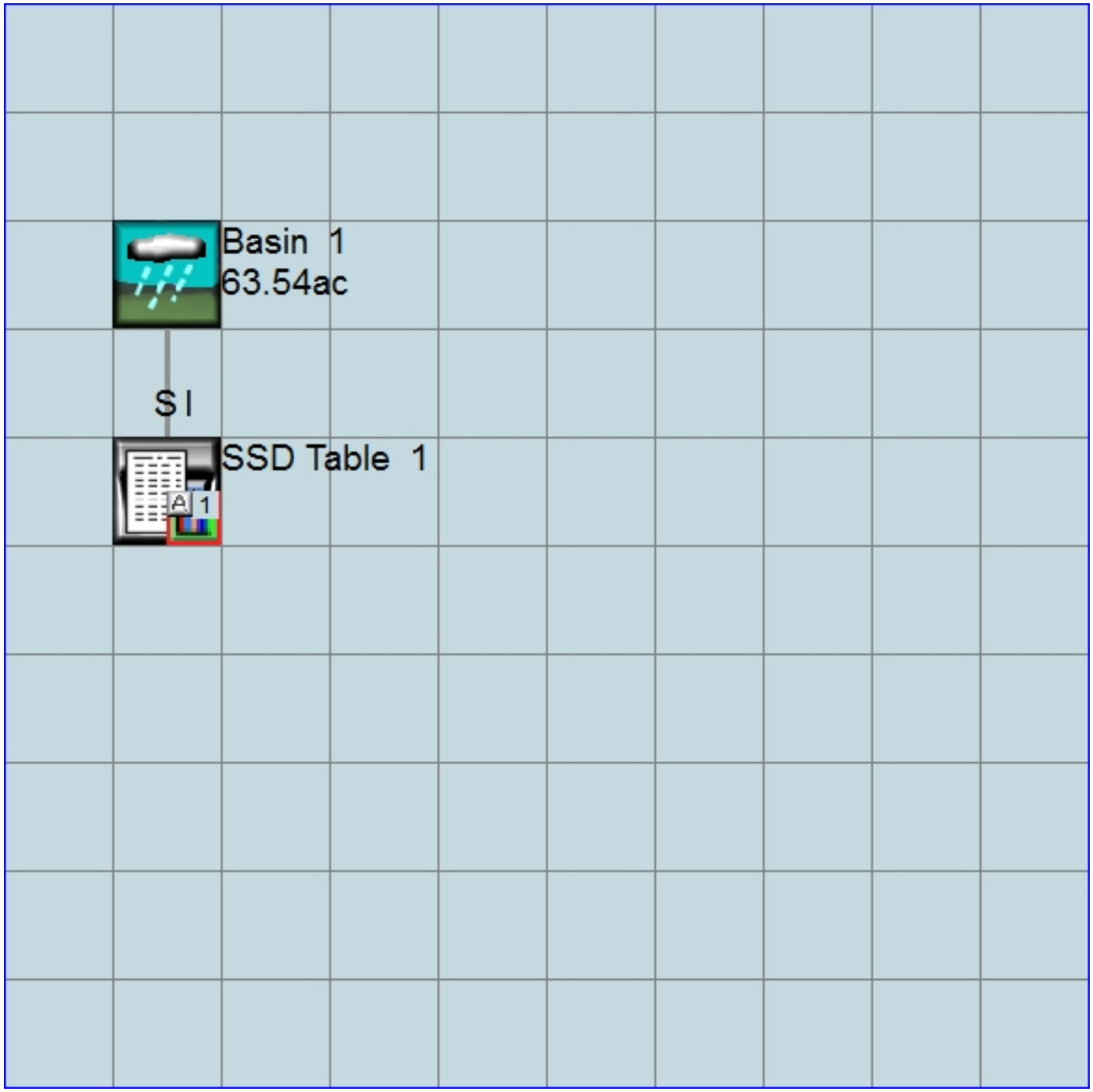
No IMPLND changes have been made.

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Appendix
Pre-Project Schematic



Mitigated Schematic



Pre-Project UCI File

```
RUN

GLOBAL
  WWHM4 model simulation
  START       1964 10 01        END    2004 09 30
  RUN INTERP OUTPUT LEVEL    3    0
  RESUME     0 RUN     1                    UNIT SYSTEM     1
END GLOBAL

FILES
<File>  <Un#>   <-----------File Name------------------------------>***
<-ID->                                                              ***
WDM         26   HMB 14_pre-prj.wdm
MESSU       25   PreHMB 14_pre-prj.MES
            27   PreHMB 14_pre-prj.L61
            28   PreHMB 14_pre-prj.L62
            30   POCHMB 14_pre-prj1.dat
END FILES

OPN SEQUENCE
    INGRP               INDELT 00:60
      PERLND      18
      PERLND      50
      COPY       501
      DISPLY       1
    END INGRP
END OPN SEQUENCE
DISPLY
  DISPLY-INFO1
    # -  #<----------Title---------->***TRAN PIVL DIG1 FIL1  PYR DIG2 FIL2 YRND
    1        Basin  1                  MAX                    1    2   30    9
  END DISPLY-INFO1
END DISPLY
COPY
  TIMESERIES
    # -  #  NPT  NMN ***
    1         1    1
  501         1    1
  END TIMESERIES
END COPY
GENER
  OPCODE
    #    # OPCD ***
  END OPCODE
  PARM
    #    #         K ***
  END PARM
END GENER
PERLND
  GEN-INFO
    <PLS ><-------Name------->NBLKS   Unit-systems   Printer ***
    # -  #                          User  t-series Engl Metr ***
                                       in  out           ***
   18     B,Grass,Mod (1-2%)      1    1    1    1   27    0
   50     D,Grass,Mod (1-2%)      1    1    1    1   27    0
  END GEN-INFO
  *** Section PWATER***

  ACTIVITY
    <PLS > ************ Active Sections ****************************
    # -  # ATMP SNOW PWAT  SED  PST  PWG PQAL MSTL PEST NITR PHOS TRAC ***
   18         0    0    1    0    0    0    0    0    0    0    0    0
   50         0    0    1    0    0    0    0    0    0    0    0    0
  END ACTIVITY

  PRINT-INFO
    <PLS > ***************** Print-flags **************************** PIVL  PYR
    # -  # ATMP SNOW PWAT  SED  PST  PWG PQAL MSTL PEST NITR PHOS TRAC  *********
```

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```
   18         0    0    4    0    0    0    0    0    0    0    0    0    1    9
   50         0    0    4    0    0    0    0    0    0    0    0    0    1    9
  END PRINT-INFO

  PWAT-PARM1
    <PLS >  PWATER variable monthly parameter value flags  ***
    # -  # CSNO RTOP UZFG  VCS  VUZ  VNN VIFW VIRC  VLE INFC  HWT ***
   18         0    0    0    1    0    0    0    0    1    0    0
   50         0    0    0    1    0    0    0    0    1    0    0
  END PWAT-PARM1

  PWAT-PARM2
    <PLS >      PWATER input info: Part 2         ***
    # -  # ***FOREST      LZSN    INFILT      LSUR     SLSUR     KVARY     AGWRC
   18              0      4.65      0.06       400      0.02         3      0.92
   50              0      4.35     0.028       400      0.02         3      0.92
  END PWAT-PARM2

  PWAT-PARM3
    <PLS >      PWATER input info: Part 3         ***
    # -  # ***PETMAX    PETMIN    INFEXP    INFILD    DEEPFR    BASETP    AGWETP
   18             40        35         2         2         0         0      0.05
   50             40        35         2         2         0         0      0.05
  END PWAT-PARM3
  PWAT-PARM4
    <PLS >     PWATER input info: Part 4                              ***
    # -  #     CEPSC      UZSN      NSUR     INTFW       IRC     LZETP ***
   18              0      0.33      0.25      1.45      0.48         0
   50              0      0.28      0.25      0.65      0.48         0
  END PWAT-PARM4
  MON-LZETPARM
    <PLS >      PWATER input info: Part 3         ***
    # -  #  JAN  FEB  MAR  APR  MAY  JUN  JUL  AUG  SEP  OCT  NOV  DEC  ***
   18       0.4  0.4  0.4 0.45  0.5 0.55 0.55 0.55 0.55 0.55 0.45  0.4
   50       0.4  0.4  0.4 0.45  0.5 0.55 0.55 0.55 0.55 0.55 0.45  0.4
  END MON-LZETPARM
  MON-INTERCEP
    <PLS >      PWATER input info: Part 3         ***
    # -  #  JAN  FEB  MAR  APR  MAY  JUN  JUL  AUG  SEP  OCT  NOV  DEC  ***
   18      0.12 0.12 0.12 0.11  0.1  0.1  0.1  0.1  0.1  0.1 0.11 0.12
   50      0.12 0.12 0.12 0.11  0.1  0.1  0.1  0.1  0.1  0.1 0.11 0.12
  END MON-INTERCEP

  PWAT-STATE1
    <PLS > *** Initial conditions at start of simulation
               ran from 1990 to end of 1992 (pat 1-11-95) RUN 21 ***
    # -  # ***  CEPS      SURS       UZS      IFWS       LZS      AGWS       GWVS
   18              0         0      0.15         0         4      0.05          0
   50              0         0      0.15         0         4      0.05          0
  END PWAT-STATE1

END PERLND

IMPLND
  GEN-INFO
    <PLS ><-------Name------->   Unit-systems   Printer ***
    # -  #                     User  t-series Engl Metr ***
                                     in  out           ***
  END GEN-INFO
  *** Section IWATER***

  ACTIVITY
    <PLS > ************ Active Sections ******************************
    # -  # ATMP SNOW IWAT  SLD  IWG IQAL   ***
  END ACTIVITY

  PRINT-INFO
    <ILS > ******** Print-flags ******** PIVL  PYR
    # -  # ATMP SNOW IWAT  SLD  IWG IQAL    *********
  END PRINT-INFO
```

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```
  IWAT-PARM1
    <PLS >  IWATER variable monthly parameter value flags  ***
    # -  # CSNO RTOP  VRS  VNN RTLI     ***
  END IWAT-PARM1

  IWAT-PARM2
    <PLS >      IWATER input info: Part 2         ***
    # -  # ***  LSUR     SLSUR      NSUR     RETSC
  END IWAT-PARM2

  IWAT-PARM3
    <PLS >      IWATER input info: Part 3         ***
    # -  # ***PETMAX    PETMIN
  END IWAT-PARM3

  IWAT-STATE1
    <PLS > *** Initial conditions at start of simulation
    # -  # ***  RETS      SURS
  END IWAT-STATE1

END IMPLND

SCHEMATIC
<-Source->                 <--Area-->     <-Target->   MBLK    ***
<Name>   #                 <-factor->     <Name>   #   Tbl#    ***
Basin  1***
PERLND  18                      7.74      COPY   501      12
PERLND  18                      7.74      COPY   501      13
PERLND  50                     48.87      COPY   501      12
PERLND  50                     48.87      COPY   501      13

******Routing******
END SCHEMATIC

NETWORK
<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Target vols> <-Grp> <-Member->  ***
<Name>   #        <Name> # #<-factor->strg <Name>   #   #        <Name> # #  ***
COPY   501 OUTPUT MEAN   1 1   12.1        DISPLY   1     INPUT  TIMSER 1



<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Target vols> <-Grp> <-Member->  ***
<Name>   #        <Name> # #<-factor->strg <Name>   #   #        <Name> # #  ***
END NETWORK

RCHRES
  GEN-INFO
    RCHRES       Name        Nexits   Unit Systems   Printer                ***
    # -  #<----------------><---> User T-series  Engl Metr LKFG             ***
                                      in  out                               ***
  END GEN-INFO
  *** Section RCHRES***

  ACTIVITY
    <PLS > ************ Active Sections ****************************
    # -  # HYFG ADFG CNFG HTFG SDFG GQFG OXFG NUFG PKFG PHFG ***
  END ACTIVITY

  PRINT-INFO
    <PLS > ***************** Print-flags ****************** PIVL  PYR
    # -  # HYDR ADCA CONS HEAT  SED  GQL OXRX NUTR PLNK PHCB PIVL  PYR  *********
  END PRINT-INFO

  HYDR-PARM1
    RCHRES  Flags for each HYDR Section                                 ***
    # -  #  VC A1 A2 A3  ODFVFG for each *** ODGTFG for each     FUNCT  for each
            FG FG FG FG  possible  exit  *** possible  exit      possible  exit
             *  *  *  *    *  *  *  *  *       *  *  *  *  *        ***
  END HYDR-PARM1
```

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```
  HYDR-PARM2
    # -  #    FTABNO       LEN     DELTH     STCOR        KS      DB50       ***
  <------><--------><--------><--------><--------><--------><--------><--------> ***
  END HYDR-PARM2
  HYDR-INIT
    RCHRES  Initial conditions for each HYDR section                          ***
    # -  # ***   VOL     Initial  value  of COLIND     Initial  value  of OUTDGT
         *** ac-ft     for each possible exit        for each possible exit
  <------><-------->     <---><---><---><---><---> *** <---><---><---><---><--->
  END HYDR-INIT
END RCHRES

SPEC-ACTIONS
END SPEC-ACTIONS
FTABLES
END FTABLES

EXT SOURCES
<-Volume-> <Member> SsysSgap<--Mult-->Tran <-Target vols> <-Grp> <-Member->  ***
<Name>   # <Name> # tem strg<-factor->strg <Name>   #   #        <Name> # #  ***
WDM      2 PREC     ENGL    1.045          PERLND   1 999 EXTNL  PREC
WDM      2 PREC     ENGL    1.045          IMPLND   1 999 EXTNL  PREC
WDM      1 EVAP     ENGL    1              PERLND   1 999 EXTNL  PETINP
WDM      1 EVAP     ENGL    1              IMPLND   1 999 EXTNL  PETINP

END EXT SOURCES

EXT TARGETS
<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Volume-> <Member> Tsys Tgap Amd ***
<Name>   #        <Name> # #<-factor->strg <Name>   # <Name>    tem strg strg***
COPY   501 OUTPUT MEAN   1 1     12.1      WDM    501 FLOW     ENGL      REPL
END EXT TARGETS

MASS-LINK
<Volume>   <-Grp> <-Member-><--Mult-->     <Target>       <-Grp> <-Member->***
<Name>            <Name> # #<-factor->     <Name>                <Name> # #***
  MASS-LINK       12
PERLND     PWATER SURO       0.083333      COPY           INPUT  MEAN
  END MASS-LINK   12

  MASS-LINK       13
PERLND     PWATER IFWO       0.083333      COPY           INPUT  MEAN
  END MASS-LINK   13


END MASS-LINK

END RUN
```

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Mitigated UCI File

```
RUN

GLOBAL
  WWHM4 model simulation
  START       1964 10 01        END    2004 09 30
  RUN INTERP OUTPUT LEVEL    3    0
  RESUME     0 RUN     1                    UNIT SYSTEM     1
END GLOBAL

FILES
<File>  <Un#>   <-----------File Name------------------------------>***
<-ID->                                                              ***
WDM         26   HMB 14_pre-prj.wdm
MESSU       25   MitHMB 14_pre-prj.MES
            27   MitHMB 14_pre-prj.L61
            28   MitHMB 14_pre-prj.L62
            30   POCHMB 14_pre-prj1.dat
END FILES

OPN SEQUENCE
    INGRP               INDELT 00:60
      PERLND      26
      PERLND      18
      PERLND      58
      PERLND      50
      IMPLND       2
      RCHRES       1
      COPY         1
      COPY       501
      DISPLY       1
    END INGRP
END OPN SEQUENCE
DISPLY
  DISPLY-INFO1
    # -  #<----------Title---------->***TRAN PIVL DIG1 FIL1  PYR DIG2 FIL2 YRND
    1        SSD Table  1               MAX                    1    2   30    9
  END DISPLY-INFO1
END DISPLY
COPY
  TIMESERIES
    # -  #  NPT  NMN ***
    1         1    1
  501         1    1
  END TIMESERIES
END COPY
GENER
  OPCODE
    #    # OPCD ***
  END OPCODE
  PARM
    #    #         K ***
  END PARM
END GENER
PERLND
  GEN-INFO
    <PLS ><-------Name------->NBLKS   Unit-systems   Printer ***
    # -  #                          User  t-series Engl Metr ***
                                          in  out           ***
   26     B,Urban,Mod (1-2%)      1    1    1    1   27    0
   18     B,Grass,Mod (1-2%)      1    1    1    1   27    0
   58     D,Urban,Mod (1-2%)      1    1    1    1   27    0
   50     D,Grass,Mod (1-2%)      1    1    1    1   27    0
  END GEN-INFO
  *** Section PWATER***

  ACTIVITY
    <PLS > ************ Active Sections ******************************
    # -  # ATMP SNOW PWAT  SED  PST  PWG PQAL MSTL PEST NITR PHOS TRAC ***
```

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```
 26         0    0    1    0    0    0    0    0    0    0    0    0
 18         0    0    1    0    0    0    0    0    0    0    0    0
 58         0    0    1    0    0    0    0    0    0    0    0    0
 50         0    0    1    0    0    0    0    0    0    0    0    0
END ACTIVITY

PRINT-INFO
  <PLS > ***************** Print-flags **************************** PIVL  PYR
  # -  # ATMP SNOW PWAT  SED  PST  PWG PQAL MSTL PEST NITR PHOS TRAC  *********
 26         0    0    4    0    0    0    0    0    0    0    0    0    1    9
 18         0    0    4    0    0    0    0    0    0    0    0    0    1    9
 58         0    0    4    0    0    0    0    0    0    0    0    0    1    9
 50         0    0    4    0    0    0    0    0    0    0    0    0    1    9
END PRINT-INFO

PWAT-PARM1
  <PLS >  PWATER variable monthly parameter value flags  ***
  # -  # CSNO RTOP UZFG  VCS  VUZ  VNN VIFW VIRC  VLE INFC  HWT ***
 26         0    0    0    1    0    0    0    0    1    0    0
 18         0    0    0    1    0    0    0    0    1    0    0
 58         0    0    0    1    0    0    0    0    1    0    0
 50         0    0    0    1    0    0    0    0    1    0    0
END PWAT-PARM1

PWAT-PARM2
  <PLS >      PWATER input info: Part 2          ***
  # -  # ***FOREST      LZSN    INFILT      LSUR     SLSUR      KVARY      AGWRC
 26              0      4.55     0.045       400      0.02          3       0.92
 18              0      4.65      0.06       400      0.02          3       0.92
 58              0       4.4     0.018       400      0.02          3       0.92
 50              0      4.35     0.028       400      0.02          3       0.92
END PWAT-PARM2

PWAT-PARM3
  <PLS >      PWATER input info: Part 3          ***
  # -  # ***PETMAX    PETMIN    INFEXP    INFILD    DEEPFR    BASETP    AGWETP
 26             40        35         2         2         0         0      0.05
 18             40        35         2         2         0         0      0.05
 58             40        35         2         2         0         0      0.05
 50             40        35         2         2         0         0      0.05
END PWAT-PARM3
PWAT-PARM4
  <PLS >     PWATER input info: Part 4                                  ***
  # -  #     CEPSC      UZSN      NSUR     INTFW       IRC     LZETP ***
 26              0      0.33      0.25       0.9      0.38         0
 18              0      0.33      0.25      1.45      0.48         0
 58              0      0.28      0.25      0.48      0.38         0
 50              0      0.28      0.25      0.65      0.48         0
END PWAT-PARM4
MON-LZETPARM
  <PLS >      PWATER input info: Part 3          ***
  # -  #  JAN  FEB  MAR  APR  MAY  JUN  JUL  AUG  SEP  OCT  NOV  DEC  ***
 26       0.5  0.5  0.5  0.6 0.65 0.65 0.65 0.65 0.65 0.65 0.55  0.5
 18       0.4  0.4  0.4 0.45  0.5 0.55 0.55 0.55 0.55 0.55 0.45  0.4
 58       0.5  0.5  0.5  0.6 0.65 0.65 0.65 0.65 0.65 0.65 0.55  0.5
 50       0.4  0.4  0.4 0.45  0.5 0.55 0.55 0.55 0.55 0.55 0.45  0.4
END MON-LZETPARM
MON-INTERCEP
  <PLS >      PWATER input info: Part 3          ***
  # -  #  JAN  FEB  MAR  APR  MAY  JUN  JUL  AUG  SEP  OCT  NOV  DEC  ***
 26      0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11
 18      0.12 0.12 0.12 0.11  0.1  0.1  0.1  0.1  0.1  0.1 0.11 0.12
 58      0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11
 50      0.12 0.12 0.12 0.11  0.1  0.1  0.1  0.1  0.1  0.1 0.11 0.12
END MON-INTERCEP

PWAT-STATE1
  <PLS > *** Initial conditions at start of simulation
             ran from 1990 to end of 1992 (pat 1-11-95) RUN 21 ***
  # -  # ***  CEPS      SURS       UZS      IFWS       LZS       AGWS      GWVS
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   26             0         0      0.15         0         4      0.05         0
   18             0         0      0.15         0         4      0.05         0
   58             0         0      0.15         0         4      0.05         0
   50             0         0      0.15         0         4      0.05         0
  END PWAT-STATE1

END PERLND

IMPLND
  GEN-INFO
    <PLS ><-------Name------->   Unit-systems   Printer ***
    # -  #                     User  t-series Engl Metr ***
                                      in  out           ***
    2     Imperv,Mod (1-2%)       1    1    1   27    0
  END GEN-INFO
  *** Section IWATER***

  ACTIVITY
    <PLS > ************* Active Sections ******************************
    # -  # ATMP SNOW IWAT  SLD  IWG IQAL    ***
    2         0    0    1    0    0    0
  END ACTIVITY

  PRINT-INFO
    <ILS > ******** Print-flags ******** PIVL  PYR
    # -  # ATMP SNOW IWAT  SLD  IWG IQAL     *********
    2         0    0    4    0    0    0    1    9
  END PRINT-INFO

  IWAT-PARM1
    <PLS >  IWATER variable monthly parameter value flags  ***
    # -  # CSNO RTOP  VRS  VNN RTLI      ***
    2         0    0    0    0    0
  END IWAT-PARM1

  IWAT-PARM2
    <PLS >      IWATER input info: Part 2         ***
    # -  # ***  LSUR      SLSUR      NSUR     RETSC
    2           100       0.02      0.05       0.1
  END IWAT-PARM2

  IWAT-PARM3
    <PLS >      IWATER input info: Part 3         ***
    # -  # ***PETMAX    PETMIN
    2              0         0
  END IWAT-PARM3

  IWAT-STATE1
    <PLS > *** Initial conditions at start of simulation
    # -  # ***  RETS      SURS
    2              0         0
  END IWAT-STATE1

END IMPLND

SCHEMATIC
<-Source->                 <--Area-->     <-Target->   MBLK   ***
<Name>   #                 <-factor->     <Name>   #   Tbl#   ***
Basin  1***
PERLND  26                      3.22     RCHRES   1      2
PERLND  26                      3.22     RCHRES   1      3
PERLND  18                      4.23     RCHRES   1      2
PERLND  18                      4.23     RCHRES   1      3
PERLND  58                     25.09     RCHRES   1      2
PERLND  58                     25.09     RCHRES   1      3
PERLND  50                     17.17     RCHRES   1      2
PERLND  50                     17.17     RCHRES   1      3
IMPLND   2                     13.83     RCHRES   1      5

******Routing******
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```
PERLND  26                        3.22     COPY     1     12
PERLND  18                        4.23     COPY     1     12
PERLND  58                       25.09     COPY     1     12
PERLND  50                       17.17     COPY     1     12
IMPLND   2                       13.83     COPY     1     15
PERLND  26                        3.22     COPY     1     13
PERLND  18                        4.23     COPY     1     13
PERLND  58                       25.09     COPY     1     13
PERLND  50                       17.17     COPY     1     13
RCHRES   1                           1     COPY   501     16
END SCHEMATIC

NETWORK
<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Target vols> <-Grp> <-Member->  ***
<Name>   #        <Name> # #<-factor->strg <Name>   #   #        <Name> # #  ***
COPY   501 OUTPUT MEAN   1 1   12.1        DISPLY   1     INPUT  TIMSER 1



<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Target vols> <-Grp> <-Member->  ***
<Name>   #        <Name> # #<-factor->strg <Name>   #   #        <Name> # #  ***
END NETWORK

RCHRES
  GEN-INFO
    RCHRES       Name        Nexits   Unit Systems   Printer                ***
    # -  #<------------------><---> User T-series  Engl Metr LKFG           ***
                                      in  out                               ***
    1     SSD Table  1            1     1    1    1   28    0    1
  END GEN-INFO
  *** Section RCHRES***

  ACTIVITY
    <PLS > ************ Active Sections ******************************
    # -  # HYFG ADFG CNFG HTFG SDFG GQFG OXFG NUFG PKFG PHFG ***
    1         1    0    0    0    0    0    0    0    0    0
  END ACTIVITY

  PRINT-INFO
    <PLS > ***************** Print-flags ****************** PIVL  PYR
    # -  # HYDR ADCA CONS HEAT  SED  GQL OXRX NUTR PLNK PHCB PIVL  PYR  *********
    1         4    0    0    0    0    0    0    0    0    0    1    9
  END PRINT-INFO

  HYDR-PARM1
    RCHRES  Flags for each HYDR Section                                   ***
    # -  #  VC A1 A2 A3  ODFVFG for each *** ODGTFG for each     FUNCT  for each
            FG FG FG FG  possible  exit  *** possible  exit      possible  exit
             *  *  *  *    *  *  *  *  *       *  *  *  *  *         ***
    1        0  1  0  0    4  0  0  0  0       0  0  0  0  0       2  2  2  2  2
  END HYDR-PARM1

  HYDR-PARM2
    # -  #    FTABNO       LEN     DELTH     STCOR        KS      DB50       ***
  <------><--------><--------><--------><--------><--------><--------><--------> ***
    1             1      0.01       0.0       0.0       0.5       0.0
  END HYDR-PARM2
  HYDR-INIT
    RCHRES  Initial conditions for each HYDR section                      ***
    # -  # ***   VOL     Initial  value  of COLIND     Initial  value  of OUTDGT
          *** ac-ft     for each possible exit        for each possible exit
  <------><-------->     <---><---><---><---><---> *** <---><---><---><---><--->
    1         0            4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
  END HYDR-INIT
END RCHRES

SPEC-ACTIONS
END SPEC-ACTIONS
FTABLES
  FTABLE      1
```

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98 4

Depth (ft)	Area (acres)	Volume (acre-ft)	Outflow1 (cfs)	Velocity (ft/sec)	Travel Time*** (Minutes)***
0.000000	0.000000	0.000000	0.000000		
0.010000	0.450000	0.004000	0.001000		
0.100000	0.457000	0.044000	0.039000		
0.200000	0.465000	0.091000	0.112000		
0.300000	0.473000	0.138000	0.205000		
0.400000	0.482000	0.185000	0.291000		
0.500000	0.490000	0.234000	0.347000		
0.600000	0.498000	0.283000	0.396000		
0.700000	0.507000	0.334000	0.440000		
0.800000	0.515000	0.385000	0.479000		
0.900000	0.523000	0.437000	0.515000		
1.000000	0.531000	0.489000	0.549000		
1.100000	0.540000	0.543000	0.581000		
1.200000	0.548000	0.597000	0.612000		
1.300000	0.556000	0.652000	0.641000		
1.400000	0.564000	0.708000	0.668000		
1.500000	0.573000	0.765000	0.695000		
1.600000	0.581000	0.823000	0.721000		
1.700000	0.589000	0.881000	0.745000		
1.800000	0.597000	0.940000	0.769000		
1.900000	0.605000	1.001000	0.792000		
2.000000	0.614000	1.061000	0.834000		
2.100000	0.622000	1.123000	0.934000		
2.200000	0.630000	1.186000	1.066000		
2.300000	0.638000	1.249000	1.224000		
2.400000	0.647000	1.313000	1.402000		
2.500000	0.655000	1.378000	1.579000		
2.600000	0.663000	1.444000	1.700000		
2.700000	0.671000	1.511000	1.809000		
2.800000	0.679000	1.578000	1.909000		
2.900000	0.688000	1.646000	2.002000		
3.000000	0.696000	1.715000	2.090000		
3.100000	0.704000	1.785000	2.173000		
3.200000	0.712000	1.856000	2.252000		
3.300000	0.720000	1.927000	2.328000		
3.400000	0.728000	2.000000	2.401000		
3.500000	0.737000	2.073000	2.471000		
3.600000	0.745000	2.147000	2.540000		
3.700000	0.753000	2.222000	2.606000		
3.800000	0.761000	2.297000	2.670000		
3.900000	0.769000	2.374000	2.732000		
4.000000	0.777000	2.451000	2.793000		
4.100000	0.786000	2.529000	3.064000		
4.200000	0.794000	2.608000	3.507000		
4.300000	0.802000	2.687000	4.062000		
4.400000	0.810000	2.768000	4.709000		
4.500000	0.818000	2.849000	5.433000		
4.600000	0.826000	2.931000	6.227000		
4.700000	0.834000	3.014000	7.085000		
4.800000	0.843000	3.098000	8.002000		
4.900000	0.851000	3.183000	8.974000		
5.000000	0.859000	3.268000	9.997000		
5.100000	0.867000	3.354000	11.07000		
5.200000	0.875000	3.442000	12.19000		
5.300000	0.883000	3.529000	13.35500		
5.400000	0.891000	3.618000	14.56300		
5.500000	0.899000	3.708000	15.81200		
5.600000	0.907000	3.798000	17.10100		
5.700000	0.915000	3.889000	18.43000		
5.800000	0.924000	3.981000	19.79600		
5.900000	0.932000	4.074000	21.19900		
6.000000	0.940000	4.167000	22.63800		
6.100000	0.948000	4.262000	24.11100		
6.200000	0.956000	4.357000	25.61800		
6.300000	0.964000	4.453000	27.15900		
6.400000	0.972000	4.550000	28.73200		
6.500000	0.980000	4.648000	31.20500		

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```
  6.600000  0.988000  4.746000  33.78100
  6.700000  0.996000  4.846000  36.77600
  6.800000  1.004000  4.946000  40.10600
  6.900000  1.012000  5.047000  43.72400
  7.000000  1.020000  5.148000  47.60000
  7.100000  1.028000  5.251000  51.70900
  7.200000  1.036000  5.354000  56.03500
  7.300000  1.044000  5.459000  60.56400
  7.400000  1.052000  5.564000  65.28400
  7.500000  1.060000  5.670000  70.18600
  7.600000  1.069000  5.776000  75.26200
  7.700000  1.077000  5.884000  80.50500
  7.800000  1.085000  5.992000  85.90700
  7.900000  1.093000  6.101000  91.46500
  8.000000  1.101000  6.211000  97.17300
  8.100000  1.109000  6.322000  103.0260
  8.200000  1.117000  6.434000  109.0200
  8.300000  1.125000  6.546000  115.1520
  8.400000  1.133000  6.659000  121.4170
  8.500000  1.141000  6.773000  127.8140
  8.600000  1.149000  6.888000  134.3390
  8.700000  1.157000  7.004000  140.9890
  8.800000  1.165000  7.120000  147.7620
  8.900000  1.172000  7.238000  154.6550
  9.000000  1.180000  7.356000  161.6660
  9.100000  1.188000  7.475000  168.7930
  9.200000  1.196000  7.594000  176.0340
  9.300000  1.204000  7.715000  183.3870
  9.400000  1.212000  7.836000  190.8500
  9.500000  1.220000  7.959000  198.4210
  9.600000  1.228000  8.082000  999.0000
  END FTABLE  1
END FTABLES

EXT SOURCES
<-Volume-> <Member> SsysSgap<--Mult-->Tran <-Target vols> <-Grp> <-Member->  ***
<Name>   # <Name> # tem strg<-factor->strg <Name>   #   #        <Name> # #  ***
WDM      2 PREC     ENGL    1.045          PERLND   1 999 EXTNL  PREC
WDM      2 PREC     ENGL    1.045          IMPLND   1 999 EXTNL  PREC
WDM      1 EVAP     ENGL    1              PERLND   1 999 EXTNL  PETINP
WDM      1 EVAP     ENGL    1              IMPLND   1 999 EXTNL  PETINP
WDM     22 IRRG     ENGL    0.7       SAME PERLND  26     EXTNL  SURLI
WDM     22 IRRG     ENGL    0.7       SAME PERLND  58     EXTNL  SURLI
WDM      2 PREC     ENGL    1.045          RCHRES   1     EXTNL  PREC
WDM      1 EVAP     ENGL    1              RCHRES   1     EXTNL  POTEV

END EXT SOURCES

EXT TARGETS
<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Volume-> <Member> Tsys Tgap Amd ***
<Name>   #        <Name> # #<-factor->strg <Name>   # <Name>    tem strg strg***
RCHRES   1 HYDR   RO     1 1        1      WDM   1000 FLOW     ENGL      REPL
RCHRES   1 HYDR   STAGE  1 1        1      WDM   1001 STAG     ENGL      REPL
COPY     1 OUTPUT MEAN   1 1     12.1      WDM    701 FLOW     ENGL      REPL
COPY   501 OUTPUT MEAN   1 1     12.1      WDM    801 FLOW     ENGL      REPL
END EXT TARGETS

MASS-LINK
<Volume>   <-Grp> <-Member-><--Mult-->     <Target>       <-Grp> <-Member->***
<Name>            <Name> # #<-factor->     <Name>                <Name> # #***
  MASS-LINK        2
PERLND     PWATER SURO       0.083333      RCHRES         INFLOW IVOL
  END MASS-LINK    2

  MASS-LINK        3
PERLND     PWATER IFWO       0.083333      RCHRES         INFLOW IVOL
  END MASS-LINK    3

  MASS-LINK        5
IMPLND     IWATER SURO       0.083333      RCHRES         INFLOW IVOL
```

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```
  END MASS-LINK    5

  MASS-LINK       12
PERLND     PWATER SURO       0.083333      COPY           INPUT  MEAN
  END MASS-LINK   12

  MASS-LINK       13
PERLND     PWATER IFWO       0.083333      COPY           INPUT  MEAN
  END MASS-LINK   13

  MASS-LINK       15
IMPLND     IWATER SURO       0.083333      COPY           INPUT  MEAN
  END MASS-LINK   15

  MASS-LINK       16
RCHRES     ROFLOW                          COPY           INPUT  MEAN
  END MASS-LINK   16


END MASS-LINK

END RUN
```

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PROJECT REPORT

General Model Information

Project Name: HMB 15_pre_10-31-13 update
Site Name:
Site Address:
City:
Report Date: 11/27/2013
Gage: ORANGEVA
Data Start: 1964/10/01
Data End: 2004/09/30
Timestep: Hourly
Precip Scale: 1.05
Version: 2013/08/23

POC Thresholds

Low Flow Threshold for POC1:	25 Percent of the 2 Year
High Flow Threshold for POC1:	10 Year

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Landuse Basin Data

Pre-Project Land Use

Basin 1

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
C,Grass,Mod (1-2%)	3.6
D,Grass,Mod (1-2%)	26.54
Pervious Total	30.14

Impervious Land Use	Acres
Impervious Total	0
Basin Total	30.14

Element Flows To:

Surface	Interflow	Groundwater

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Mitigated Land Use

Basin 1

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
C,Urban,Mod (1-2%)	3.4
D,Urban,Mod (1-2%)	22.67
D,Grass,Mod (1-2%)	3.44
Pervious Total	29.51

Impervious Land Use	Acres
Imperv,Mod (1-2%)	17.93
Impervious Total	17.93
Basin Total	47.44

Element Flows To:

Surface	Interflow	Groundwater
HMB 15	HMB 15	

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Mitigated Routing

HMB 15

Depth: 10.1 ft.
Element Flows To:
Outlet 1 Outlet 2

SSD Table Hydraulic Table

Stage (ft)	Area (ac)	Volume (ac-ft)	Manual	NotUsed	NotUsed	NotUsed	NotUsed
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.010	0.500	0.005	0.001	0.000	0.000	0.000	0.000
0.100	0.510	0.050	0.031	0.000	0.000	0.000	0.000
0.200	0.520	0.102	0.087	0.000	0.000	0.000	0.000
0.300	0.530	0.155	0.147	0.000	0.000	0.000	0.000
0.400	0.540	0.208	0.184	0.000	0.000	0.000	0.000
0.500	0.550	0.263	0.215	0.000	0.000	0.000	0.000
0.600	0.560	0.318	0.242	0.000	0.000	0.000	0.000
0.700	0.570	0.375	0.266	0.000	0.000	0.000	0.000
0.800	0.580	0.432	0.288	0.000	0.000	0.000	0.000
0.900	0.590	0.491	0.309	0.000	0.000	0.000	0.000
1.000	0.600	0.550	0.328	0.000	0.000	0.000	0.000
1.100	0.610	0.611	0.347	0.000	0.000	0.000	0.000
1.200	0.620	0.672	0.364	0.000	0.000	0.000	0.000
1.300	0.630	0.735	0.381	0.000	0.000	0.000	0.000
1.400	0.640	0.798	0.396	0.000	0.000	0.000	0.000
1.500	0.650	0.863	0.412	0.000	0.000	0.000	0.000
1.600	0.660	0.928	0.426	0.000	0.000	0.000	0.000
1.700	0.670	0.995	0.441	0.000	0.000	0.000	0.000
1.800	0.680	1.062	0.454	0.000	0.000	0.000	0.000
1.900	0.690	1.131	0.468	0.000	0.000	0.000	0.000
2.000	0.700	1.200	0.507	0.000	0.000	0.000	0.000
2.100	0.710	1.271	0.568	0.000	0.000	0.000	0.000
2.200	0.720	1.342	0.632	0.000	0.000	0.000	0.000
2.300	0.730	1.415	0.676	0.000	0.000	0.000	0.000
2.400	0.740	1.488	0.714	0.000	0.000	0.000	0.000
2.500	0.750	1.563	0.748	0.000	0.000	0.000	0.000
2.600	0.760	1.638	0.781	0.000	0.000	0.000	0.000
2.700	0.770	1.715	0.811	0.000	0.000	0.000	0.000
2.800	0.780	1.792	0.839	0.000	0.000	0.000	0.000
2.900	0.790	1.871	0.866	0.000	0.000	0.000	0.000
3.000	0.800	1.950	0.892	0.000	0.000	0.000	0.000
3.100	0.810	2.031	0.918	0.000	0.000	0.000	0.000
3.200	0.820	2.112	0.942	0.000	0.000	0.000	0.000
3.300	0.830	2.195	0.965	0.000	0.000	0.000	0.000
3.400	0.840	2.278	0.988	0.000	0.000	0.000	0.000
3.500	0.850	2.363	1.010	0.000	0.000	0.000	0.000
3.600	0.860	2.448	1.032	0.000	0.000	0.000	0.000
3.700	0.870	2.535	1.053	0.000	0.000	0.000	0.000
3.800	0.880	2.622	1.074	0.000	0.000	0.000	0.000
3.900	0.890	2.711	1.094	0.000	0.000	0.000	0.000
4.000	0.900	2.800	1.114	0.000	0.000	0.000	0.000
4.100	0.910	2.891	1.133	0.000	0.000	0.000	0.000
4.200	0.920	2.982	1.153	0.000	0.000	0.000	0.000
4.300	0.930	3.075	1.171	0.000	0.000	0.000	0.000

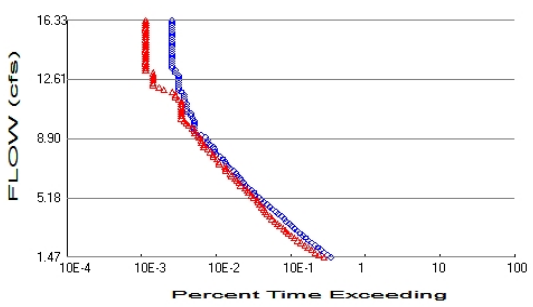
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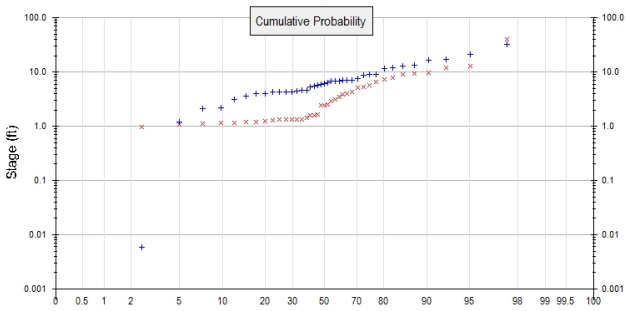
4.400	0.940	3.168	1.190	0.000	0.000	0.000	0.000
4.500	0.950	3.263	1.208	0.000	0.000	0.000	0.000
4.600	0.960	3.358	1.226	0.000	0.000	0.000	0.000
4.700	0.970	3.455	1.243	0.000	0.000	0.000	0.000
4.800	0.980	3.552	1.260	0.000	0.000	0.000	0.000
4.900	0.990	3.651	1.277	0.000	0.000	0.000	0.000
5.000	1.000	3.750	1.294	0.000	0.000	0.000	0.000
5.100	1.010	3.851	1.311	0.000	0.000	0.000	0.000
5.200	1.020	3.952	1.327	0.000	0.000	0.000	0.000
5.300	1.030	4.055	1.343	0.000	0.000	0.000	0.000
5.400	1.040	4.158	1.359	0.000	0.000	0.000	0.000
5.500	1.050	4.263	1.428	0.000	0.000	0.000	0.000
5.600	1.060	4.368	1.539	0.000	0.000	0.000	0.000
5.700	1.070	4.475	1.679	0.000	0.000	0.000	0.000
5.800	1.080	4.582	1.842	0.000	0.000	0.000	0.000
5.900	1.090	4.691	2.025	0.000	0.000	0.000	0.000
6.000	1.100	4.800	2.225	0.000	0.000	0.000	0.000
6.100	1.110	4.911	2.441	0.000	0.000	0.000	0.000
6.200	1.120	5.022	2.672	0.000	0.000	0.000	0.000
6.300	1.130	5.135	2.916	0.000	0.000	0.000	0.000
6.400	1.140	5.248	3.174	0.000	0.000	0.000	0.000
6.500	1.150	5.363	3.444	0.000	0.000	0.000	0.000
6.600	1.160	5.478	3.726	0.000	0.000	0.000	0.000
6.700	1.170	5.595	4.019	0.000	0.000	0.000	0.000
6.800	1.180	5.712	4.323	0.000	0.000	0.000	0.000
6.900	1.190	5.831	4.637	0.000	0.000	0.000	0.000
7.000	1.200	5.950	4.962	0.000	0.000	0.000	0.000
7.100	1.210	6.071	5.296	0.000	0.000	0.000	0.000
7.200	1.220	6.192	5.639	0.000	0.000	0.000	0.000
7.300	1.230	6.315	5.992	0.000	0.000	0.000	0.000
7.400	1.240	6.438	6.354	0.000	0.000	0.000	0.000
7.500	1.250	6.563	6.725	0.000	0.000	0.000	0.000
7.600	1.260	6.688	7.104	0.000	0.000	0.000	0.000
7.700	1.270	6.815	7.491	0.000	0.000	0.000	0.000
7.800	1.280	6.942	7.886	0.000	0.000	0.000	0.000
7.900	1.290	7.071	8.290	0.000	0.000	0.000	0.000
8.000	1.300	7.200	8.701	0.000	0.000	0.000	0.000
8.200	1.320	7.462	9.547	0.000	0.000	0.000	0.000
8.400	1.340	7.728	10.42	0.000	0.000	0.000	0.000
8.600	1.360	7.998	11.33	0.000	0.000	0.000	0.000
8.800	1.380	8.272	12.26	0.000	0.000	0.000	0.000
9.000	1.400	8.550	13.21	0.000	0.000	0.000	0.000
9.200	1.420	8.832	14.20	0.000	0.000	0.000	0.000
9.400	1.440	9.118	15.21	0.000	0.000	0.000	0.000
9.600	1.460	9.408	16.24	0.000	0.000	0.000	0.000
9.800	1.480	9.702	20.84	0.000	0.000	0.000	0.000
10.000	1.500	10.000	28.05	0.000	0.000	0.000	0.000
10.10	1.520	10.30	999.0	0.000	0.000	0.000	0.000

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Analysis Results

POC 1





\+ Pre-Project x Mitigated

Pre-Project Landuse Totals for POC #1
Total Pervious Area: 30.14
Total Impervious Area: 0

Mitigated Landuse Totals for POC #1
Total Pervious Area: 29.51
Total Impervious Area: 17.93

Flow Frequency Method: Log Pearson Type III 17B

Flow Frequency Return Periods for Pre-Project. POC #1

Return Period	Flow(cfs)
2 year	5.869941
5 year	11.145542
10 year	16.327188
25 year	23.457317

Flow Frequency Return Periods for Mitigated. POC #1

Return Period	Flow(cfs)
2 year	2.008553
5 year	7.073519
10 year	9.688143
25 year	19.008273

Annual Peaks

Annual Peaks for Pre-Project and Mitigated. POC #1

Year	Pre-Project	Mitigated
1965	6.232	5.393
1966	2.173	1.149
1967	7.061	7.233
1968	4.055	1.178
1969	7.049	3.794
1970	5.549	2.502
1971	6.973	5.703
1972	2.115	1.630
1973	11.743	2.406
1974	9.023	1.334
1975	4.369	1.164
1976	0.006	0.961
1977	0.006	0.458
1978	16.964	6.506

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1979	4.648	1.570
1980	5.353	1.572
1981	4.420	2.438
1982	8.914	7.728
1983	11.854	9.262
1984	5.987	4.029
1985	3.929	1.326
1986	20.994	12.168
1987	4.317	1.325
1988	4.362	3.478
1989	6.924	1.323
1990	4.280	1.068
1991	6.079	1.341
1992	8.653	5.037
1993	6.822	2.890
1994	1.193	1.220
1995	32.217	40.258
1996	12.883	4.341
1997	16.765	9.747
1998	13.174	13.032
1999	3.657	1.303
2000	7.694	9.063
2001	4.664	1.115
2002	3.154	1.215
2003	5.758	1.417
2004	6.772	3.156

Ranked Annual Peaks

Ranked Annual Peaks for Pre-Project and Mitigated. POC #1

Rank	Pre-Project	Mitigated
1	32.2172	40.2576
2	20.9936	13.0319
3	16.9640	12.1678
4	16.7652	9.7473
5	13.1735	9.2622
6	12.8831	9.0633
7	11.8537	7.7285
8	11.7426	7.2330
9	9.0227	6.5064
10	8.9139	5.7030
11	8.6530	5.3931
12	7.6943	5.0368
13	7.0610	4.3409
14	7.0494	4.0293
15	6.9727	3.7939
16	6.9242	3.4776
17	6.8223	3.1562
18	6.7724	2.8898
19	6.2319	2.5019
20	6.0786	2.4376
21	5.9873	2.4062
22	5.7582	1.6299
23	5.5492	1.5720
24	5.3534	1.5695
25	4.6644	1.4175
26	4.6479	1.3413
27	4.4200	1.3342
28	4.3688	1.3256

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29	4.3620	1.3248
30	4.3171	1.3231
31	4.2799	1.3027
32	4.0555	1.2201
33	3.9291	1.2149
34	3.6574	1.1778
35	3.1541	1.1641
36	2.1730	1.1493
37	2.1153	1.1148
38	1.1930	1.0683
39	0.0058	0.9615
40	0.0057	0.4578

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Duration Flows

The Facility PASSED

Flow(cfs)	Predev	Mit	Percentage	Pass/Fail
1.4675	1218	972	79	Pass
1.6176	1085	838	77	Pass
1.7677	983	740	75	Pass
1.9178	890	666	74	Pass
2.0679	815	597	73	Pass
2.2180	745	544	73	Pass
2.3681	670	483	72	Pass
2.5182	602	436	72	Pass
2.6683	555	387	69	Pass
2.8184	513	360	70	Pass
2.9685	470	325	69	Pass
3.1186	426	301	70	Pass
3.2687	392	283	72	Pass
3.4188	360	251	69	Pass
3.5689	334	231	69	Pass
3.7190	304	213	70	Pass
3.8691	288	197	68	Pass
4.0192	263	183	69	Pass
4.1692	240	168	70	Pass
4.3193	221	161	72	Pass
4.4694	200	153	76	Pass
4.6195	183	145	79	Pass
4.7696	168	134	79	Pass
4.9197	151	128	84	Pass
5.0698	140	124	88	Pass
5.2199	132	111	84	Pass
5.3700	118	104	88	Pass
5.5201	113	95	84	Pass
5.6702	105	91	86	Pass
5.8203	93	86	92	Pass
5.9704	87	75	86	Pass
6.1205	81	71	87	Pass
6.2706	77	66	85	Pass
6.4207	74	63	85	Pass
6.5708	69	57	82	Pass
6.7209	65	54	83	Pass
6.8710	60	47	78	Pass
7.0211	54	47	87	Pass
7.1712	50	46	92	Pass
7.3213	48	39	81	Pass
7.4714	46	38	82	Pass
7.6215	43	36	83	Pass
7.7716	40	32	80	Pass
7.9217	35	32	91	Pass
8.0718	34	29	85	Pass
8.2219	33	27	81	Pass
8.3720	32	24	75	Pass
8.5221	29	24	82	Pass
8.6722	27	22	81	Pass
8.8223	27	22	81	Pass
8.9724	25	21	84	Pass
9.1225	22	20	90	Pass
9.2726	18	18	100	Pass

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9.4227	18	18	100	Pass
9.5728	18	17	94	Pass
9.7229	18	15	83	Pass
9.8730	18	14	77	Pass
10.0231	18	13	72	Pass
10.1732	17	12	70	Pass
10.3233	16	12	75	Pass
10.4734	16	12	75	Pass
10.6235	14	12	85	Pass
10.7736	14	12	85	Pass
10.9237	14	12	85	Pass
11.0738	14	12	85	Pass
11.2239	13	12	92	Pass
11.3740	13	11	84	Pass
11.5241	13	10	76	Pass
11.6741	13	10	76	Pass
11.8242	12	9	75	Pass
11.9743	11	7	63	Pass
12.1244	11	6	54	Pass
12.2745	11	5	45	Pass
12.4246	11	5	45	Pass
12.5747	11	5	45	Pass
12.7248	11	5	45	Pass
12.8749	11	5	45	Pass
13.0250	10	5	50	Pass
13.1751	10	4	40	Pass
13.3252	9	4	44	Pass
13.4753	9	4	44	Pass
13.6254	9	4	44	Pass
13.7755	9	4	44	Pass
13.9256	9	4	44	Pass
14.0757	9	4	44	Pass
14.2258	9	4	44	Pass
14.3759	9	4	44	Pass
14.5260	9	4	44	Pass
14.6761	9	4	44	Pass
14.8262	9	4	44	Pass
14.9763	9	4	44	Pass
15.1264	9	4	44	Pass
15.2765	9	4	44	Pass
15.4266	9	4	44	Pass
15.5767	9	4	44	Pass
15.7268	9	4	44	Pass
15.8769	9	4	44	Pass
16.0270	9	4	44	Pass
16.1771	9	4	44	Pass
16.3272	9	4	44	Pass

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Model Default Modifications

Total of 0 changes have been made.

PERLND Changes

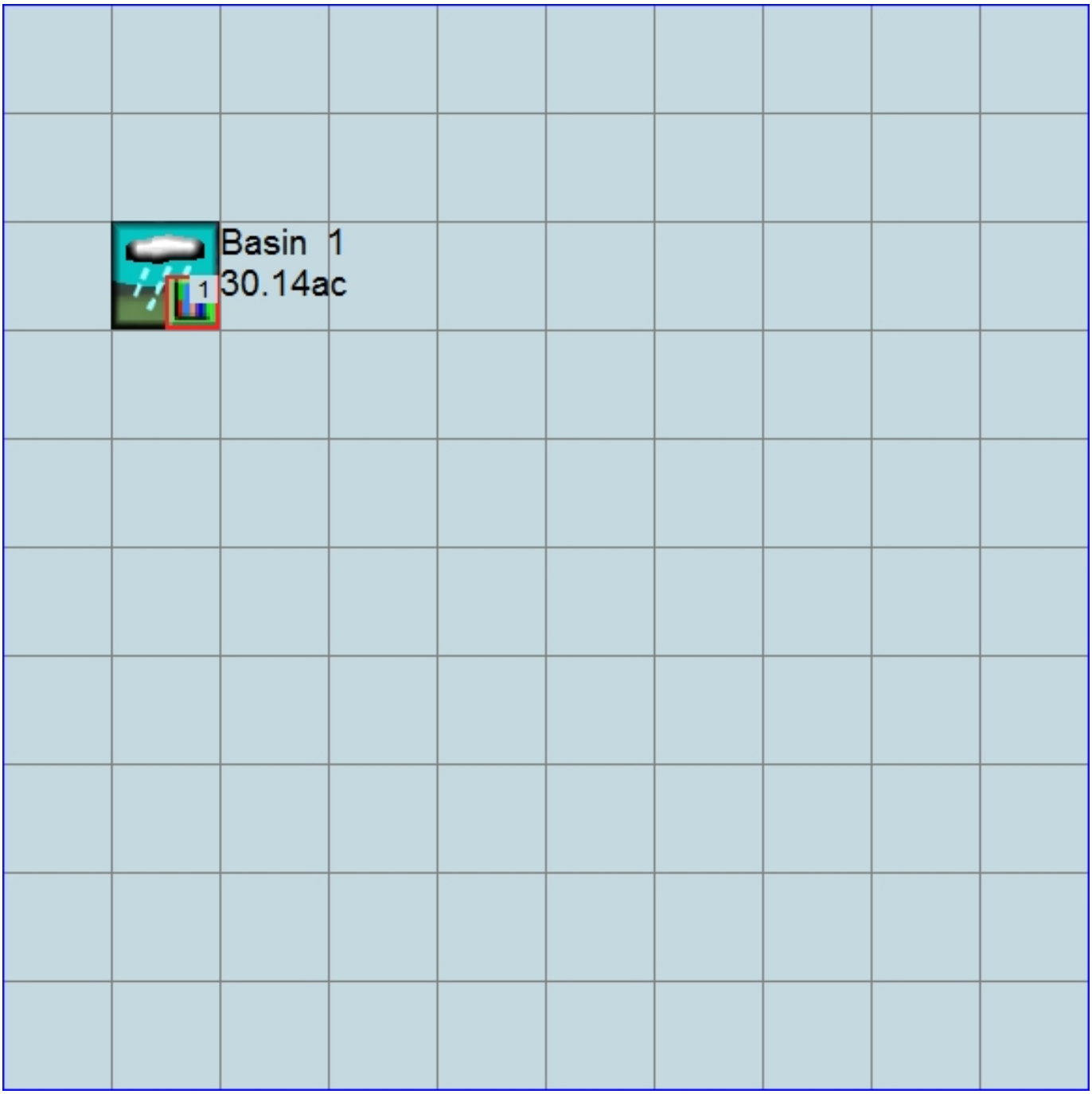
No PERLND changes have been made.

IMPLND Changes

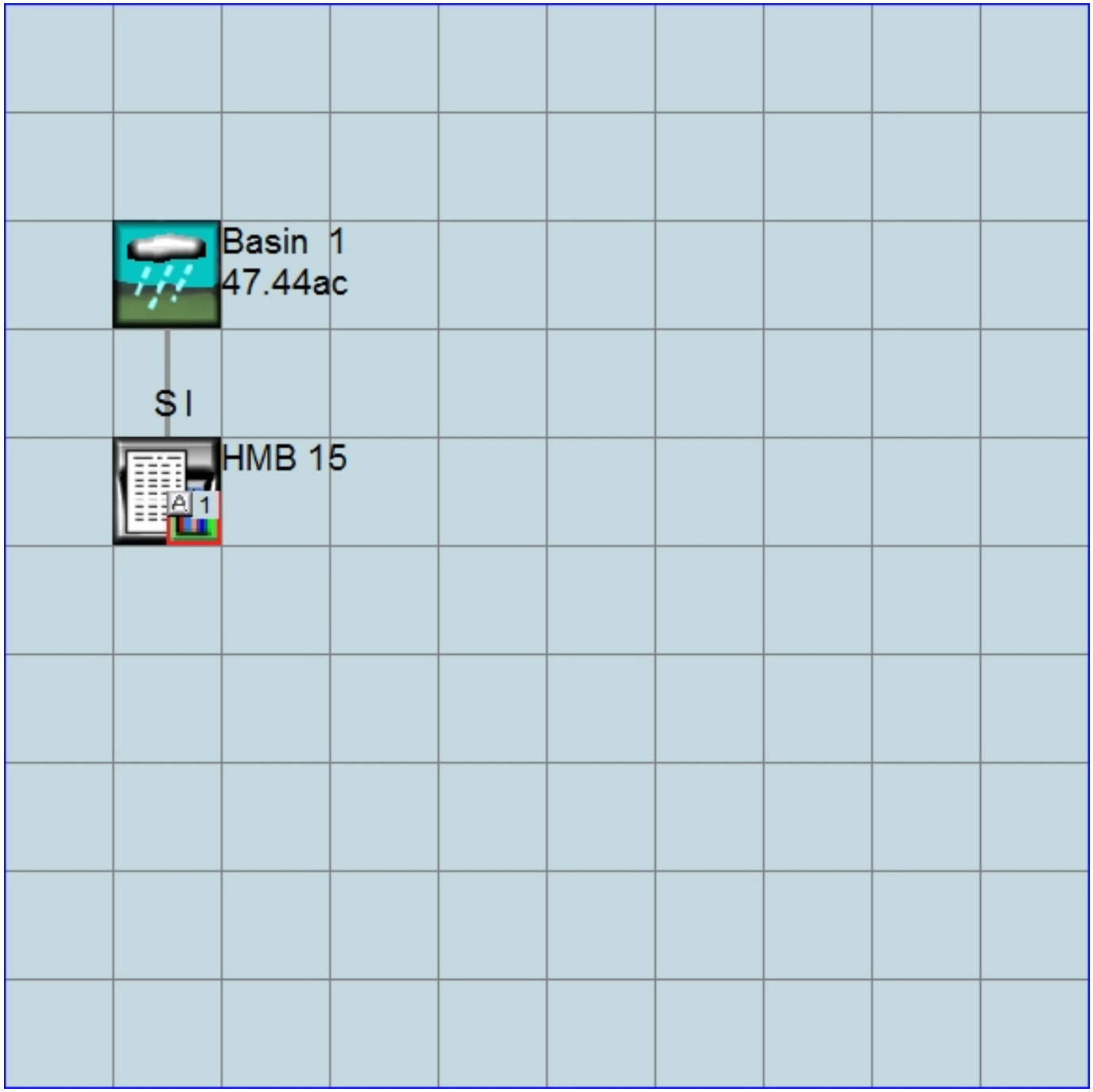
No IMPLND changes have been made.

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Appendix
Pre-Project Schematic



Mitigated Schematic



Pre-Project UCI File

```
RUN

GLOBAL
  WWHM4 model simulation
  START       1964 10 01        END    2004 09 30
  RUN INTERP OUTPUT LEVEL    3    0
  RESUME     0 RUN     1                    UNIT SYSTEM     1
END GLOBAL

FILES
<File>  <Un#>   <-----------File Name------------------------------>***
<-ID->                                                              ***
WDM         26   HMB 15_pre_10-31-13 update.wdm
MESSU       25   PreHMB 15_pre_10-31-13 update.MES
            27   PreHMB 15_pre_10-31-13 update.L61
            28   PreHMB 15_pre_10-31-13 update.L62
            30   POCHMB 15_pre_10-31-13 update1.dat
END FILES

OPN SEQUENCE
    INGRP              INDELT 00:60
      PERLND      34
      PERLND      50
      COPY       501
      DISPLY       1
    END INGRP
END OPN SEQUENCE
DISPLY
  DISPLY-INFO1
    # -  #<----------Title---------->***TRAN PIVL DIG1 FIL1  PYR DIG2 FIL2 YRND
    1        Basin  1                  MAX                    1    2   30    9
  END DISPLY-INFO1
END DISPLY
COPY
  TIMESERIES
    # -  #  NPT  NMN ***
    1         1    1
  501         1    1
  END TIMESERIES
END COPY
GENER
  OPCODE
    #    # OPCD ***
  END OPCODE
  PARM
    #    #         K ***
  END PARM
END GENER
PERLND
  GEN-INFO
    <PLS ><-------Name------->NBLKS   Unit-systems   Printer ***
    # -  #                          User  t-series Engl Metr ***
                                       in  out           ***
   34     C,Grass,Mod (1-2%)      1    1    1    1   27    0
   50     D,Grass,Mod (1-2%)      1    1    1    1   27    0
  END GEN-INFO
  *** Section PWATER***

  ACTIVITY
    <PLS > ************ Active Sections ******************************
    # -  # ATMP SNOW PWAT  SED  PST  PWG PQAL MSTL PEST NITR PHOS TRAC ***
   34         0    0    1    0    0    0    0    0    0    0    0    0
   50         0    0    1    0    0    0    0    0    0    0    0    0
  END ACTIVITY

  PRINT-INFO
    <PLS > ***************** Print-flags ***************************** PIVL  PYR
    # -  # ATMP SNOW PWAT  SED  PST  PWG PQAL MSTL PEST NITR PHOS TRAC  *********
```

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```
   34         0    0    4    0    0    0    0    0    0    0    0    0    1    9
   50         0    0    4    0    0    0    0    0    0    0    0    0    1    9
  END PRINT-INFO

  PWAT-PARM1
    <PLS >  PWATER variable monthly parameter value flags  ***
    # -  # CSNO RTOP UZFG  VCS  VUZ  VNN VIFW VIRC  VLE INFC  HWT ***
   34         0    0    0    1    0    0    0    0    1    0    0
   50         0    0    0    1    0    0    0    0    1    0    0
  END PWAT-PARM1

  PWAT-PARM2
    <PLS >      PWATER input info: Part 2         ***
    # -  # ***FOREST      LZSN    INFILT      LSUR     SLSUR     KVARY     AGWRC
   34              0      4.45     0.043       400      0.02         3      0.92
   50              0      4.35     0.028       400      0.02         3      0.92
  END PWAT-PARM2

  PWAT-PARM3
    <PLS >      PWATER input info: Part 3         ***
    # -  # ***PETMAX    PETMIN    INFEXP    INFILD    DEEPFR    BASETP    AGWETP
   34             40        35         2         2         0         0      0.05
   50             40        35         2         2         0         0      0.05
  END PWAT-PARM3
  PWAT-PARM4
    <PLS >     PWATER input info: Part 4                              ***
    # -  #     CEPSC      UZSN      NSUR     INTFW       IRC     LZETP ***
   34              0      0.28      0.25      0.65      0.48         0
   50              0      0.28      0.25      0.65      0.48         0
  END PWAT-PARM4
  MON-LZETPARM
    <PLS >      PWATER input info: Part 3         ***
    # -  #  JAN  FEB  MAR  APR  MAY  JUN  JUL  AUG  SEP  OCT  NOV  DEC  ***
   34       0.4  0.4  0.4 0.45  0.5 0.55 0.55 0.55 0.55 0.55 0.45  0.4
   50       0.4  0.4  0.4 0.45  0.5 0.55 0.55 0.55 0.55 0.55 0.45  0.4
  END MON-LZETPARM
  MON-INTERCEP
    <PLS >      PWATER input info: Part 3         ***
    # -  #  JAN  FEB  MAR  APR  MAY  JUN  JUL  AUG  SEP  OCT  NOV  DEC  ***
   34      0.12 0.12 0.12 0.11  0.1  0.1  0.1  0.1  0.1  0.1 0.11 0.12
   50      0.12 0.12 0.12 0.11  0.1  0.1  0.1  0.1  0.1  0.1 0.11 0.12
  END MON-INTERCEP

  PWAT-STATE1
    <PLS > *** Initial conditions at start of simulation
               ran from 1990 to end of 1992 (pat 1-11-95) RUN 21 ***
    # -  # ***  CEPS      SURS       UZS      IFWS       LZS      AGWS       GWVS
   34              0         0      0.15         0         4      0.05          0
   50              0         0      0.15         0         4      0.05          0
  END PWAT-STATE1

END PERLND

IMPLND
  GEN-INFO
    <PLS ><-------Name------->   Unit-systems   Printer ***
    # -  #                     User  t-series Engl Metr ***
                                     in  out           ***
  END GEN-INFO
  *** Section IWATER***

  ACTIVITY
    <PLS > ************ Active Sections ******************************
    # -  # ATMP SNOW IWAT  SLD  IWG IQAL   ***
  END ACTIVITY

  PRINT-INFO
    <ILS > ******** Print-flags ******** PIVL  PYR
    # -  # ATMP SNOW IWAT  SLD  IWG IQAL    *********
  END PRINT-INFO
```

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```
  IWAT-PARM1
    <PLS >  IWATER variable monthly parameter value flags  ***
    # -  # CSNO RTOP  VRS  VNN RTLI     ***
  END IWAT-PARM1

  IWAT-PARM2
    <PLS >      IWATER input info: Part 2         ***
    # -  # ***  LSUR     SLSUR      NSUR     RETSC
  END IWAT-PARM2

  IWAT-PARM3
    <PLS >      IWATER input info: Part 3         ***
    # -  # ***PETMAX    PETMIN
  END IWAT-PARM3

  IWAT-STATE1
    <PLS > *** Initial conditions at start of simulation
    # -  # ***  RETS      SURS
  END IWAT-STATE1

END IMPLND

SCHEMATIC
<-Source->                 <--Area-->     <-Target->   MBLK    ***
<Name>   #                 <-factor->     <Name>   #   Tbl#    ***
Basin  1***
PERLND  34                       3.6      COPY   501      12
PERLND  34                       3.6      COPY   501      13
PERLND  50                     26.54      COPY   501      12
PERLND  50                     26.54      COPY   501      13

******Routing******
END SCHEMATIC

NETWORK
<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Target vols> <-Grp> <-Member->  ***
<Name>   #        <Name> # #<-factor->strg <Name>   #   #        <Name> # #  ***
COPY   501 OUTPUT MEAN   1 1   12.1        DISPLY   1     INPUT  TIMSER 1



<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Target vols> <-Grp> <-Member->  ***
<Name>   #        <Name> # #<-factor->strg <Name>   #   #        <Name> # #  ***
END NETWORK

RCHRES
  GEN-INFO
    RCHRES       Name        Nexits   Unit Systems   Printer                ***
    # -  #<----------------><---> User T-series  Engl Metr LKFG             ***
                                      in  out                               ***
  END GEN-INFO
  *** Section RCHRES***

  ACTIVITY
    <PLS > ************ Active Sections ****************************
    # -  # HYFG ADFG CNFG HTFG SDFG GQFG OXFG NUFG PKFG PHFG ***
  END ACTIVITY

  PRINT-INFO
    <PLS > ***************** Print-flags ****************** PIVL  PYR
    # -  # HYDR ADCA CONS HEAT  SED  GQL OXRX NUTR PLNK PHCB PIVL  PYR  *********
  END PRINT-INFO

  HYDR-PARM1
    RCHRES  Flags for each HYDR Section                                 ***
    # -  #  VC A1 A2 A3  ODFVFG for each *** ODGTFG for each     FUNCT  for each
            FG FG FG FG  possible  exit  *** possible  exit      possible  exit
             *  *  *  *    *  *  *  *  *       *  *  *  *  *         ***
  END HYDR-PARM1
```

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```
  HYDR-PARM2
    # -  #    FTABNO       LEN      DELTH     STCOR        KS      DB50       ***
  <------><--------><--------><--------><--------><--------><--------><--------> ***
  END HYDR-PARM2
  HYDR-INIT
    RCHRES  Initial conditions for each HYDR section                            ***
    # -  # ***   VOL     Initial  value  of COLIND     Initial  value  of OUTDGT
         *** ac-ft     for each possible exit        for each possible exit
  <------><-------->     <---><---><---><---><---> *** <---><---><---><---><--->
  END HYDR-INIT
END RCHRES

SPEC-ACTIONS
END SPEC-ACTIONS
FTABLES
END FTABLES

EXT SOURCES
<-Volume-> <Member> SsysSgap<--Mult-->Tran <-Target vols> <-Grp> <-Member->  ***
<Name>   # <Name> # tem strg<-factor->strg <Name>   #   #        <Name> # #  ***
WDM      2 PREC     ENGL    1.045          PERLND   1 999 EXTNL  PREC
WDM      2 PREC     ENGL    1.045          IMPLND   1 999 EXTNL  PREC
WDM      1 EVAP     ENGL    1              PERLND   1 999 EXTNL  PETINP
WDM      1 EVAP     ENGL    1              IMPLND   1 999 EXTNL  PETINP

END EXT SOURCES

EXT TARGETS
<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Volume-> <Member> Tsys Tgap Amd ***
<Name>   #        <Name> # #<-factor->strg <Name>   # <Name>    tem strg strg***
COPY   501 OUTPUT MEAN   1 1     12.1      WDM    501 FLOW     ENGL      REPL
END EXT TARGETS

MASS-LINK
<Volume>   <-Grp> <-Member-><--Mult-->     <Target>       <-Grp> <-Member->***
<Name>            <Name> # #<-factor->     <Name>                <Name> # #***
  MASS-LINK       12
PERLND     PWATER SURO       0.083333      COPY           INPUT  MEAN
  END MASS-LINK   12

  MASS-LINK       13
PERLND     PWATER IFWO       0.083333      COPY           INPUT  MEAN
  END MASS-LINK   13


END MASS-LINK

END RUN
```

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Mitigated UCI File

```
RUN

GLOBAL
  WWHM4 model simulation
  START       1964 10 01        END    2004 09 30
  RUN INTERP OUTPUT LEVEL    3    0
  RESUME     0 RUN     1                   UNIT SYSTEM     1
END GLOBAL

FILES
<File>  <Un#>   <-----------File Name------------------------------>***
<-ID->                                                              ***
WDM         26   HMB 15_pre_10-31-13 update.wdm
MESSU       25   MitHMB 15_pre_10-31-13 update.MES
            27   MitHMB 15_pre_10-31-13 update.L61
            28   MitHMB 15_pre_10-31-13 update.L62
            30   POCHMB 15_pre_10-31-13 update1.dat
END FILES

OPN SEQUENCE
    INGRP               INDELT 00:60
      PERLND      42
      PERLND      58
      PERLND      50
      IMPLND       2
      RCHRES       1
      COPY         1
      COPY       501
      DISPLY       1
    END INGRP
END OPN SEQUENCE
DISPLY
  DISPLY-INFO1
    # -  #<----------Title---------->***TRAN PIVL DIG1 FIL1  PYR DIG2 FIL2 YRND
    1        HMB 15                    MAX                     1    2   30    9
  END DISPLY-INFO1
END DISPLY
COPY
  TIMESERIES
    # -  #  NPT  NMN ***
    1         1    1
  501         1    1
  END TIMESERIES
END COPY
GENER
  OPCODE
    #    # OPCD ***
  END OPCODE
  PARM
    #    #         K ***
  END PARM
END GENER
PERLND
  GEN-INFO
    <PLS ><-------Name------->NBLKS   Unit-systems   Printer ***
    # -  #                          User  t-series Engl Metr ***
                                          in  out            ***
   42     C,Urban,Mod (1-2%)      1    1    1    1   27    0
   58     D,Urban,Mod (1-2%)      1    1    1    1   27    0
   50     D,Grass,Mod (1-2%)      1    1    1    1   27    0
  END GEN-INFO
  *** Section PWATER***

  ACTIVITY
    <PLS > ************ Active Sections ******************************
    # -  # ATMP SNOW PWAT  SED  PST  PWG PQAL MSTL PEST NITR PHOS TRAC ***
   42         0    0    1    0    0    0    0    0    0    0    0    0
   58         0    0    1    0    0    0    0    0    0    0    0    0
```

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```
   50         0    0    1    0    0    0    0    0    0    0    0    0
  END ACTIVITY

  PRINT-INFO
    <PLS > ***************** Print-flags **************************** PIVL  PYR
    # -  # ATMP SNOW PWAT  SED  PST  PWG PQAL MSTL PEST NITR PHOS TRAC  *********
   42         0    0    4    0    0    0    0    0    0    0    0    0    1    9
   58         0    0    4    0    0    0    0    0    0    0    0    0    1    9
   50         0    0    4    0    0    0    0    0    0    0    0    0    1    9
  END PRINT-INFO

  PWAT-PARM1
    <PLS >  PWATER variable monthly parameter value flags  ***
    # -  # CSNO RTOP UZFG  VCS  VUZ  VNN VIFW VIRC  VLE INFC  HWT ***
   42         0    0    0    1    0    0    0    0    1    0    0
   58         0    0    0    1    0    0    0    0    1    0    0
   50         0    0    0    1    0    0    0    0    1    0    0
  END PWAT-PARM1

  PWAT-PARM2
    <PLS >      PWATER input info: Part 2          ***
    # -  # ***FOREST      LZSN    INFILT      LSUR     SLSUR      KVARY      AGWRC
   42              0       4.4      0.03       400      0.02          3       0.92
   58              0       4.4     0.018       400      0.02          3       0.92
   50              0      4.35     0.028       400      0.02          3       0.92
  END PWAT-PARM2

  PWAT-PARM3
    <PLS >      PWATER input info: Part 3          ***
    # -  # ***PETMAX    PETMIN    INFEXP    INFILD    DEEPFR    BASETP    AGWETP
   42             40        35         2         2         0         0      0.05
   58             40        35         2         2         0         0      0.05
   50             40        35         2         2         0         0      0.05
  END PWAT-PARM3
  PWAT-PARM4
    <PLS >     PWATER input info: Part 4                              ***
    # -  #     CEPSC      UZSN      NSUR     INTFW       IRC     LZETP ***
   42              0      0.28      0.25      0.48      0.38         0
   58              0      0.28      0.25      0.48      0.38         0
   50              0      0.28      0.25      0.65      0.48         0
  END PWAT-PARM4
  MON-LZETPARM
    <PLS >      PWATER input info: Part 3          ***
    # -  #  JAN  FEB  MAR  APR  MAY  JUN  JUL  AUG  SEP  OCT  NOV  DEC  ***
   42       0.5  0.5  0.5  0.6 0.65 0.65 0.65 0.65 0.65 0.65 0.55  0.5
   58       0.5  0.5  0.5  0.6 0.65 0.65 0.65 0.65 0.65 0.65 0.55  0.5
   50       0.4  0.4  0.4 0.45  0.5 0.55 0.55 0.55 0.55 0.55 0.45  0.4
  END MON-LZETPARM
  MON-INTERCEP
    <PLS >      PWATER input info: Part 3          ***
    # -  #  JAN  FEB  MAR  APR  MAY  JUN  JUL  AUG  SEP  OCT  NOV  DEC  ***
   42      0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11
   58      0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11
   50      0.12 0.12 0.12 0.11  0.1  0.1  0.1  0.1  0.1  0.1 0.11 0.12
  END MON-INTERCEP

  PWAT-STATE1
    <PLS > *** Initial conditions at start of simulation
               ran from 1990 to end of 1992 (pat 1-11-95) RUN 21 ***
    # -  # ***  CEPS      SURS       UZS      IFWS       LZS      AGWS      GWVS
   42              0         0      0.15         0         4      0.05         0
   58              0         0      0.15         0         4      0.05         0
   50              0         0      0.15         0         4      0.05         0
  END PWAT-STATE1

END PERLND

IMPLND
  GEN-INFO
    <PLS ><-------Name------->   Unit-systems   Printer ***
```

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```
    # -  #                    User  t-series Engl Metr ***
                                  in  out           ***
    2     Imperv,Mod (1-2%)       1    1    1   27    0
  END GEN-INFO
  *** Section IWATER***

  ACTIVITY
    <PLS > ************ Active Sections ******************************
    # -  # ATMP SNOW IWAT  SLD  IWG IQAL    ***
    2         0    0    1    0    0    0
  END ACTIVITY

  PRINT-INFO
    <ILS > ******** Print-flags ******** PIVL  PYR
    # -  # ATMP SNOW IWAT  SLD  IWG IQAL     *********
    2         0    0    4    0    0    0    1    9
  END PRINT-INFO

  IWAT-PARM1
    <PLS >  IWATER variable monthly parameter value flags  ***
    # -  # CSNO RTOP  VRS  VNN RTLI     ***
    2         0    0    0    0    0
  END IWAT-PARM1

  IWAT-PARM2
    <PLS >      IWATER input info: Part 2         ***
    # -  # ***  LSUR     SLSUR      NSUR     RETSC
    2            100      0.02      0.05       0.1
  END IWAT-PARM2

  IWAT-PARM3
    <PLS >      IWATER input info: Part 3         ***
    # -  # ***PETMAX    PETMIN
    2              0         0
  END IWAT-PARM3

  IWAT-STATE1
    <PLS > *** Initial conditions at start of simulation
    # -  # ***  RETS      SURS
    2              0         0
  END IWAT-STATE1

END IMPLND

SCHEMATIC
<-Source->                 <--Area-->     <-Target->   MBLK    ***
<Name>   #                 <-factor->     <Name>   #   Tbl#    ***
Basin  1***
PERLND  42                       3.4     RCHRES   1      2
PERLND  42                       3.4     RCHRES   1      3
PERLND  58                     22.67     RCHRES   1      2
PERLND  58                     22.67     RCHRES   1      3
PERLND  50                      3.44     RCHRES   1      2
PERLND  50                      3.44     RCHRES   1      3
IMPLND   2                     17.93     RCHRES   1      5

******Routing******
PERLND  42                       3.4     COPY     1     12
PERLND  58                     22.67     COPY     1     12
PERLND  50                      3.44     COPY     1     12
IMPLND   2                     17.93     COPY     1     15
PERLND  42                       3.4     COPY     1     13
PERLND  58                     22.67     COPY     1     13
PERLND  50                      3.44     COPY     1     13
RCHRES   1                         1     COPY   501     16
END SCHEMATIC

NETWORK
<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Target vols> <-Grp> <-Member->  ***
<Name>   #        <Name> # #<-factor->strg <Name>   #   #        <Name> # #  ***
```

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```
COPY    501 OUTPUT MEAN    1 1    12.1        DISPLY    1      INPUT  TIMSER 1


<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Target vols> <-Grp> <-Member->  ***
<Name>   #        <Name> # #<-factor->strg <Name>   #   #        <Name> # #  ***
END NETWORK

RCHRES
  GEN-INFO
    RCHRES       Name        Nexits   Unit Systems   Printer                ***
    # -  #<------------------><---> User T-series  Engl Metr LKFG            ***
                                        in  out                              ***
    1     HMB 15                  1    1    1    1   28    0    1
  END GEN-INFO
  *** Section RCHRES***

  ACTIVITY
    <PLS > ************ Active Sections ****************************
    # -  # HYFG ADFG CNFG HTFG SDFG GQFG OXFG NUFG PKFG PHFG ***
    1         1    0    0    0    0    0    0    0    0    0
  END ACTIVITY

  PRINT-INFO
    <PLS > ***************** Print-flags ******************* PIVL  PYR
    # -  # HYDR ADCA CONS HEAT  SED  GQL OXRX NUTR PLNK PHCB PIVL  PYR  *********
    1         4    0    0    0    0    0    0    0    0    0    1    9
  END PRINT-INFO

  HYDR-PARM1
    RCHRES  Flags for each HYDR Section                                  ***
    # -  #  VC A1 A2 A3  ODFVFG for each *** ODGTFG for each     FUNCT  for each
           FG FG FG FG  possible  exit  *** possible  exit      possible  exit
            *  *  *  *     *  *  *  *  *       *  *  *  *  *        ***
    1        0  1  0  0     4  0  0  0  0       0  0  0  0  0        2  2  2  2  2
  END HYDR-PARM1

  HYDR-PARM2
    # -  #    FTABNO       LEN      DELTH     STCOR        KS      DB50       ***
  <------><--------><--------><--------><--------><--------><--------><--------> ***
    1               1      0.01       0.0       0.0       0.5       0.0
  END HYDR-PARM2
  HYDR-INIT
    RCHRES  Initial conditions for each HYDR section                     ***
    # -  # ***   VOL     Initial  value  of COLIND     Initial  value  of OUTDGT
           *** ac-ft     for each possible exit        for each possible exit
  <------><-------->     <---><---><---><---><---> *** <---><---><---><---><--->
    1         0            4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
  END HYDR-INIT
END RCHRES

SPEC-ACTIONS
END SPEC-ACTIONS
FTABLES
  FTABLE      1
   93    4
     Depth      Area    Volume  Outflow1 Velocity  Travel Time***
      (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
  0.000000  0.000000  0.000000  0.000000
  0.010000  0.500000  0.005000  0.001000
  0.100000  0.510000  0.050000  0.031000
  0.200000  0.520000  0.102000  0.087000
  0.300000  0.530000  0.155000  0.147000
  0.400000  0.540000  0.208000  0.184000
  0.500000  0.550000  0.263000  0.215000
  0.600000  0.560000  0.318000  0.242000
  0.700000  0.570000  0.375000  0.266000
  0.800000  0.580000  0.432000  0.288000
  0.900000  0.590000  0.491000  0.309000
  1.000000  0.600000  0.550000  0.328000
```

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1.100000	0.610000	0.611000	0.347000
1.200000	0.620000	0.672000	0.364000
1.300000	0.630000	0.735000	0.381000
1.400000	0.640000	0.798000	0.396000
1.500000	0.650000	0.863000	0.412000
1.600000	0.660000	0.928000	0.426000
1.700000	0.670000	0.995000	0.441000
1.800000	0.680000	1.062000	0.454000
1.900000	0.690000	1.131000	0.468000
2.000000	0.700000	1.200000	0.507000
2.100000	0.710000	1.271000	0.568000
2.200000	0.720000	1.342000	0.632000
2.300000	0.730000	1.415000	0.676000
2.400000	0.740000	1.488000	0.714000
2.500000	0.750000	1.563000	0.748000
2.600000	0.760000	1.638000	0.781000
2.700000	0.770000	1.715000	0.811000
2.800000	0.780000	1.792000	0.839000
2.900000	0.790000	1.871000	0.866000
3.000000	0.800000	1.950000	0.892000
3.100000	0.810000	2.031000	0.918000
3.200000	0.820000	2.112000	0.942000
3.300000	0.830000	2.195000	0.965000
3.400000	0.840000	2.278000	0.988000
3.500000	0.850000	2.363000	1.010000
3.600000	0.860000	2.448000	1.032000
3.700000	0.870000	2.535000	1.053000
3.800000	0.880000	2.622000	1.074000
3.900000	0.890000	2.711000	1.094000
4.000000	0.900000	2.800000	1.114000
4.100000	0.910000	2.891000	1.133000
4.200000	0.920000	2.982000	1.153000
4.300000	0.930000	3.075000	1.171000
4.400000	0.940000	3.168000	1.190000
4.500000	0.950000	3.263000	1.208000
4.600000	0.960000	3.358000	1.226000
4.700000	0.970000	3.455000	1.243000
4.800000	0.980000	3.552000	1.260000
4.900000	0.990000	3.651000	1.277000
5.000000	1.000000	3.750000	1.294000
5.100000	1.010000	3.851000	1.311000
5.200000	1.020000	3.952000	1.327000
5.300000	1.030000	4.055000	1.343000
5.400000	1.040000	4.158000	1.359000
5.500000	1.050000	4.263000	1.428000
5.600000	1.060000	4.368000	1.539000
5.700000	1.070000	4.475000	1.679000
5.800000	1.080000	4.582000	1.842000
5.900000	1.090000	4.691000	2.025000
6.000000	1.100000	4.800000	2.225000
6.100000	1.110000	4.911000	2.441000
6.200000	1.120000	5.022000	2.672000
6.300000	1.130000	5.135000	2.916000
6.400000	1.140000	5.248000	3.174000
6.500000	1.150000	5.363000	3.444000
6.600000	1.160000	5.478000	3.726000
6.700000	1.170000	5.595000	4.019000
6.800000	1.180000	5.712000	4.323000
6.900000	1.190000	5.831000	4.637000
7.000000	1.200000	5.950000	4.962000
7.100000	1.210000	6.071000	5.296000
7.200000	1.220000	6.192000	5.639000
7.300000	1.230000	6.315000	5.992000
7.400000	1.240000	6.438000	6.354000
7.500000	1.250000	6.563000	6.725000
7.600000	1.260000	6.688000	7.104000
7.700000	1.270000	6.815000	7.491000
7.800000	1.280000	6.942000	7.886000
7.900000	1.290000	7.071000	8.290000
8.000000	1.300000	7.200000	8.701000

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```
  8.200000  1.320000  7.462000  9.547000
  8.400000  1.340000  7.728000  10.42100
  8.600000  1.360000  7.998000  11.32500
  8.800000  1.380000  8.272000  12.25600
  9.000000  1.400000  8.550000  13.21400
  9.200000  1.420000  8.832000  14.19700
  9.400000  1.440000  9.118000  15.20600
  9.600000  1.460000  9.408000  16.24000
  9.800000  1.480000  9.702000  20.84000
  10.00000  1.500000  10.00000  28.05000
  10.10000  1.520000  10.30200  999.0000
  END FTABLE  1
END FTABLES

EXT SOURCES
<-Volume-> <Member> SsysSgap<--Mult-->Tran <-Target vols> <-Grp> <-Member->  ***
<Name>   # <Name> # tem strg<-factor->strg <Name>   #   #        <Name> # #  ***
WDM      2 PREC     ENGL    1.045          PERLND   1 999 EXTNL  PREC
WDM      2 PREC     ENGL    1.045          IMPLND   1 999 EXTNL  PREC
WDM      1 EVAP     ENGL    1              PERLND   1 999 EXTNL  PETINP
WDM      1 EVAP     ENGL    1              IMPLND   1 999 EXTNL  PETINP
WDM     22 IRRG     ENGL    0.7       SAME PERLND  42     EXTNL  SURLI
WDM     22 IRRG     ENGL    0.7       SAME PERLND  58     EXTNL  SURLI
WDM      2 PREC     ENGL    1.045          RCHRES   1     EXTNL  PREC
WDM      1 EVAP     ENGL    1              RCHRES   1     EXTNL  POTEV

END EXT SOURCES

EXT TARGETS
<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Volume-> <Member> Tsys Tgap Amd ***
<Name>   #        <Name> # #<-factor->strg <Name>   # <Name>    tem strg strg***
RCHRES   1 HYDR   RO     1 1        1      WDM   1000 FLOW     ENGL       REPL
RCHRES   1 HYDR   STAGE  1 1        1      WDM   1001 STAG     ENGL       REPL
COPY     1 OUTPUT MEAN   1 1     12.1      WDM    701 FLOW     ENGL       REPL
COPY   501 OUTPUT MEAN   1 1     12.1      WDM    801 FLOW     ENGL       REPL
END EXT TARGETS

MASS-LINK
<Volume>   <-Grp> <-Member-><--Mult-->     <Target>       <-Grp> <-Member->***
<Name>             <Name> # #<-factor->     <Name>                <Name> # #***
  MASS-LINK        2
PERLND     PWATER SURO       0.083333      RCHRES         INFLOW IVOL
  END MASS-LINK    2

  MASS-LINK        3
PERLND     PWATER IFWO       0.083333      RCHRES         INFLOW IVOL
  END MASS-LINK    3

  MASS-LINK        5
IMPLND     IWATER SURO       0.083333      RCHRES         INFLOW IVOL
  END MASS-LINK    5

  MASS-LINK       12
PERLND     PWATER SURO       0.083333      COPY           INPUT  MEAN
  END MASS-LINK   12

  MASS-LINK       13
PERLND     PWATER IFWO       0.083333      COPY           INPUT  MEAN
  END MASS-LINK   13

  MASS-LINK       15
IMPLND     IWATER SURO       0.083333      COPY           INPUT  MEAN
  END MASS-LINK   15

  MASS-LINK       16
RCHRES     ROFLOW                          COPY           INPUT  MEAN
  END MASS-LINK   16


END MASS-LINK
```

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```
END RUN
```

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SAHM

PROJECT REPORT

General Model Information

Project Name: HMB 27_combo_10-30
Site Name:
Site Address:
City:
Report Date: 11/27/2013
Gage: ORANGEVA
Data Start: 1964/10/01
Data End: 2004/09/30
Timestep: Hourly
Precip Scale: 1.14
Version: 2013/08/23

POC Thresholds

Low Flow Threshold for POC1:	25 Percent of the 2 Year
High Flow Threshold for POC1:	10 Year

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Landuse Basin Data

Pre-Project Land Use

Basin 1

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
D,Grass,Steep(2-5%)	203.65
Pervious Total	203.65

Impervious Land Use	Acres
Impervious Total	0
Basin Total	203.65

Element Flows To:

Surface	Interflow	Groundwater
Channel 1	Channel 1	

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Mitigated Land Use

Basin 1

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
D,Urban,Steep(2-5%)	105.52
D,Grass,Steep(2-5%)	5.9
Pervious Total	111.42

Impervious Land Use	Acres
Imperv,Steep(2-5%)	63.4
Impervious Total	63.4
Basin Total	174.82

Element Flows To:

Surface	Interflow	Groundwater
HMB 28 WQ	HMB 28 WQ	

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Basin 2

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
D,Grass,Steep(2-5%)	40.53
Pervious Total	40.53

Impervious Land Use	Acres
Impervious Total	0
Basin Total	40.53

Element Flows To:

Surface	Interflow	Groundwater
Channel 1	Channel 1	

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Routing Elements

Pre-Project Routing

Channel 1

Bottom Length: 2784.00 ft.
Bottom Width: 5.00 ft.
Manning's n: 0.035
Channel bottom slope 1: 0.0244 To 1
Channel Left side slope 0: 0.5 To 1
Channel right side slope 2: 0.5 To 1
Discharge Structure
Riser Height: 0 ft.
Riser Diameter: 0 in.
Element Flows To:
Outlet 1 Outlet 2

Channel Hydraulic Table

Stage(ft)	Area(ac)	Volume(ac-ft)	Discharge(cfs)	Infilt(cfs)
0.0000	0.319	0.000	0.000	0.000
0.0667	0.323	0.021	0.361	0.000
0.1333	0.328	0.043	1.138	0.000
0.2000	0.332	0.065	2.220	0.000
0.2667	0.336	0.087	3.560	0.000
0.3333	0.340	0.110	5.129	0.000
0.4000	0.345	0.132	6.907	0.000
0.4667	0.349	0.156	8.876	0.000
0.5333	0.353	0.179	11.02	0.000
0.6000	0.357	0.203	13.34	0.000
0.6667	0.362	0.227	15.82	0.000
0.7333	0.366	0.251	18.46	0.000
0.8000	0.370	0.276	21.25	0.000
0.8667	0.375	0.301	24.18	0.000
0.9333	0.379	0.326	27.25	0.000
1.0000	0.383	0.351	30.46	0.000
1.0667	0.387	0.377	33.80	0.000
1.1333	0.392	0.403	37.27	0.000
1.2000	0.396	0.429	40.86	0.000
1.2667	0.400	0.456	44.59	0.000
1.3333	0.404	0.482	48.44	0.000
1.4000	0.409	0.510	52.40	0.000
1.4667	0.413	0.537	56.49	0.000
1.5333	0.417	0.565	60.70	0.000
1.6000	0.421	0.593	65.03	0.000
1.6667	0.426	0.621	69.47	0.000
1.7333	0.430	0.649	74.03	0.000
1.8000	0.434	0.678	78.71	0.000
1.8667	0.438	0.707	83.50	0.000
1.9333	0.443	0.737	88.41	0.000
2.0000	0.447	0.767	93.42	0.000
2.0667	0.451	0.796	98.56	0.000
2.1333	0.455	0.827	103.8	0.000
2.2000	0.460	0.857	109.1	0.000
2.2667	0.464	0.888	114.6	0.000
2.3333	0.468	0.919	120.2	0.000

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2.4000	0.473	0.951	125.9	0.000
2.4667	0.477	0.982	131.7	0.000
2.5333	0.481	1.014	137.6	0.000
2.6000	0.485	1.046	143.6	0.000
2.6667	0.490	1.079	149.8	0.000
2.7333	0.494	1.112	156.0	0.000
2.8000	0.498	1.145	162.4	0.000
2.8667	0.502	1.178	168.9	0.000
2.9333	0.507	1.212	175.5	0.000
3.0000	0.511	1.246	182.2	0.000
3.0667	0.515	1.280	189.0	0.000
3.1333	0.519	1.315	195.9	0.000
3.2000	0.524	1.349	202.9	0.000
3.2667	0.528	1.384	210.1	0.000
3.3333	0.532	1.420	217.4	0.000
3.4000	0.536	1.456	224.7	0.000
3.4667	0.541	1.491	232.2	0.000
3.5333	0.545	1.528	239.8	0.000
3.6000	0.549	1.564	247.6	0.000
3.6667	0.553	1.601	255.4	0.000
3.7333	0.558	1.638	263.3	0.000
3.8000	0.562	1.675	271.4	0.000
3.8667	0.566	1.713	279.6	0.000
3.9333	0.571	1.751	287.9	0.000
4.0000	0.575	1.789	296.3	0.000
4.0667	0.579	1.828	304.8	0.000
4.1333	0.583	1.866	313.5	0.000
4.2000	0.588	1.905	322.3	0.000
4.2667	0.592	1.945	331.1	0.000
4.3333	0.596	1.984	340.1	0.000
4.4000	0.600	2.024	349.2	0.000
4.4667	0.605	2.065	358.5	0.000
4.5333	0.609	2.105	367.8	0.000
4.6000	0.613	2.146	377.3	0.000
4.6667	0.617	2.187	386.9	0.000
4.7333	0.622	2.228	396.6	0.000
4.8000	0.626	2.270	406.5	0.000
4.8667	0.630	2.312	416.4	0.000
4.9333	0.634	2.354	426.5	0.000
5.0000	0.639	2.396	436.7	0.000
5.0667	0.643	2.439	447.0	0.000
5.1333	0.647	2.482	457.4	0.000
5.2000	0.652	2.525	468.0	0.000
5.2667	0.656	2.569	478.7	0.000
5.3333	0.660	2.613	489.5	0.000
5.4000	0.664	2.657	500.4	0.000
5.4667	0.669	2.702	511.5	0.000
5.5333	0.673	2.746	522.7	0.000
5.6000	0.677	2.791	534.0	0.000
5.6667	0.681	2.837	545.4	0.000
5.7333	0.686	2.882	557.0	0.000
5.8000	0.690	2.928	568.7	0.000
5.8667	0.694	2.974	580.5	0.000
5.9333	0.698	3.021	592.4	0.000
6.0000	0.703	3.068	604.5	0.000
6.0667	0.707	3.115	616.7	0.000

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Mitigated Routing

Channel 1

Bottom Length: 2784.00 ft.
Bottom Width: 5.00 ft.
Manning's n: 0.035
Channel bottom slope 1: 0.0244 To 1
Channel Left side slope 0: 0.5 To 1
Channel right side slope 2: 0.5 To 1
Discharge Structure
Riser Height: 0 ft.
Riser Diameter: 0 in.
Element Flows To:
Outlet 1 Outlet 2
DB 12

Channel Hydraulic Table

Stage(ft)	Area(ac)	Volume(ac-ft)	Discharge(cfs)	Infilt(cfs)
0.0000	0.319	0.000	0.000	0.000
0.0667	0.323	0.021	0.361	0.000
0.1333	0.328	0.043	1.138	0.000
0.2000	0.332	0.065	2.220	0.000
0.2667	0.336	0.087	3.560	0.000
0.3333	0.340	0.110	5.129	0.000
0.4000	0.345	0.132	6.907	0.000
0.4667	0.349	0.156	8.876	0.000
0.5333	0.353	0.179	11.02	0.000
0.6000	0.357	0.203	13.34	0.000
0.6667	0.362	0.227	15.82	0.000
0.7333	0.366	0.251	18.46	0.000
0.8000	0.370	0.276	21.25	0.000
0.8667	0.375	0.301	24.18	0.000
0.9333	0.379	0.326	27.25	0.000
1.0000	0.383	0.351	30.46	0.000
1.0667	0.387	0.377	33.80	0.000
1.1333	0.392	0.403	37.27	0.000
1.2000	0.396	0.429	40.86	0.000
1.2667	0.400	0.456	44.59	0.000
1.3333	0.404	0.482	48.44	0.000
1.4000	0.409	0.510	52.40	0.000
1.4667	0.413	0.537	56.49	0.000
1.5333	0.417	0.565	60.70	0.000
1.6000	0.421	0.593	65.03	0.000
1.6667	0.426	0.621	69.47	0.000
1.7333	0.430	0.649	74.03	0.000
1.8000	0.434	0.678	78.71	0.000
1.8667	0.438	0.707	83.50	0.000
1.9333	0.443	0.737	88.41	0.000
2.0000	0.447	0.767	93.42	0.000
2.0667	0.451	0.796	98.56	0.000
2.1333	0.455	0.827	103.8	0.000
2.2000	0.460	0.857	109.1	0.000
2.2667	0.464	0.888	114.6	0.000
2.3333	0.468	0.919	120.2	0.000
2.4000	0.473	0.951	125.9	0.000
2.4667	0.477	0.982	131.7	0.000

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2.5333	0.481	1.014	137.6	0.000
2.6000	0.485	1.046	143.6	0.000
2.6667	0.490	1.079	149.8	0.000
2.7333	0.494	1.112	156.0	0.000
2.8000	0.498	1.145	162.4	0.000
2.8667	0.502	1.178	168.9	0.000
2.9333	0.507	1.212	175.5	0.000
3.0000	0.511	1.246	182.2	0.000
3.0667	0.515	1.280	189.0	0.000
3.1333	0.519	1.315	195.9	0.000
3.2000	0.524	1.349	202.9	0.000
3.2667	0.528	1.384	210.1	0.000
3.3333	0.532	1.420	217.4	0.000
3.4000	0.536	1.456	224.7	0.000
3.4667	0.541	1.491	232.2	0.000
3.5333	0.545	1.528	239.8	0.000
3.6000	0.549	1.564	247.6	0.000
3.6667	0.553	1.601	255.4	0.000
3.7333	0.558	1.638	263.3	0.000
3.8000	0.562	1.675	271.4	0.000
3.8667	0.566	1.713	279.6	0.000
3.9333	0.571	1.751	287.9	0.000
4.0000	0.575	1.789	296.3	0.000
4.0667	0.579	1.828	304.8	0.000
4.1333	0.583	1.866	313.5	0.000
4.2000	0.588	1.905	322.3	0.000
4.2667	0.592	1.945	331.1	0.000
4.3333	0.596	1.984	340.1	0.000
4.4000	0.600	2.024	349.2	0.000
4.4667	0.605	2.065	358.5	0.000
4.5333	0.609	2.105	367.8	0.000
4.6000	0.613	2.146	377.3	0.000
4.6667	0.617	2.187	386.9	0.000
4.7333	0.622	2.228	396.6	0.000
4.8000	0.626	2.270	406.5	0.000
4.8667	0.630	2.312	416.4	0.000
4.9333	0.634	2.354	426.5	0.000
5.0000	0.639	2.396	436.7	0.000
5.0667	0.643	2.439	447.0	0.000
5.1333	0.647	2.482	457.4	0.000
5.2000	0.652	2.525	468.0	0.000
5.2667	0.656	2.569	478.7	0.000
5.3333	0.660	2.613	489.5	0.000
5.4000	0.664	2.657	500.4	0.000
5.4667	0.669	2.702	511.5	0.000
5.5333	0.673	2.746	522.7	0.000
5.6000	0.677	2.791	534.0	0.000
5.6667	0.681	2.837	545.4	0.000
5.7333	0.686	2.882	557.0	0.000
5.8000	0.690	2.928	568.7	0.000
5.8667	0.694	2.974	580.5	0.000
5.9333	0.698	3.021	592.4	0.000
6.0000	0.703	3.068	604.5	0.000
6.0667	0.707	3.115	616.7	0.000

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DB 12

Depth: 12 ft.
Element Flows To:
Outlet 1 Outlet 2

SSD Table Hydraulic Table

Stage (ft)	Area (ac)	Volume (ac-ft)	Manual	NotUsed	NotUsed	NotUsed	NotUsed
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.100	0.210	0.010	0.110	0.000	0.000	0.000	0.000
0.200	0.190	0.060	0.300	0.000	0.000	0.000	0.000
0.400	0.210	0.120	0.840	0.000	0.000	0.000	0.000
0.600	0.220	0.180	1.550	0.000	0.000	0.000	0.000
0.800	0.240	0.240	2.380	0.000	0.000	0.000	0.000
1.000	0.260	0.290	3.330	0.000	0.000	0.000	0.000
1.200	0.280	0.350	4.030	0.000	0.000	0.000	0.000
1.400	0.300	0.410	4.570	0.000	0.000	0.000	0.000
1.600	0.320	0.470	5.050	0.000	0.000	0.000	0.000
1.800	0.340	0.530	5.490	0.000	0.000	0.000	0.000
2.000	0.360	0.600	5.900	0.000	0.000	0.000	0.000
2.200	0.390	0.670	6.280	0.000	0.000	0.000	0.000
2.400	0.410	0.740	6.640	0.000	0.000	0.000	0.000
2.600	0.440	0.810	6.980	0.000	0.000	0.000	0.000
2.800	0.470	0.890	7.300	0.000	0.000	0.000	0.000
3.000	0.500	0.980	7.610	0.000	0.000	0.000	0.000
3.200	0.530	1.070	7.910	0.000	0.000	0.000	0.000
3.400	0.560	1.160	8.200	0.000	0.000	0.000	0.000
3.600	0.590	1.270	8.480	0.000	0.000	0.000	0.000
3.800	0.620	1.380	8.750	0.000	0.000	0.000	0.000
4.000	0.660	1.490	9.010	0.000	0.000	0.000	0.000
4.200	0.700	1.620	9.260	0.000	0.000	0.000	0.000
4.400	0.730	1.750	9.510	0.000	0.000	0.000	0.000
4.600	0.770	1.890	9.750	0.000	0.000	0.000	0.000
4.800	0.810	2.040	9.980	0.000	0.000	0.000	0.000
5.000	0.850	2.190	10.21	0.000	0.000	0.000	0.000
5.200	0.890	2.360	10.44	0.000	0.000	0.000	0.000
5.400	0.940	2.530	10.66	0.000	0.000	0.000	0.000
5.600	0.980	2.720	10.87	0.000	0.000	0.000	0.000
5.800	1.030	2.920	11.08	0.000	0.000	0.000	0.000
6.000	1.070	3.120	11.29	0.000	0.000	0.000	0.000
6.200	1.120	3.340	12.18	0.000	0.000	0.000	0.000
6.400	1.170	3.570	13.63	0.000	0.000	0.000	0.000
6.600	1.220	3.800	15.45	0.000	0.000	0.000	0.000
6.800	1.270	4.050	17.57	0.000	0.000	0.000	0.000
7.000	1.330	4.320	19.93	0.000	0.000	0.000	0.000
7.200	1.380	4.590	22.53	0.000	0.000	0.000	0.000
7.400	1.430	4.870	25.34	0.000	0.000	0.000	0.000
7.600	1.490	5.170	28.33	0.000	0.000	0.000	0.000
7.800	1.550	5.480	31.51	0.000	0.000	0.000	0.000
8.000	1.610	5.800	34.85	0.000	0.000	0.000	0.000
8.200	1.670	6.140	38.35	0.000	0.000	0.000	0.000
8.400	1.730	6.490	42.01	0.000	0.000	0.000	0.000
8.600	1.790	6.850	45.81	0.000	0.000	0.000	0.000
8.800	1.850	7.220	49.76	0.000	0.000	0.000	0.000
9.000	1.920	7.610	53.84	0.000	0.000	0.000	0.000

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9.200	1.980	8.010	58.04	0.000	0.000	0.000	0.000
9.400	2.050	8.430	62.38	0.000	0.000	0.000	0.000
9.600	2.120	8.860	66.84	0.000	0.000	0.000	0.000
9.800	2.180	9.300	71.42	0.000	0.000	0.000	0.000
10.000	2.250	9.750	76.11	0.000	0.000	0.000	0.000
10.20	2.330	10.22	80.92	0.000	0.000	0.000	0.000
10.40	2.400	10.71	85.84	0.000	0.000	0.000	0.000
10.60	2.470	11.20	90.87	0.000	0.000	0.000	0.000
10.80	2.550	11.71	96.00	0.000	0.000	0.000	0.000
11.00	2.620	12.24	101.2	0.000	0.000	0.000	0.000
11.20	2.700	12.78	106.6	0.000	0.000	0.000	0.000
11.40	2.780	13.33	112.0	0.000	0.000	0.000	0.000
11.60	2.860	13.90	117.5	0.000	0.000	0.000	0.000
11.80	2.940	14.48	124.6	0.000	0.000	0.000	0.000

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HMB 28 WQ

Depth: 7.9 ft.
Element Flows To:
Outlet 1 Outlet 2
Channel 1

SSD Table Hydraulic Table

Stage (ft)	Area (ac)	Volume (ac-ft)	Manual	NotUsed	NotUsed	NotUsed	NotUsed
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.100	0.330	0.030	0.040	0.000	0.000	0.000	0.000
0.200	0.340	0.070	0.100	0.000	0.000	0.000	0.000
0.300	0.350	0.100	0.180	0.000	0.000	0.000	0.000
0.400	0.350	0.140	0.260	0.000	0.000	0.000	0.000
0.500	0.360	0.170	0.310	0.000	0.000	0.000	0.000
0.600	0.360	0.210	0.350	0.000	0.000	0.000	0.000
0.700	0.370	0.240	0.390	0.000	0.000	0.000	0.000
0.800	0.370	0.280	0.430	0.000	0.000	0.000	0.000
0.900	0.380	0.320	0.460	0.000	0.000	0.000	0.000
1.000	0.390	0.360	0.490	0.000	0.000	0.000	0.000
1.100	0.390	0.400	0.520	0.000	0.000	0.000	0.000
1.200	0.400	0.440	0.540	0.000	0.000	0.000	0.000
1.300	0.400	0.480	0.570	0.000	0.000	0.000	0.000
1.400	0.410	0.520	0.590	0.000	0.000	0.000	0.000
1.500	0.420	0.560	0.620	0.000	0.000	0.000	0.000
1.600	0.420	0.600	0.640	0.000	0.000	0.000	0.000
1.700	0.430	0.640	0.660	0.000	0.000	0.000	0.000
1.800	0.430	0.680	0.680	0.000	0.000	0.000	0.000
1.900	0.440	0.730	0.700	0.000	0.000	0.000	0.000
2.000	0.440	0.770	0.720	0.000	0.000	0.000	0.000
2.100	0.450	0.820	0.740	0.000	0.000	0.000	0.000
2.200	0.460	0.860	0.760	0.000	0.000	0.000	0.000
2.300	0.460	0.910	0.780	0.000	0.000	0.000	0.000
2.400	0.470	0.950	0.800	0.000	0.000	0.000	0.000
2.500	0.470	1.000	0.820	0.000	0.000	0.000	0.000
2.600	0.480	1.050	0.830	0.000	0.000	0.000	0.000
2.700	0.480	1.100	0.850	0.000	0.000	0.000	0.000
2.800	0.490	1.140	0.870	0.000	0.000	0.000	0.000
2.900	0.500	1.190	0.880	0.000	0.000	0.000	0.000
3.000	0.500	1.240	0.900	0.000	0.000	0.000	0.000
3.100	0.510	1.290	0.920	0.000	0.000	0.000	0.000
3.200	0.510	1.340	0.930	0.000	0.000	0.000	0.000
3.300	0.520	1.400	0.950	0.000	0.000	0.000	0.000
3.400	0.520	1.450	0.960	0.000	0.000	0.000	0.000
3.500	0.530	1.500	0.980	0.000	0.000	0.000	0.000
3.600	0.530	1.550	0.990	0.000	0.000	0.000	0.000
3.700	0.540	1.610	1.010	0.000	0.000	0.000	0.000
3.800	0.550	1.660	1.020	0.000	0.000	0.000	0.000
3.900	0.550	1.720	1.030	0.000	0.000	0.000	0.000
4.000	0.560	1.770	1.050	0.000	0.000	0.000	0.000
4.100	0.560	1.830	1.060	0.000	0.000	0.000	0.000
4.200	0.570	1.880	1.070	0.000	0.000	0.000	0.000
4.300	0.570	1.940	1.090	0.000	0.000	0.000	0.000
4.400	0.580	2.000	1.100	0.000	0.000	0.000	0.000
4.500	0.590	2.060	1.110	0.000	0.000	0.000	0.000
4.600	0.590	2.110	1.130	0.000	0.000	0.000	0.000

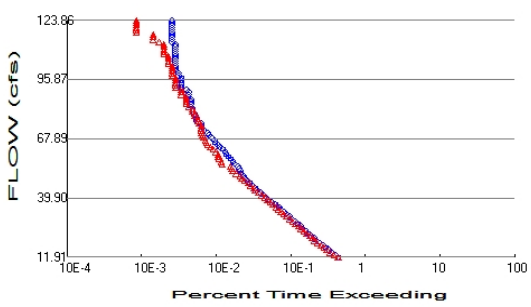
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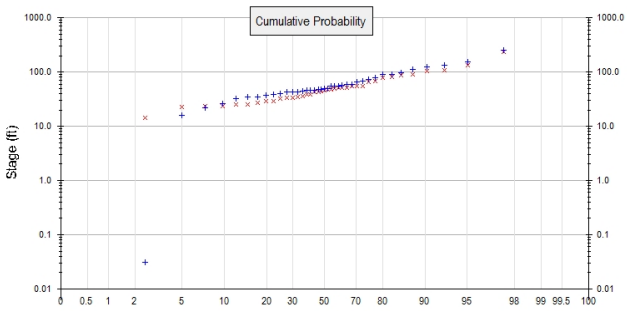
4.700	0.600	2.170	1.140	0.000	0.000	0.000	0.000
4.800	0.600	2.230	1.150	0.000	0.000	0.000	0.000
4.900	0.610	2.290	1.160	0.000	0.000	0.000	0.000
5.000	0.610	2.360	1.180	0.000	0.000	0.000	0.000
5.100	0.620	2.420	1.190	0.000	0.000	0.000	0.000
5.200	0.620	2.480	1.200	0.000	0.000	0.000	0.000
5.300	0.630	2.540	1.210	0.000	0.000	0.000	0.000
5.400	0.640	2.610	1.220	0.000	0.000	0.000	0.000
5.500	0.640	2.670	1.240	0.000	0.000	0.000	0.000
5.600	0.650	2.730	1.250	0.000	0.000	0.000	0.000
5.700	0.650	2.800	1.260	0.000	0.000	0.000	0.000
5.800	0.660	2.860	1.270	0.000	0.000	0.000	0.000
5.900	0.660	2.930	1.280	0.000	0.000	0.000	0.000
6.000	0.670	3.000	1.290	0.000	0.000	0.000	0.000
6.100	0.680	3.060	1.300	0.000	0.000	0.000	0.000
6.200	0.680	3.130	1.310	0.000	0.000	0.000	0.000
6.300	0.690	3.200	1.320	0.000	0.000	0.000	0.000
6.400	0.690	3.270	1.340	0.000	0.000	0.000	0.000
6.500	0.700	3.340	1.350	0.000	0.000	0.000	0.000
6.600	0.700	3.410	1.360	0.000	0.000	0.000	0.000
6.700	0.710	3.480	1.370	0.000	0.000	0.000	0.000
6.800	0.710	3.550	1.380	0.000	0.000	0.000	0.000
6.900	0.720	3.620	1.390	0.000	0.000	0.000	0.000
7.000	0.730	3.700	1.400	0.000	0.000	0.000	0.000
7.100	0.730	3.770	1.410	0.000	0.000	0.000	0.000
7.200	0.740	3.840	1.420	0.000	0.000	0.000	0.000
7.300	0.740	3.920	1.430	0.000	0.000	0.000	0.000
7.400	0.750	3.990	1.440	0.000	0.000	0.000	0.000
7.500	0.750	4.070	1.450	0.000	0.000	0.000	0.000
7.600	0.760	4.140	1.460	0.000	0.000	0.000	0.000
7.700	0.760	4.220	1.470	0.000	0.000	0.000	0.000
7.800	0.770	4.300	1.480	0.000	0.000	0.000	0.000

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Analysis Results

POC 1





\+ Pre-Project x Mitigated

Pre-Project Landuse Totals for POC #1
Total Pervious Area: 203.65
Total Impervious Area: 0

Mitigated Landuse Totals for POC #1
Total Pervious Area: 151.95
Total Impervious Area: 63.4

Flow Frequency Method: Log Pearson Type III 17B

Flow Frequency Return Periods for Pre-Project. POC #1

Return Period	**Flow(cfs)**
2 year	47.645156
5 year	88.498361
10 year	123.859756
25 year	175.930366

Flow Frequency Return Periods for Mitigated. POC #1

Return Period	**Flow(cfs)**
2 year	44.378405
5 year	75.822051
10 year	101.766268
25 year	153.689634

Annual Peaks

Annual Peaks for Pre-Project and Mitigated. POC #1

Year	**Pre-Project**	**Mitigated**
1965	49.529	47.509
1966	22.117	23.190
1967	54.784	55.239
1968	34.248	35.670
1969	55.616	39.150
1970	46.428	43.553
1971	59.267	38.984
1972	25.856	22.429
1973	91.570	82.173
1974	77.578	55.144
1975	43.681	25.457
1976	0.031	14.337
1977	0.019	2.165
1978	135.638	103.211

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1979	36.700	28.653
1980	43.161	34.267
1981	46.195	42.503
1982	73.430	69.183
1983	91.679	77.689
1984	47.939	45.246
1985	46.004	33.469
1986	155.170	131.520
1987	38.211	31.983
1988	44.221	47.707
1989	55.462	49.381
1990	39.880	27.417
1991	47.365	50.720
1992	68.117	65.886
1993	58.604	46.474
1994	16.133	25.438
1995	249.745	232.515
1996	113.202	87.914
1997	125.340	107.916
1998	97.376	91.364
1999	32.054	23.400
2000	65.746	55.218
2001	43.572	33.224
2002	34.318	28.726
2003	50.023	51.448
2004	56.332	50.754

Ranked Annual Peaks

Ranked Annual Peaks for Pre-Project and Mitigated. POC #1

Rank	Pre-Project	Mitigated
1	249.7450	232.5150
2	155.1700	131.5200
3	135.6380	107.9160
4	125.3400	103.2110
5	113.2020	91.3642
6	97.3759	87.9137
7	91.6790	82.1734
8	91.5696	77.6892
9	77.5784	69.1833
10	73.4296	65.8858
11	68.1165	55.2389
12	65.7459	55.2180
13	59.2673	55.1443
14	58.6042	51.4483
15	56.3319	50.7541
16	55.6158	50.7204
17	55.4616	49.3807
18	54.7837	47.7071
19	50.0225	47.5093
20	49.5289	46.4744
21	47.9389	45.2455
22	47.3654	43.5526
23	46.4280	42.5030
24	46.1947	39.1504
25	46.0044	38.9842
26	44.2210	35.6701
27	43.6814	34.2666
28	43.5722	33.4690

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29	43.1608	33.2242
30	39.8796	31.9825
31	38.2105	28.7261
32	36.7001	28.6530
33	34.3178	27.4166
34	34.2476	25.4571
35	32.0542	25.4375
36	25.8560	23.3997
37	22.1168	23.1896
38	16.1332	22.4286
39	0.0307	14.3368
40	0.0193	2.1652

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Duration Flows

The Facility PASSED

Flow(cfs)	Predev	Mit	Percentage	Pass/Fail
11.9113	1519	1517	99	Pass
13.0421	1378	1336	96	Pass
14.1729	1255	1190	94	Pass
15.3037	1140	1075	94	Pass
16.4345	1033	978	94	Pass
17.5653	940	886	94	Pass
18.6960	847	798	94	Pass
19.8268	774	722	93	Pass
20.9576	721	674	93	Pass
22.0884	656	628	95	Pass
23.2192	597	571	95	Pass
24.3500	556	527	94	Pass
25.4808	509	485	95	Pass
26.6116	475	448	94	Pass
27.7424	435	408	93	Pass
28.8732	396	371	93	Pass
30.0040	364	339	93	Pass
31.1348	333	309	92	Pass
32.2656	306	281	91	Pass
33.3963	282	261	92	Pass
34.5271	258	240	93	Pass
35.6579	246	223	90	Pass
36.7887	218	201	92	Pass
37.9195	196	187	95	Pass
39.0503	177	172	97	Pass
40.1811	162	159	98	Pass
41.3119	153	143	93	Pass
42.4427	137	130	94	Pass
43.5735	124	116	93	Pass
44.7043	118	112	94	Pass
45.8351	107	100	93	Pass
46.9659	99	95	95	Pass
48.0967	91	84	92	Pass
49.2274	85	77	90	Pass
50.3582	81	74	91	Pass
51.4890	77	65	84	Pass
52.6198	73	59	80	Pass
53.7506	71	56	78	Pass
54.8814	69	54	78	Pass
56.0122	62	42	67	Pass
57.1430	59	41	69	Pass
58.2738	55	38	69	Pass
59.4046	51	37	72	Pass
60.5354	48	37	77	Pass
61.6662	46	35	76	Pass
62.7970	43	32	74	Pass
63.9277	39	29	74	Pass
65.0585	37	27	72	Pass
66.1893	34	26	76	Pass
67.3201	33	25	75	Pass
68.4509	30	24	80	Pass
69.5817	28	23	82	Pass
70.7125	27	22	81	Pass

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71.8433	24	22	91	Pass
72.9741	23	22	95	Pass
74.1049	22	22	100	Pass
75.2357	22	21	95	Pass
76.3665	19	20	105	Pass
77.4973	19	20	105	Pass
78.6281	18	18	100	Pass
79.7588	18	18	100	Pass
80.8896	17	17	100	Pass
82.0204	17	17	100	Pass
83.1512	16	15	93	Pass
84.2820	16	14	87	Pass
85.4128	16	14	87	Pass
86.5436	16	14	87	Pass
87.6744	15	14	93	Pass
88.8052	15	12	80	Pass
89.9360	15	12	80	Pass
91.0668	14	12	85	Pass
92.1976	12	10	83	Pass
93.3284	12	10	83	Pass
94.4591	12	10	83	Pass
95.5899	12	10	83	Pass
96.7207	12	10	83	Pass
97.8515	11	9	81	Pass
98.9823	11	9	81	Pass
100.1131	10	9	90	Pass
101.2439	10	9	90	Pass
102.3747	10	9	90	Pass
103.5055	10	8	80	Pass
104.6363	10	8	80	Pass
105.7671	10	8	80	Pass
106.8979	10	8	80	Pass
108.0287	10	7	70	Pass
109.1595	10	7	70	Pass
110.2902	10	7	70	Pass
111.4210	10	7	70	Pass
112.5518	10	7	70	Pass
113.6826	9	6	66	Pass
114.8134	9	5	55	Pass
115.9442	9	5	55	Pass
117.0750	9	5	55	Pass
118.2058	9	3	33	Pass
119.3366	9	3	33	Pass
120.4674	9	3	33	Pass
121.5982	9	3	33	Pass
122.7290	9	3	33	Pass
123.8598	9	3	33	Pass

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Model Default Modifications

Total of 0 changes have been made.

PERLND Changes

No PERLND changes have been made.

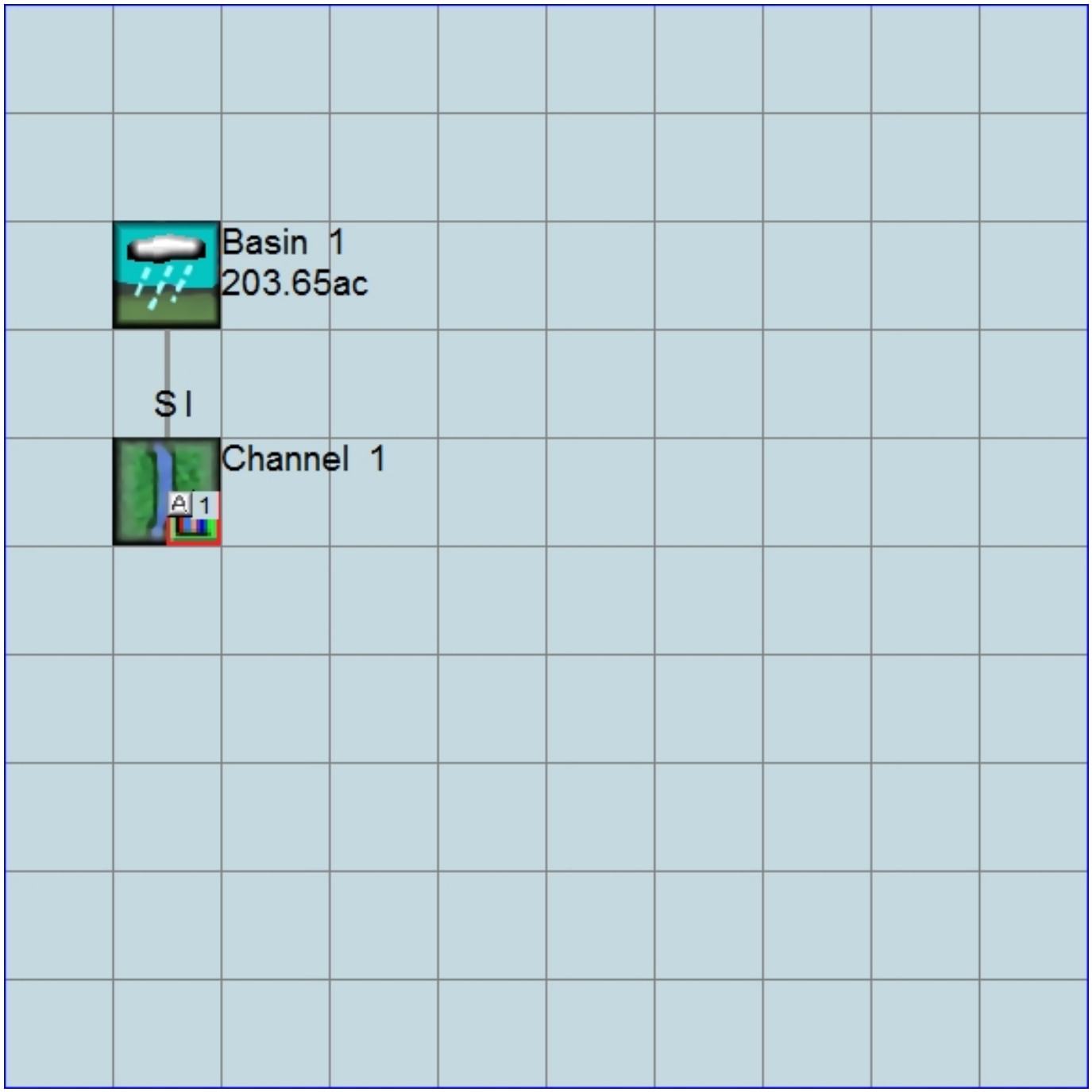
IMPLND Changes

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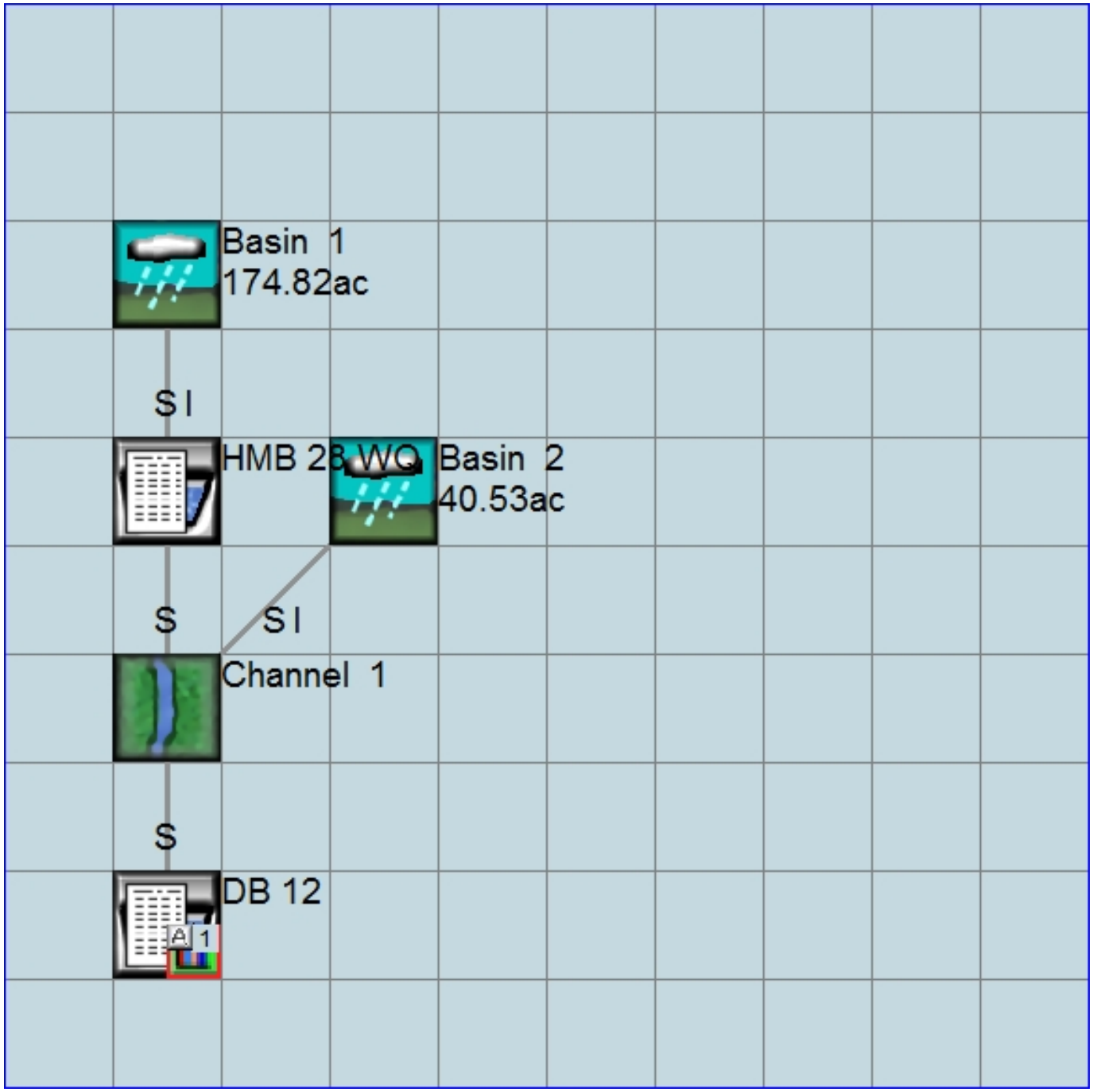
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Appendix

Pre-Project Schematic



Mitigated Schematic



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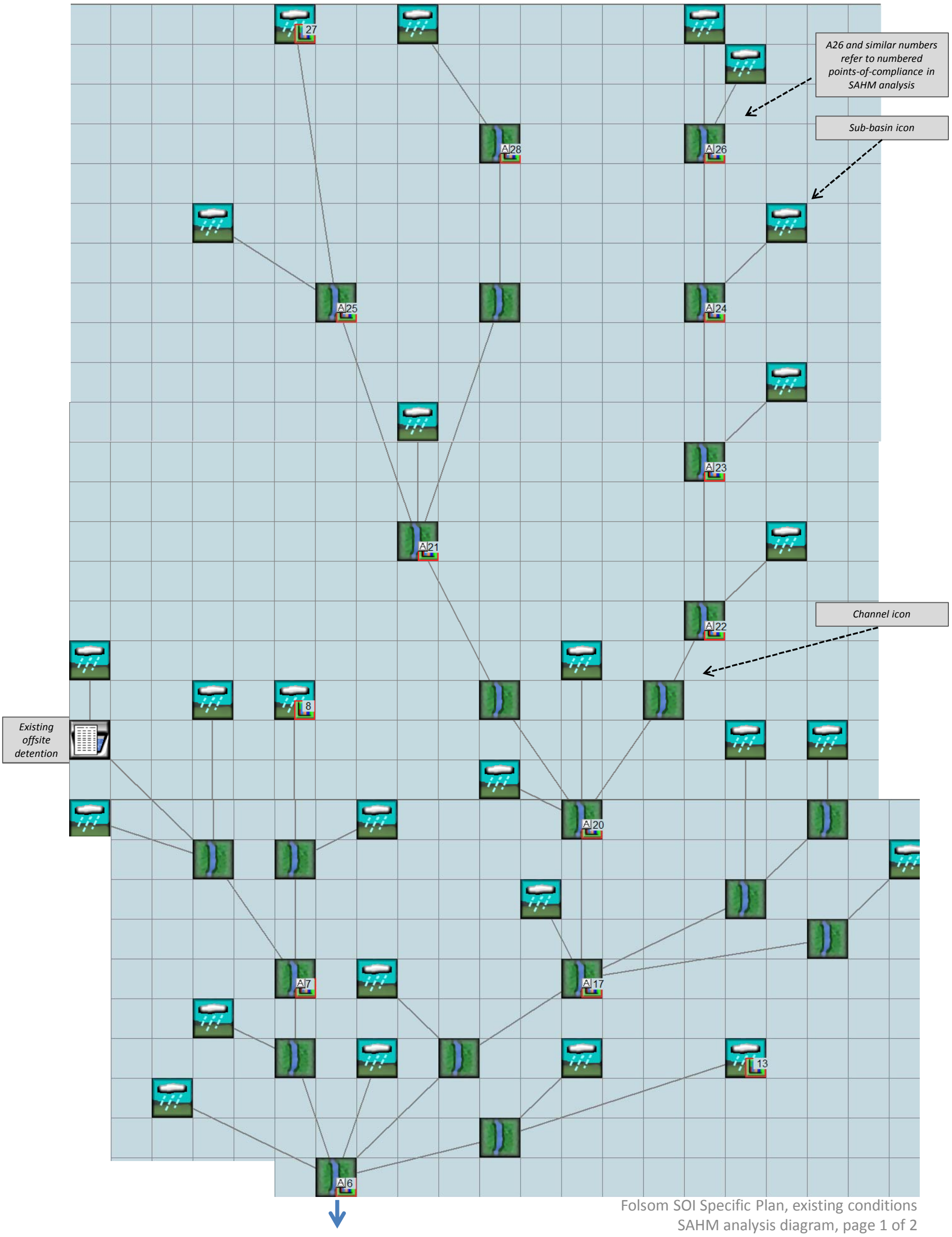
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Local (360)943-0304

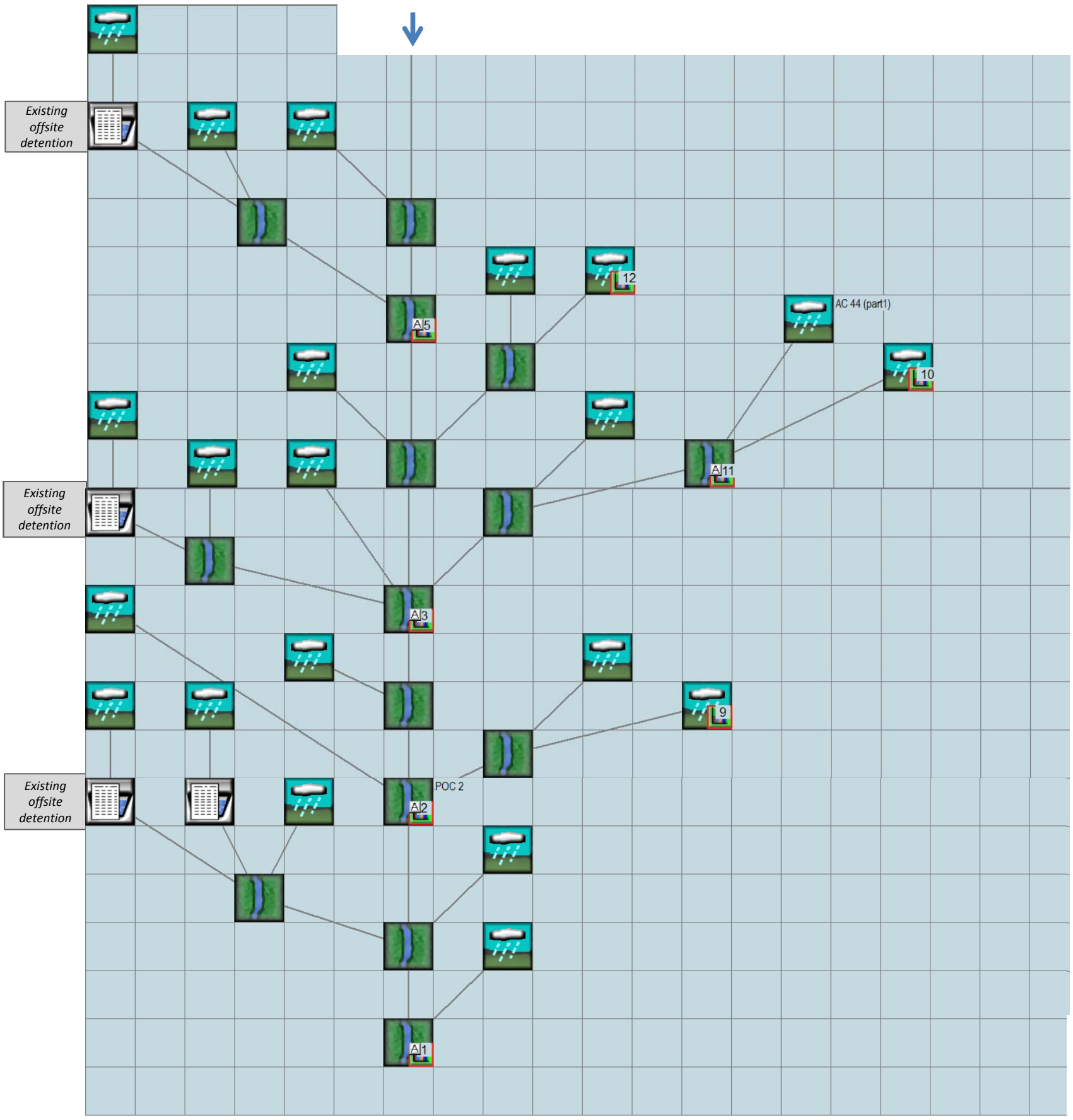
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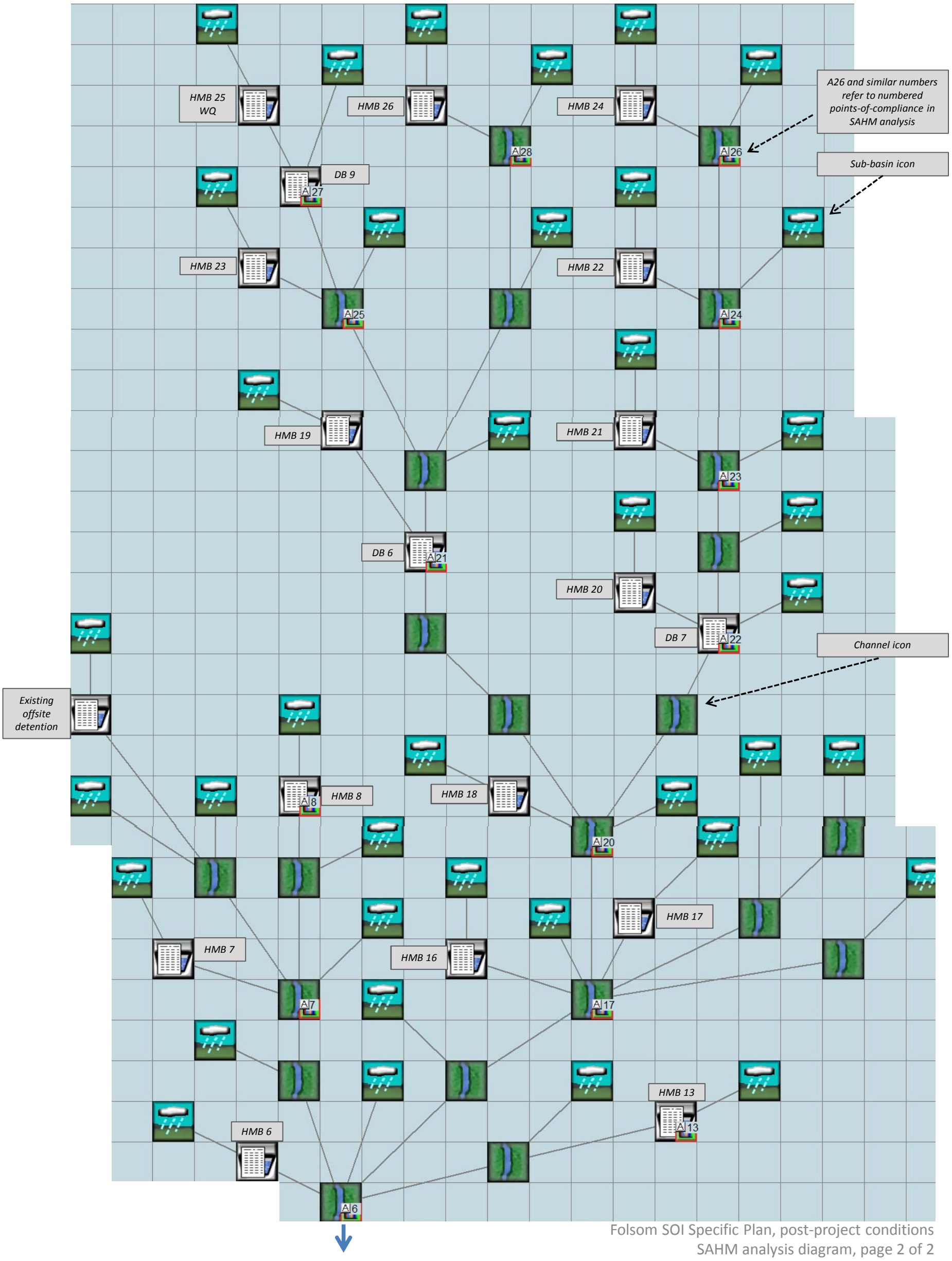
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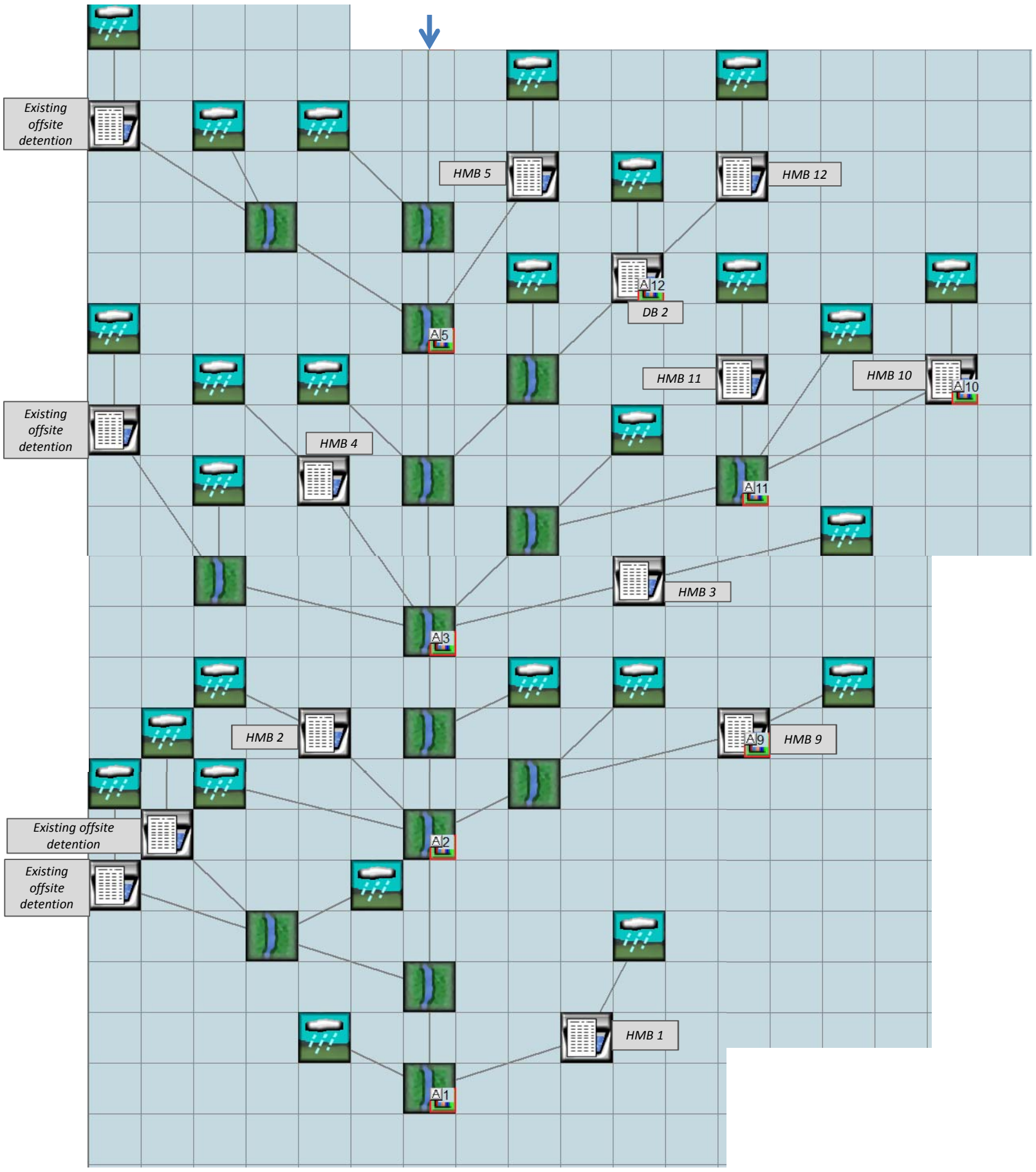
SAHM

PROJECT REPORT


A26 and similar numbers refer to numbered points-of-compliance in SAHM analysis
Sub-basin icon
Channel icon
Existing offsite detention
27
A28
A26
A25
A24
A23
A21
A22
8
A20
A7
A17
13
A6


Existing offsite detention
A5
12
AC 44 (part1)
10
A11
Existing offsite detention
A3
9
Existing offsite detention
POC 2
A2
A1


HMB 25 WQ
HMB 26
HMB 24
A26 and similar numbers refer to numbered points-of-compliance in SAHM analysis
A28
A26
DB 9
A27
Sub-basin icon
HMB 23
HMB 22
A25
A24
HMB 19
HMB 21
A23
DB 6
A21
HMB 20
DB 7
A22
Channel icon
Existing offsite detention
HMB 8
A8
HMB 18
A20
HMB 17
HMB 7
HMB 16
A7
A17
HMB 13
A13
HMB 6
A6


Existing offsite detention
HMB 5
HMB 12
A12
DB 2
A5
HMB 11
HMB 10
A10
Existing offsite detention
HMB 4
A11
HMB 3
A3
HMB 2
A9
HMB 9
Existing offsite detention
A2
Existing offsite detention
HMB 1
A1

General Model Information

Project Name: Folsom SOI_networked_ver 9-10a
Site Name:
Site Address:
City:
Report Date: 11/21/2013
Gage: ORANGEVA
Data Start: 1964/10/01
Data End: 2004/09/30
Timestep: Hourly
Precip Scale: 1.09
Version: 2013/08/23

POC Thresholds

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Low Flow Threshold for POC1:	25 Percent of the 2 Year
High Flow Threshold for POC1:	10 Year
Low Flow Threshold for POC2:	25 Percent of the 2 Year
High Flow Threshold for POC2:	10 Year
Low Flow Threshold for POC3:	25 Percent of the 2 Year
High Flow Threshold for POC3:	10 Year
Low Flow Threshold for POC5:	25 Percent of the 2 Year
High Flow Threshold for POC5:	10 Year
Low Flow Threshold for POC6:	25 Percent of the 2 Year
High Flow Threshold for POC6:	10 Year
Low Flow Threshold for POC7:	25 Percent of the 2 Year
High Flow Threshold for POC7:	10 Year
Low Flow Threshold for POC8:	25 Percent of the 2 Year
High Flow Threshold for POC8:	10 Year
Low Flow Threshold for POC9:	25 Percent of the 2 Year
High Flow Threshold for POC9:	10 Year
Low Flow Threshold for POC10:	25 Percent of the 2 Year
High Flow Threshold for POC10:	10 Year

Low Flow Threshold for POC11:	25 Percent of the 2 Year
High Flow Threshold for POC11:	10 Year
Low Flow Threshold for POC12:	25 Percent of the 2 Year
High Flow Threshold for POC12:	10 Year
Low Flow Threshold for POC13:	25 Percent of the 2 Year
High Flow Threshold for POC13:	10 Year
Low Flow Threshold for POC17:	25 Percent of the 2 Year
High Flow Threshold for POC17:	10 Year
Low Flow Threshold for POC20:	25 Percent of the 2 Year
High Flow Threshold for POC20:	10 Year
Low Flow Threshold for POC21:	25 Percent of the 2 Year
High Flow Threshold for POC21:	10 Year
Low Flow Threshold for POC22:	25 Percent of the 2 Year
High Flow Threshold for POC22:	10 Year
Low Flow Threshold for POC23:	25 Percent of the 2 Year
High Flow Threshold for POC23:	10 Year
Low Flow Threshold for POC24:	25 Percent of the 2 Year
High Flow Threshold for POC24:	10 Year
Low Flow Threshold for POC25:	25 Percent of the 2 Year
High Flow Threshold for POC25:	10 Year
Low Flow Threshold for POC26:	25 Percent of the 2 Year
High Flow Threshold for POC26:	10 Year
Low Flow Threshold for POC27:	25 Percent of the 2 Year
High Flow Threshold for POC27:	10 Year
Low Flow Threshold for POC28:	25 Percent of the 2 Year
High Flow Threshold for POC28:	10 Year

DRAFT

Landuse Basin Data

Pre-Project Land Use

AC01 AC03

Bypass: No

GroundWater: No

Pervious Land Use	Acres
D,Grass,Steep(2-5%)	146.09
Pervious Total	146.09

Impervious Land Use	Acres
Impervious Total	0
Basin Total	146.09

Element Flows To:

Surface	Interflow	Groundwater
Channel 1	Channel 1	

DRAFT

AC02

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
D,Grass,Steep(2-5%)	13.65
Pervious Total	13.65

Impervious Land Use	Acres
Impervious Total	0
Basin Total	13.65

Element Flows To:

Surface	Interflow	Groundwater
Channel 1	Channel 1	

DRAFT

Off-site and pre- SB 7

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
D,Grass,Steep(2-5%)	360.62
Pervious Total	360.62

Impervious Land Use	Acres
Impervious Total	0
Basin Total	360.62

Element Flows To:

Surface	Interflow	Groundwater
POC 24	POC 24	

DRAFT

Basin 4

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
D,Grass,Mod (1-2%)	44.24
Pervious Total	44.24

Impervious Land Use	Acres
Impervious Total	0
Basin Total	44.24

Element Flows To:

Surface	Interflow	Groundwater
POC 23	POC 23	

DRAFT

Basin 5

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
D,Grass,Mod (1-2%)	209.71
Pervious Total	209.71

Impervious Land Use	Acres
Impervious Total	0
Basin Total	209.71

Element Flows To:

Surface	Interflow	Groundwater
POC 22	POC 22	

DRAFT

Basin 6

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
D,Grass,Steep(2-5%)	83.53
Pervious Total	83.53

Impervious Land Use	Acres
Impervious Total	0
Basin Total	83.53

Element Flows To:

Surface	Interflow	Groundwater
POC 28	POC 28	

DRAFT

Basin 7

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
D,Grass,VSteep(>5%)	161.4
Pervious Total	161.4

Impervious Land Use	Acres
Impervious Total	0
Basin Total	161.4

Element Flows To:

Surface	Interflow	Groundwater
POC 25	POC 25	

DRAFT

PP 25

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
D,Grass,Steep(2-5%)	28.39
Pervious Total	28.39

Impervious Land Use	Acres
Impervious Total	0
Basin Total	28.39

Element Flows To:

Surface	Interflow	Groundwater
POC 25	POC 25	

DRAFT

PP 21

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
D,Grass,Mod (1-2%)	175.37
Pervious Total	175.37

Impervious Land Use	Acres
Impervious Total	0
Basin Total	175.37

Element Flows To:

Surface	Interflow	Groundwater
POC 21	POC 21	

DRAFT

PP 20

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
D,Grass,Flat(0-1%)	107.12
Pervious Total	107.12

Impervious Land Use	Acres
Impervious Total	0
Basin Total	107.12

Element Flows To:

Surface	Interflow	Groundwater
POC 20	POC 20	

DRAFT

PP 19

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
D,Grass,Mod (1-2%)	36.28
Pervious Total	36.28

Impervious Land Use	Acres
Impervious Total	0
Basin Total	36.28

Element Flows To:

Surface	Interflow	Groundwater
POC 20	POC 20	

DRAFT

PP 18 (AC 21a)

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
D,Grass,Mod (1-2%)	130.66
Pervious Total	130.66

Impervious Land Use	Acres
Impervious Total	0
Basin Total	130.66

Element Flows To:

Surface	Interflow	Groundwater
SB 18 SF	SB 18 SF	

DRAFT

SB 97 (AC20) offsite

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
D,Grass,Mod (1-2%)	409.47
Pervious Total	409.47

Impervious Land Use	Acres
Impervious Total	0
Basin Total	409.47

Element Flows To:

Surface	Interflow	Groundwater
Offsite 97	Offsite 97	

DRAFT

PP 17 (AC 22)

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
D,Grass,Mod (1-2%)	106.73
Pervious Total	106.73

Impervious Land Use	Acres
Impervious Total	0
Basin Total	106.73

Element Flows To:

Surface	Interflow	Groundwater
SB 17 SF	SB 17 SF	

DRAFT

AC 21B 19

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
D,Grass,Flat(0-1%)	18.36
Pervious Total	18.36

Impervious Land Use	Acres
Impervious Total	0
Basin Total	18.36

Element Flows To:

Surface	Interflow	Groundwater
POC 17/18	POC 17/18	

DRAFT

PP 8

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
D,Grass,Steep(2-5%)	430.61
Pervious Total	430.61

Impervious Land Use	Acres
Imperv,Steep(2-5%)	8.93
Impervious Total	8.93
Basin Total	439.54

Element Flows To:

Surface	Interflow	Groundwater
Channel 8	Channel 8	

DRAFT

AC 32 (part)

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
D,Grass,Mod (1-2%)	54.28
Pervious Total	54.28

Impervious Land Use	Acres
Impervious Total	0
Basin Total	54.28

Element Flows To:

Surface	Interflow	Groundwater
Channel 8	Channel 8	

DRAFT

AC 34

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
D,Grass,Steep(2-5%)	7.27
Pervious Total	7.27

Impervious Land Use	Acres
Impervious Total	0
Basin Total	7.27

Element Flows To:

Surface	Interflow	Groundwater
NF	NF	

DRAFT

AC 23

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
D,Grass,Flat(0-1%)	108.47
Pervious Total	108.47

Impervious Land Use	Acres
Impervious Total	0
Basin Total	108.47

Element Flows To:

Surface	Interflow	Groundwater
SF	SF	

DRAFT

AC 24 (part) 25

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
D,Grass,Steep(2-5%)	54.3
Pervious Total	54.3

Impervious Land Use	Acres
Impervious Total	0
Basin Total	54.3

Element Flows To:

Surface	Interflow	Groundwater
Channel 13	Channel 13	

DRAFT

PP 13

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
D,Grass,Mod (1-2%)	25.07
Pervious Total	25.07

Impervious Land Use	Acres
Impervious Total	0
Basin Total	25.07

Element Flows To:

Surface	Interflow	Groundwater
Channel 13	Channel 13	

DRAFT

AC 26

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
D,Grass,Mod (1-2%)	14.25
Pervious Total	14.25

Impervious Land Use	Acres
Impervious Total	0
Basin Total	14.25

Element Flows To:

Surface	Interflow	Groundwater
POC 6	POC 6	

DRAFT

AC 35 (part)

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
D,Grass,Mod (1-2%)	59.03
Pervious Total	59.03

Impervious Land Use	Acres
Impervious Total	0
Basin Total	59.03

Element Flows To:

Surface	Interflow	Groundwater
POC 6	POC 6	

DRAFT

SB 102

Bypass: No

GroundWater: No

Pervious Land Use	Acres
D,Urban,Mod (1-2%)	188.16
Pervious Total	188.16

Impervious Land Use	Acres
Imperv,Mod (1-2%)	160.24
Impervious Total	160.24
Basin Total	348.4

Element Flows To:

Surface	Interflow	Groundwater
Off-site 102	Off-site 102	

DRAFT

AC 36 37 35(part)

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
D,Grass,Mod (1-2%)	77.93
Pervious Total	77.93

Impervious Land Use	Acres
Imperv,Mod (1-2%)	3.99
Impervious Total	3.99
Basin Total	81.92

Element Flows To:

Surface	Interflow	Groundwater
Upstream POC 5	Upstream POC 5	

DRAFT

AC 38

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
D,Grass,Mod (1-2%)	10.82
Pervious Total	10.82

Impervious Land Use	Acres
Imperv,Mod (1-2%)	1.72
Impervious Total	1.72
Basin Total	12.54

Element Flows To:

Surface	Interflow	Groundwater
Urban 2	Urban 2	

DRAFT

AC 39

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
D,Grass,Mod (1-2%)	111.26
Pervious Total	111.26

Impervious Land Use	Acres
Impervious Total	0
Basin Total	111.26

Element Flows To:

Surface	Interflow	Groundwater
Channel 12	Channel 12	

DRAFT

AC 40 41

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
D,Grass,Steep(2-5%)	69.57
Pervious Total	69.57

Impervious Land Use	Acres
Impervious Total	0
Basin Total	69.57

Element Flows To:

Surface	Interflow	Groundwater
Channel 12	Channel 12	

DRAFT

AC 42

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
C,Urban,Flat(0-1%)	4.95
D,Grass,Flat(0-1%)	13.22
Pervious Total	18.17

Impervious Land Use	Acres
Impervious Total	0
Basin Total	18.17

Element Flows To:

Surface	Interflow	Groundwater
Upstream POC 3/4	Upstream POC 3/4	

DRAFT

AC 45

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
C,Grass,Mod (1-2%)	13.52
D,Grass,Mod (1-2%)	6.74
Pervious Total	20.26

Impervious Land Use	Acres
Impervious Total	0
Basin Total	20.26

Element Flows To:

Surface	Interflow	Groundwater
POC 3/4	POC 3/4	

DRAFT

AC 46

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
C,Grass,Flat(0-1%)	1.21
D,Grass,Flat(0-1%)	13.02
Pervious Total	14.23

Impervious Land Use	Acres
Imperv,Flat(0-1%)	1.51
Impervious Total	1.51
Basin Total	15.74

Element Flows To:

Surface	Interflow	Groundwater
Urban 3	Urban 3	

DRAFT

AC 43

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
B,Grass,Flat(0-1%)	25.64
D,Grass,Flat(0-1%)	81.62
Pervious Total	107.26

Impervious Land Use	Acres
Impervious Total	0
Basin Total	107.26

Element Flows To:

Surface	Interflow	Groundwater
POC 11	POC 11	

DRAFT

AC 44 (part2)

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
C,Grass,Steep(2-5%)	0.41
D,Grass,Steep(2-5%)	15.08
Pervious Total	15.49

Impervious Land Use	Acres
Impervious Total	0
Basin Total	15.49

Element Flows To:

Surface	Interflow	Groundwater
SF POC 3/4	SF POC 3/4	

DRAFT

AC 44 (part1)

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
B,Grass,Steep(2-5%)	2.86
D,Grass,Steep(2-5%)	27.83
Pervious Total	30.69

Impervious Land Use	Acres
Impervious Total	0
Basin Total	30.69

Element Flows To:

Surface	Interflow	Groundwater
POC 11	POC 11	

DRAFT

AC 47 part 2

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
C,Grass,Flat(0-1%)	9.51
C,Grass,Steep(2-5%)	10.01
Pervious Total	19.52

Impervious Land Use	Acres
Impervious Total	0
Basin Total	19.52

Element Flows To:

Surface	Interflow	Groundwater
Trib 9	Trib 9	

DRAFT

PP 9

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
B,Grass,Steep(2-5%)	1.66
C,Grass,Steep(2-5%)	14.02
Pervious Total	15.68

Impervious Land Use	Acres
Impervious Total	0
Basin Total	15.68

Element Flows To:

Surface	Interflow	Groundwater
Trib 9	Trib 9	

DRAFT

AC 47 part 3

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
D,Grass,Mod (1-2%)	11.12
C,Grass,Mod (1-2%)	35.05
Pervious Total	46.17

Impervious Land Use	Acres
Imperv,Mod (1-2%)	1.51
Impervious Total	1.51
Basin Total	47.68

Element Flows To:

Surface	Interflow	Groundwater
Upstream POC 2	Upstream POC 2	

DRAFT

AC 48 (part)

Bypass: No

GroundWater: No

Pervious Land Use	Acres
C,Grass,Flat(0-1%)	26.47
D,Grass,Flat(0-1%)	6.02
Pervious Total	32.49

Impervious Land Use	Acres
Imperv,Flat(0-1%)	6.62
Impervious Total	6.62
Basin Total	39.11

Element Flows To:

Surface	Interflow	Groundwater
Upstream POC 1	Upstream POC 1	

DRAFT

AC 48 (part 2)

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
C,Grass,Mod (1-2%)	26.48
D,Grass,Mod (1-2%)	6.02
Pervious Total	32.5

Impervious Land Use	Acres
Impervious Total	0
Basin Total	32.5

Element Flows To:

Surface	Interflow	Groundwater
POC 1	POC 1	

DRAFT

Basin 44

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
D,Grass,Mod (1-2%)	153.03
Pervious Total	153.03

Impervious Land Use	Acres
Impervious Total	0
Basin Total	153.03

Element Flows To:

Surface	Interflow	Groundwater
Urban 1	Urban 1	

DRAFT

SB 104

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
D,Urban,Mod (1-2%)	16.7
Pervious Total	16.7

Impervious Land Use	Acres
Imperv,Mod (1-2%)	12.67
Impervious Total	12.67
Basin Total	29.37

Element Flows To:

Surface	Interflow	Groundwater
Urban 1	Urban 1	

DRAFT

SB 105

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
D,Urban,Mod (1-2%)	80.76
Pervious Total	80.76

Impervious Land Use	Acres
Imperv,Mod (1-2%)	276.25
Impervious Total	276.25
Basin Total	357.01

Element Flows To:

Surface	Interflow	Groundwater
Off-site 105	Off-site 105	

DRAFT

SB 103

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
D,Urban,Mod (1-2%)	437.79
Pervious Total	437.79

Impervious Land Use	Acres
Imperv,Mod (1-2%)	604.61
Impervious Total	604.61
Basin Total	1042.4

Element Flows To:

Surface	Interflow	Groundwater
Off-site 103	Off-site 103	

DRAFT

Off-site 98

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
D,Urban,Mod (1-2%)	1.89
Pervious Total	1.89

Impervious Land Use	Acres
Imperv,Mod (1-2%)	17.01
Impervious Total	17.01
Basin Total	18.9

Element Flows To:

Surface	Interflow	Groundwater
POC 2	POC 2	

DRAFT

SB 99

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
D,Urban,Mod (1-2%)	6.49
Pervious Total	6.49

Impervious Land Use	Acres
Imperv,Mod (1-2%)	1.01
Impervious Total	1.01
Basin Total	7.5

Element Flows To:

Surface	Interflow	Groundwater
Urban 4	Urban 4	

DRAFT

SB 100

Bypass: No

GroundWater: No

Pervious Land Use	Acres
D,Urban,Mod (1-2%)	3.51
Pervious Total	3.51

Impervious Land Use	Acres
Imperv,Mod (1-2%)	21.89
Impervious Total	21.89
Basin Total	25.4

Element Flows To:

Surface	Interflow	Groundwater
Urban 100	Urban 100	

DRAFT

SB 101

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
D,Urban,Mod (1-2%)	3.14
Pervious Total	3.14

Impervious Land Use	Acres
Imperv,Mod (1-2%)	3.14
Impervious Total	3.14
Basin Total	6.28

Element Flows To:

Surface	Interflow	Groundwater
Urban 101	Urban 101	

DRAFT

Mitigated Land Use

SB 21

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
D,Grass,Steep(2-5%)	13.25
D,Urban,Steep(2-5%)	69.15
Pervious Total	82.4

Impervious Land Use	Acres
Imperv,Steep(2-5%)	47.85
Impervious Total	47.85
Basin Total	130.25

Element Flows To:

Surface	Interflow	Groundwater
HMB 24 (was 26)	HMB 24 (was 26)	

DRAFT

Open space

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
D,Grass,Steep(2-5%)	30.73
Pervious Total	30.73

Impervious Land Use	Acres
Impervious Total	0
Basin Total	30.73

Element Flows To:

Surface	Interflow	Groundwater
POC 26	POC 26	

DRAFT

SB 7

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
D,Urban,Steep(2-5%)	49.36
D,Grass,Steep(2-5%)	6.15
Pervious Total	55.51

Impervious Land Use	Acres
Imperv,Steep(2-5%)	46.69
Impervious Total	46.69
Basin Total	102.2

Element Flows To:

Surface	Interflow	Groundwater
HMB 22 (was 24)	HMB 22 (was 24)	

DRAFT

Basin 4

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
D,Grass,Steep(2-5%)	252.32
Pervious Total	252.32

Impervious Land Use	Acres
Impervious Total	0
Basin Total	252.32

Element Flows To:

Surface	Interflow	Groundwater
POC 24	POC 24	

DRAFT

SB 8

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
D,Urban,Mod (1-2%)	3.13
D,Grass,Mod (1-2%)	0.47
Pervious Total	3.6

Impervious Land Use	Acres
Imperv,Mod (1-2%)	4.75
Impervious Total	4.75
Basin Total	8.35

Element Flows To:

Surface	Interflow	Groundwater
HMB 21 (was 23)	HMB 21 (was 23)	

DRAFT

SB 57 (partial)

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
D,Grass,Mod (1-2%)	5.38
Pervious Total	5.38

Impervious Land Use	Acres
Impervious Total	0
Basin Total	5.38

Element Flows To:

Surface	Interflow	Groundwater
POC 23	POC 23	

DRAFT

SB 22

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
D,Urban,Mod (1-2%)	74.08
D,Grass,Mod (1-2%)	15.14
Pervious Total	89.22

Impervious Land Use	Acres
Imperv,Mod (1-2%)	88.98
Impervious Total	88.98
Basin Total	178.2

Element Flows To:

Surface	Interflow	Groundwater
HMB 20 (was 22)	HMB 20 (was 22)	

DRAFT

SB 57 (partial)

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
D,Grass,Mod (1-2%)	14.19
Pervious Total	14.19

Impervious Land Use	Acres
Impervious Total	0
Basin Total	14.19

Element Flows To:

Surface	Interflow	Groundwater
DB 7 (was 8)	DB 7 (was 8)	

DRAFT

Offsite (SB 94 95 96)

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
D,Grass,Mod (1-2%)	71.54
Pervious Total	71.54

Impervious Land Use	Acres
Impervious Total	0
Basin Total	71.54

Element Flows To:

Surface	Interflow	Groundwater
POC 22	POC 22	

DRAFT

SB 17

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
D,Urban,Steep(2-5%)	44.03
D,Grass,Steep(2-5%)	6.47
Pervious Total	50.5

Impervious Land Use	Acres
Imperv,Steep(2-5%)	21.85
Impervious Total	21.85
Basin Total	72.35

Element Flows To:

Surface	Interflow	Groundwater
HMB 26 (was 28)	HMB 26 (was 28)	

DRAFT

SB 58

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
D,Grass,Steep(2-5%)	18.44
Pervious Total	18.44

Impervious Land Use	Acres
Impervious Total	0
Basin Total	18.44

Element Flows To:

Surface	Interflow	Groundwater
POC 28	POC 28	

DRAFT

SB 6

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
D,Urban,VSteep(>5%)	38.63
D,Grass,VSteep(>5%)	11.55
Pervious Total	50.18

Impervious Land Use	Acres
Imperv,VSteep(>5%)	66.69
Impervious Total	66.69
Basin Total	116.87

Element Flows To:

Surface	Interflow	Groundwater
HMB 25 (was 27)	HMB 25 (was 27)	

DRAFT

SB 28

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
D,Urban,Steep(2-5%)	5.02
D,Grass,Steep(2-5%)	24.93
Pervious Total	29.95

Impervious Land Use	Acres
Imperv,Steep(2-5%)	9.39
Impervious Total	9.39
Basin Total	39.34

Element Flows To:

Surface	Interflow	Groundwater
HMB 23 (was 25)	HMB 23 (was 25)	

DRAFT

SB 69 83

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
D,Grass,Steep(2-5%)	7.51
Pervious Total	7.51

Impervious Land Use	Acres
Impervious Total	0
Basin Total	7.51

Element Flows To:

Surface	Interflow	Groundwater
POC 25	POC 25	

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SB 47

Bypass: No

GroundWater: No

Pervious Land Use	Acres
D,Grass,Steep(2-5%)	14.74
Pervious Total	14.74

Impervious Land Use	Acres
Impervious Total	0
Basin Total	14.74

Element Flows To:

Surface	Interflow	Groundwater
POC 21	POC 21	

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SB 48 62 70 85

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
D,Grass,Flat(0-1%)	30.86
Pervious Total	30.86

Impervious Land Use	Acres
Impervious Total	0
Basin Total	30.86

Element Flows To:

Surface	Interflow	Groundwater
POC 20	POC 20	

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SB 5

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
D,Urban,Mod (1-2%)	31.39
D,Grass,Mod (1-2%)	13.35
Pervious Total	44.74

Impervious Land Use	Acres
Imperv,Mod (1-2%)	38.65
Impervious Total	38.65
Basin Total	83.39

Element Flows To:

Surface	Interflow	Groundwater
HMB 18 (was 19 and 20)	HMB 18 (was 19 and 20)	

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Basin 20

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
D,Grass,Mod (1-2%)	409.47
Pervious Total	409.47

Impervious Land Use	Acres
Impervious Total	0
Basin Total	409.47

Element Flows To:

Surface	Interflow	Groundwater
Offsite 97	Offsite 97	

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SB 19

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
D,Urban,Mod (1-2%)	42.13
D,Grass,Mod (1-2%)	2.33
Pervious Total	44.46

Impervious Land Use	Acres
Imperv,Mod (1-2%)	46.65
Impervious Total	46.65
Basin Total	91.11

Element Flows To:

Surface	Interflow	Groundwater
HMB 17 (was 18)	HMB 17 (was 18)	

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SB 61

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
D,Grass,Flat(0-1%)	34.49
Pervious Total	34.49

Impervious Land Use	Acres
Impervious Total	0
Basin Total	34.49

Element Flows To:

Surface	Interflow	Groundwater
SB 18 SF	SB 18 SF	

DRAFT

SB 71 74 43

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
D,Grass,Mod (1-2%)	38.53
Pervious Total	38.53

Impervious Land Use	Acres
Impervious Total	0
Basin Total	38.53

Element Flows To:

Surface	Interflow	Groundwater
SB 17 SF	SB 17 SF	

DRAFT

SB 51 52

Bypass: No

GroundWater: No

Pervious Land Use	Acres
D,Grass,Flat(0-1%)	12.55
Pervious Total	12.55

Impervious Land Use	Acres
Impervious Total	0
Basin Total	12.55

Element Flows To:

Surface	Interflow	Groundwater
POC 17/18	POC 17/18	

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SB 9

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
D,Urban,Mod (1-2%)	51.68
D,Grass,Mod (1-2%)	9.96
Pervious Total	61.64

Impervious Land Use	Acres
Imperv,Mod (1-2%)	53.08
Impervious Total	53.08
Basin Total	114.72

Element Flows To:

Surface	Interflow	Groundwater
HMB 16 (was 17)	HMB 16 (was 17)	

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SB 1

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
D,Urban,Steep(2-5%)	97.16
D,Grass,Steep(2-5%)	45.43
Pervious Total	142.59

Impervious Land Use	Acres
Imperv,Steep(2-5%)	325.6
Impervious Total	325.6
Basin Total	468.19

Element Flows To:

Surface	Interflow	Groundwater
HMB 8b	HMB 8b	

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SB 86

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
D,Grass,Mod (1-2%)	5.75
Pervious Total	5.75

Impervious Land Use	Acres
Impervious Total	0
Basin Total	5.75

Element Flows To:

Surface	Interflow	Groundwater
POC 7	POC 7	

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SB 4

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
D,Urban,Mod (1-2%)	7.68
D,Grass,Mod (1-2%)	1.57
Pervious Total	9.25

Impervious Land Use	Acres
Imperv,Mod (1-2%)	2.59
Impervious Total	2.59
Basin Total	11.84

Element Flows To:

Surface	Interflow	Groundwater
HMB 7	HMB 7	

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SB 41 42

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
D,Grass,Mod (1-2%)	5.69
Pervious Total	5.69

Impervious Land Use	Acres
Impervious Total	0
Basin Total	5.69

Element Flows To:

Surface	Interflow	Groundwater
Urban 1	Urban 1	

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SB 75 35

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
D,Grass,Mod (1-2%)	36.37
Pervious Total	36.37

Impervious Land Use	Acres
Impervious Total	0
Basin Total	36.37

Element Flows To:

Surface	Interflow	Groundwater
Channel 13	Channel 13	

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SB 26

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
D,Urban,Mod (1-2%)	12.15
D,Grass,Mod (1-2%)	2.1
Pervious Total	14.25

Impervious Land Use	Acres
Imperv,Mod (1-2%)	10.18
Impervious Total	10.18
Basin Total	24.43

Element Flows To:

Surface	Interflow	Groundwater
HMB 13	HMB 13	

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SB 84

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
D,Grass,Flat(0-1%)	71.8
Pervious Total	71.8

Impervious Land Use	Acres
Impervious Total	0
Basin Total	71.8

Element Flows To:

Surface	Interflow	Groundwater
SF	SF	

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SB 54

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
D,Grass,Steep(2-5%)	6.82
Pervious Total	6.82

Impervious Land Use	Acres
Impervious Total	0
Basin Total	6.82

Element Flows To:

Surface	Interflow	Groundwater
NF	NF	

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SB 16

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
D,Urban,Mod (1-2%)	29.89
D,Grass,Mod (1-2%)	5.43
Pervious Total	35.32

Impervious Land Use	Acres
Imperv,Mod (1-2%)	85.24
Impervious Total	85.24
Basin Total	120.56

Element Flows To:

Surface	Interflow	Groundwater
HMB 6	HMB 6	

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SB 55

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
D,Grass,Mod (1-2%)	18.02
Pervious Total	18.02

Impervious Land Use	Acres
Impervious Total	0
Basin Total	18.02

Element Flows To:

Surface	Interflow	Groundwater
Channel 8	Channel 8	

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SB 53 88

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
D,Grass,Mod (1-2%)	14.29
D,Grass,Flat(0-1%)	44.52
Pervious Total	58.81

Impervious Land Use	Acres
Impervious Total	0
Basin Total	58.81

Element Flows To:

Surface	Interflow	Groundwater
POC 6	POC 6	

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SB 23 111

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
D,Grass,Mod (1-2%)	12.06
D,Urban,Mod (1-2%)	8.01
Pervious Total	20.07

Impervious Land Use	Acres
Imperv,Mod (1-2%)	12.28
Impervious Total	12.28
Basin Total	32.35

Element Flows To:

Surface	Interflow	Groundwater
HMB 5	HMB 5	

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SB 79 90 80

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
D,Grass,Mod (1-2%)	75.72
Pervious Total	75.72

Impervious Land Use	Acres
Impervious Total	0
Basin Total	75.72

Element Flows To:

Surface	Interflow	Groundwater
Upstream POC 5	Upstream POC 5	

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SB 34

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
D,Grass,Flat(0-1%)	22.67
Pervious Total	22.67

Impervious Land Use	Acres
Impervious Total	0
Basin Total	22.67

Element Flows To:

Surface	Interflow	Groundwater
DB 2	DB 2	

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SB 27

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
D,Urban,Mod (1-2%)	50.67
D,Grass,Mod (1-2%)	3.96
Pervious Total	54.63

Impervious Land Use	Acres
Imperv,Mod (1-2%)	27.63
Impervious Total	27.63
Basin Total	82.26

Element Flows To:

Surface	Interflow	Groundwater
HMB 12	HMB 12	

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SB 30

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
C,Urban,Mod (1-2%)	0.31
D,Urban,Mod (1-2%)	0.81
C,Grass,Mod (1-2%)	1.4
D,Grass,Mod (1-2%)	0.16
Pervious Total	2.68

Impervious Land Use	Acres
Imperv,Mod (1-2%)	10.18
Impervious Total	10.18
Basin Total	12.86

Element Flows To:

Surface	Interflow	Groundwater
HMB 4	HMB 4	

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SB 50 (part 2)

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
D,Grass,Steep(2-5%)	11.79
Pervious Total	11.79

Impervious Land Use	Acres
Impervious Total	0
Basin Total	11.79

Element Flows To:

Surface	Interflow	Groundwater
SF POC 3/4	SF POC 3/4	

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SB 29

Bypass: No

GroundWater: No

Pervious Land Use	Acres
D,Urban,Mod (1-2%)	10.87
Pervious Total	10.87

Impervious Land Use	Acres
Imperv,Mod (1-2%)	3.62
Impervious Total	3.62
Basin Total	14.49

Element Flows To:

Surface	Interflow	Groundwater
HMB 11	HMB 11	

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SB 25

Bypass: No

GroundWater: No

Pervious Land Use	Acres
B,Grass,Flat(0-1%)	24.11
B,Urban,Flat(0-1%)	3.73
C,Urban,Flat(0-1%)	0.05
D,Grass,Flat(0-1%)	10.93
D,Urban,Flat(0-1%)	39.69
Pervious Total	78.51

Impervious Land Use	Acres
Imperv,Flat(0-1%)	21.86
Impervious Total	21.86
Basin Total	100.37

Element Flows To:

Surface	Interflow	Groundwater
HMB 10	HMB 10	

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SB 3

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
C,Urban,Steep(2-5%)	9.91
D,Urban,Steep(2-5%)	4.04
C,Grass,Steep(2-5%)	2.93
D,Grass,Steep(2-5%)	2.1
Pervious Total	18.98

Impervious Land Use	Acres
Imperv,Steep(2-5%)	11.32
Impervious Total	11.32
Basin Total	30.3

Element Flows To:

Surface	Interflow	Groundwater
HMB 3	HMB 3	

DRAFT

SB 112 76 89 56 49

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
D,Grass,Steep(2-5%)	73.24
Pervious Total	73.24

Impervious Land Use	Acres
Impervious Total	0
Basin Total	73.24

Element Flows To:

Surface	Interflow	Groundwater
Channel 12	Channel 12	

DRAFT

SB 50 (part1)

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
D,Grass,Steep(2-5%)	15.9
Pervious Total	15.9

Impervious Land Use	Acres
Impervious Total	0
Basin Total	15.9

Element Flows To:

Surface	Interflow	Groundwater
POC 11	POC 11	

DRAFT

SB 91 40 73

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
C,Grass,Flat(0-1%)	13.23
D,Grass,Flat(0-1%)	12.16
Pervious Total	25.39

Impervious Land Use	Acres
Impervious Total	0
Basin Total	25.39

Element Flows To:

Surface	Interflow	Groundwater
Upstream POC 3/4	Upstream POC 3/4	

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SB 81

Bypass: No

GroundWater: No

Pervious Land Use	Acres
D,Grass,Mod (1-2%)	8.17
Pervious Total	8.17

Impervious Land Use	Acres
Imperv,Flat(0-1%)	1.59
Impervious Total	1.59
Basin Total	9.76

Element Flows To:

Surface	Interflow	Groundwater
Urban 2	Urban 2	

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SB 44 37

Bypass: No

GroundWater: No

Pervious Land Use	Acres
C,Grass,Flat(0-1%)	0.55
D,Grass,Flat(0-1%)	7.92
Pervious Total	8.47

Impervious Land Use	Acres
Imperv,Flat(0-1%)	1.51
Impervious Total	1.51
Basin Total	9.98

Element Flows To:

Surface	Interflow	Groundwater
Urban 3	Urban 3	

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SB 2

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
C,Urban,Mod (1-2%)	0.53
D,Grass,Mod (1-2%)	0.27
D,Urban,Mod (1-2%)	1.17
C,Grass,Mod (1-2%)	0.11
Pervious Total	2.08

Impervious Land Use	Acres
Imperv,Mod (1-2%)	15.27
Impervious Total	15.27
Basin Total	17.35

Element Flows To:

Surface	Interflow	Groundwater
HMB 2	HMB 2	

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SB 38

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
D,Grass,Flat(0-1%)	0.36
C,Grass,Flat(0-1%)	14.08
Pervious Total	14.44

Impervious Land Use	Acres
Impervious Total	0
Basin Total	14.44

Element Flows To:

Surface	Interflow	Groundwater
upstream POC 2	upstream POC 2	

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SB 78

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
C,Grass,Flat(0-1%)	15.88
D,Grass,Flat(0-1%)	10.26
Pervious Total	26.14

Impervious Land Use	Acres
Imperv,Flat(0-1%)	6.14
Impervious Total	6.14
Basin Total	32.28

Element Flows To:

Surface	Interflow	Groundwater
POC 1	POC 1	

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SB 72 39

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
C,Grass,Flat(0-1%)	6.52
C,Grass,Steep(2-5%)	7.36
Pervious Total	13.88

Impervious Land Use	Acres
Impervious Total	0
Basin Total	13.88

Element Flows To:

Surface	Interflow	Groundwater
Trib 9	Trib 9	

DRAFT

HMB 1

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
B,Urban,Steep(2-5%)	0.07
C,Urban,Steep(2-5%)	8.65
D,Urban,Steep(2-5%)	0.19
B,Grass,Steep(2-5%)	3.48
C,Grass,Steep(2-5%)	1.55
Pervious Total	13.94

Impervious Land Use	Acres
Imperv,Steep(2-5%)	3.08
Impervious Total	3.08
Basin Total	17.02

Element Flows To:

Surface	Interflow	Groundwater
HMB 9	HMB 9	

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Urban 104

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
D,Urban,Mod (1-2%)	16.7
Pervious Total	16.7

Impervious Land Use	Acres
Imperv,Mod (1-2%)	12.67
Impervious Total	12.67
Basin Total	29.37

Element Flows To:

Surface	Interflow	Groundwater
Urban 1	Urban 1	

DRAFT

Off-site 105

Bypass: No

GroundWater: No

Pervious Land Use	Acres
D,Urban,Mod (1-2%)	80.76
Pervious Total	80.76

Impervious Land Use	Acres
Imperv,Mod (1-2%)	276.25
Impervious Total	276.25
Basin Total	357.01

Element Flows To:

Surface	Interflow	Groundwater
Urban 105	Urban 105	

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Off-site 103

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
D,Urban,Mod (1-2%)	437.79
Pervious Total	437.79

Impervious Land Use	Acres
Imperv,Mod (1-2%)	604.61
Impervious Total	604.61
Basin Total	1042.4

Element Flows To:

Surface	Interflow	Groundwater
Urban 103	Urban 103	

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SB 102

Bypass: No

GroundWater: No

Pervious Land Use	Acres
D,Urban,Mod (1-2%)	188.16
Pervious Total	188.16

Impervious Land Use	Acres
Imperv,Mod (1-2%)	160.24
Impervious Total	160.24
Basin Total	348.4

Element Flows To:

Surface	Interflow	Groundwater
Urban 102	Urban 102	

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SB 98 110 (urban)

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
D,Urban,Mod (1-2%)	1.89
C,Urban,Flat(0-1%)	0.03
D,Urban,Flat(0-1%)	0.1
C,Grass,Flat(0-1%)	1.16
D,Grass,Flat(0-1%)	0.5
Pervious Total	3.68

Impervious Land Use	Acres
Imperv,Flat(0-1%)	1.21
Imperv,Mod (1-2%)	17.01
Impervious Total	18.22
Basin Total	21.9

Element Flows To:

Surface	Interflow	Groundwater
POC 2	POC 2	

DRAFT

SB 99

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
D,Urban,Mod (1-2%)	1.01
Pervious Total	1.01

Impervious Land Use	Acres
Imperv,Mod (1-2%)	6.49
Impervious Total	6.49
Basin Total	7.5

Element Flows To:

Surface	Interflow	Groundwater
Urban 4	Urban 4	

DRAFT

SB 101

Bypass: No

GroundWater: No

Pervious Land Use	Acres
D,Urban,Mod (1-2%)	3.14
Pervious Total	3.14

Impervious Land Use	Acres
Imperv,Mod (1-2%)	16.56
Impervious Total	16.56
Basin Total	19.7

Element Flows To:

Surface	Interflow	Groundwater
Urban 101	Urban 101	

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SB 100

Bypass: No

GroundWater: No

Pervious Land Use	Acres
D,Urban,Mod (1-2%)	3.51
Pervious Total	3.51

Impervious Land Use	Acres
Imperv,Mod (1-2%)	21.89
Impervious Total	21.89
Basin Total	25.4

Element Flows To:

Surface	Interflow	Groundwater
Urban 100	Urban 100	

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SB31

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
C,Urban,Mod (1-2%)	4.05
C,Grass,Mod (1-2%)	12.84
D,Urban,Mod (1-2%)	0.66
D,Grass,Mod (1-2%)	2.82
Pervious Total	20.37

Impervious Land Use	Acres
Imperv,Mod (1-2%)	38.87
Impervious Total	38.87
Basin Total	59.24

Element Flows To:

Surface	Interflow	Groundwater
HMB One	HMB One	

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SB 59

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
D,Grass,VSteep(>5%)	30.03
Pervious Total	30.03

Impervious Land Use	Acres
Impervious Total	0
Basin Total	30.03

Element Flows To:

Surface	Interflow	Groundwater
DB 9 (was 10)	DB 9 (was 10)	

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SB 36

Bypass: No

GroundWater: No

Pervious Land Use	Acres
D,Urban,Mod (1-2%)	48.07
D,Grass,Mod (1-2%)	5.89
Pervious Total	53.96

Impervious Land Use	Acres
Imperv,Mod (1-2%)	104.21
Impervious Total	104.21
Basin Total	158.17

Element Flows To:

Surface	Interflow	Groundwater
HMB 19 WQ (was 21)	HMB 19 WQ (was 21)	

DRAFT

SB 46

Bypass:	No
GroundWater:	No

Pervious Land Use	Acres
C,Urban,Steep(2-5%)	10.53
Pervious Total	10.53

Impervious Land Use	Acres
Impervious Total	0
Basin Total	10.53

Element Flows To:

Surface	Interflow	Groundwater
POC 21 SF	POC 21 SF	

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Routing Elements

Pre-Project Routing

Channel 1

Bottom Length: 1850.00 ft.
Bottom Width: 11.00 ft.
Manning's n: 0.03
Channel bottom slope 1: 0.034 To 1
Channel Left side slope 0: 0.5 To 1
Channel right side slope 2: 0.5 To 1
Discharge Structure
Riser Height: 0 ft.
Riser Diameter: 0 in.
Element Flows To:
Outlet 1 Outlet 2
POC 24

Channel Hydraulic Table

Stage(ft)	Area(ac)	Volume(ac-ft)	Discharge(cfs)	Infilt(cfs)
0.0000	0.467	0.000	0.000	0.000
0.0222	0.468	0.010	0.176	0.000
0.0444	0.469	0.020	0.560	0.000
0.0667	0.470	0.031	1.099	0.000
0.0889	0.470	0.041	1.774	0.000
0.1111	0.471	0.052	2.570	0.000
0.1333	0.472	0.062	3.478	0.000
0.1556	0.473	0.073	4.491	0.000
0.1778	0.474	0.083	5.604	0.000
0.2000	0.475	0.094	6.811	0.000
0.2222	0.476	0.104	8.109	0.000
0.2444	0.477	0.115	9.494	0.000
0.2667	0.478	0.126	10.96	0.000
0.2889	0.479	0.136	12.51	0.000
0.3111	0.480	0.147	14.14	0.000
0.3333	0.481	0.158	15.84	0.000
0.3556	0.482	0.168	17.62	0.000
0.3778	0.483	0.179	19.47	0.000
0.4000	0.484	0.190	21.39	0.000
0.4222	0.485	0.201	23.38	0.000
0.4444	0.486	0.211	25.44	0.000
0.4667	0.487	0.222	27.57	0.000
0.4889	0.487	0.233	29.76	0.000
0.5111	0.488	0.244	32.01	0.000
0.5333	0.489	0.255	34.33	0.000
0.5556	0.490	0.266	36.71	0.000
0.5778	0.491	0.277	39.15	0.000
0.6000	0.492	0.288	41.64	0.000
0.6222	0.493	0.298	44.20	0.000
0.6444	0.494	0.309	46.82	0.000
0.6667	0.495	0.320	49.49	0.000
0.6889	0.496	0.331	52.21	0.000
0.7111	0.497	0.343	55.00	0.000
0.7333	0.498	0.354	57.83	0.000
0.7556	0.499	0.365	60.72	0.000
0.7778	0.500	0.376	63.67	0.000

DRAFT

0.8000	0.501	0.387	66.66	0.000
0.8222	0.502	0.398	69.71	0.000
0.8444	0.503	0.409	72.81	0.000
0.8667	0.504	0.420	75.96	0.000
0.8889	0.504	0.432	79.16	0.000
0.9111	0.505	0.443	82.41	0.000
0.9333	0.506	0.454	85.71	0.000
0.9556	0.507	0.465	89.05	0.000
0.9778	0.508	0.477	92.45	0.000
1.0000	0.509	0.488	95.89	0.000
1.0222	0.510	0.499	99.38	0.000
1.0444	0.511	0.511	102.9	0.000
1.0667	0.512	0.522	106.5	0.000
1.0889	0.513	0.533	110.1	0.000
1.1111	0.514	0.545	113.8	0.000
1.1333	0.515	0.556	117.5	0.000
1.1556	0.516	0.568	121.2	0.000
1.1778	0.517	0.579	125.0	0.000
1.2000	0.518	0.591	128.9	0.000
1.2222	0.519	0.602	132.8	0.000
1.2444	0.520	0.614	136.7	0.000
1.2667	0.521	0.625	140.7	0.000
1.2889	0.521	0.637	144.7	0.000
1.3111	0.522	0.649	148.8	0.000
1.3333	0.523	0.660	152.9	0.000
1.3556	0.524	0.672	157.1	0.000
1.3778	0.525	0.684	161.3	0.000
1.4000	0.526	0.695	165.5	0.000
1.4222	0.527	0.707	169.8	0.000
1.4444	0.528	0.719	174.1	0.000
1.4667	0.529	0.730	178.4	0.000
1.4889	0.530	0.742	182.8	0.000
1.5111	0.531	0.754	187.3	0.000
1.5333	0.532	0.766	191.7	0.000
1.5556	0.533	0.778	196.2	0.000
1.5778	0.534	0.790	200.8	0.000
1.6000	0.535	0.801	205.4	0.000
1.6222	0.536	0.813	210.0	0.000
1.6444	0.537	0.825	214.7	0.000
1.6667	0.538	0.837	219.4	0.000
1.6889	0.538	0.849	224.1	0.000
1.7111	0.539	0.861	228.9	0.000
1.7333	0.540	0.873	233.7	0.000
1.7556	0.541	0.885	238.6	0.000
1.7778	0.542	0.897	243.5	0.000
1.8000	0.543	0.909	248.4	0.000
1.8222	0.544	0.921	253.4	0.000
1.8444	0.545	0.933	258.4	0.000
1.8667	0.546	0.946	263.5	0.000
1.8889	0.547	0.958	268.5	0.000
1.9111	0.548	0.970	273.7	0.000
1.9333	0.549	0.982	278.8	0.000
1.9556	0.550	0.994	284.0	0.000
1.9778	0.551	1.007	289.2	0.000
2.0000	0.552	1.019	294.5	0.000
2.0222	0.553	1.031	299.8	0.000

DRAFT

POC 24

Bottom Length: 3435.00 ft.
Bottom Width: 6.00 ft.
Manning's n: 0.035
Channel bottom slope 1: 0.012 To 1
Channel Left side slope 0: 0.5 To 1
Channel right side slope 2: 0.5 To 1
Discharge Structure
Riser Height: 0 ft.
Riser Diameter: 0 in.
Element Flows To:
Outlet 1 Outlet 2
POC 23

Channel Hydraulic Table

Stage(ft)	Area(ac)	Volume(ac-ft)	Discharge(cfs)	Infilt(cfs)
0.0000	0.473	0.000	0.000	0.000
0.0667	0.478	0.031	0.304	0.000
0.1333	0.483	0.063	0.960	0.000
0.2000	0.488	0.096	1.875	0.000
0.2667	0.494	0.129	3.010	0.000
0.3333	0.499	0.162	4.341	0.000
0.4000	0.504	0.195	5.849	0.000
0.4667	0.509	0.229	7.523	0.000
0.5333	0.515	0.263	9.350	0.000
0.6000	0.520	0.298	11.32	0.000
0.6667	0.525	0.333	13.43	0.000
0.7333	0.531	0.368	15.68	0.000
0.8000	0.536	0.403	18.05	0.000
0.8667	0.541	0.439	20.54	0.000
0.9333	0.546	0.475	23.15	0.000
1.0000	0.552	0.512	25.88	0.000
1.0667	0.557	0.549	28.72	0.000
1.1333	0.562	0.586	31.67	0.000
1.2000	0.567	0.624	34.73	0.000
1.2667	0.573	0.662	37.90	0.000
1.3333	0.578	0.701	41.16	0.000
1.4000	0.583	0.739	44.53	0.000
1.4667	0.588	0.778	48.00	0.000
1.5333	0.594	0.818	51.57	0.000
1.6000	0.599	0.858	55.23	0.000
1.6667	0.604	0.898	59.00	0.000
1.7333	0.609	0.938	62.86	0.000
1.8000	0.615	0.979	66.81	0.000
1.8667	0.620	1.020	70.85	0.000
1.9333	0.625	1.062	74.99	0.000
2.0000	0.630	1.104	79.23	0.000
2.0667	0.636	1.146	83.55	0.000
2.1333	0.641	1.188	87.97	0.000
2.2000	0.646	1.231	92.48	0.000
2.2667	0.651	1.275	97.07	0.000
2.3333	0.657	1.318	101.7	0.000
2.4000	0.662	1.362	106.5	0.000
2.4667	0.667	1.407	111.4	0.000
2.5333	0.672	1.451	116.3	0.000
2.6000	0.678	1.496	121.4	0.000

DRAFT

2.6667	0.683	1.542	126.5	0.000
2.7333	0.688	1.587	131.7	0.000
2.8000	0.694	1.633	137.0	0.000
2.8667	0.699	1.680	142.4	0.000
2.9333	0.704	1.727	147.9	0.000
3.0000	0.709	1.774	153.5	0.000
3.0667	0.715	1.821	159.2	0.000
3.1333	0.720	1.869	164.9	0.000
3.2000	0.725	1.917	170.8	0.000
3.2667	0.730	1.966	176.7	0.000
3.3333	0.736	2.015	182.7	0.000
3.4000	0.741	2.064	188.9	0.000
3.4667	0.746	2.114	195.1	0.000
3.5333	0.751	2.164	201.3	0.000
3.6000	0.757	2.214	207.7	0.000
3.6667	0.762	2.265	214.2	0.000
3.7333	0.767	2.316	220.8	0.000
3.8000	0.772	2.367	227.4	0.000
3.8667	0.778	2.419	234.1	0.000
3.9333	0.783	2.471	241.0	0.000
4.0000	0.788	2.523	247.9	0.000
4.0667	0.793	2.576	254.9	0.000
4.1333	0.799	2.629	262.0	0.000
4.2000	0.804	2.682	269.2	0.000
4.2667	0.809	2.736	276.4	0.000
4.3333	0.814	2.790	283.8	0.000
4.4000	0.820	2.845	291.3	0.000
4.4667	0.825	2.900	298.8	0.000
4.5333	0.830	2.955	306.4	0.000
4.6000	0.835	3.010	314.2	0.000
4.6667	0.841	3.066	322.0	0.000
4.7333	0.846	3.123	329.9	0.000
4.8000	0.851	3.179	337.9	0.000
4.8667	0.856	3.236	346.0	0.000
4.9333	0.862	3.293	354.2	0.000
5.0000	0.867	3.351	362.5	0.000
5.0667	0.872	3.409	370.9	0.000
5.1333	0.878	3.467	379.3	0.000
5.2000	0.883	3.526	387.9	0.000
5.2667	0.888	3.585	396.5	0.000
5.3333	0.893	3.645	405.3	0.000
5.4000	0.899	3.704	414.1	0.000
5.4667	0.904	3.764	423.1	0.000
5.5333	0.909	3.825	432.1	0.000
5.6000	0.914	3.886	441.2	0.000
5.6667	0.920	3.947	450.4	0.000
5.7333	0.925	4.008	459.8	0.000
5.8000	0.930	4.070	469.2	0.000
5.8667	0.935	4.132	478.7	0.000
5.9333	0.941	4.195	488.3	0.000
6.0000	0.946	4.258	498.0	0.000
6.0667	0.951	4.321	507.8	0.000

DRAFT

POC 23

Bottom Length: 1339.00 ft.
Bottom Width: 7.00 ft.
Manning's n: 0.035
Channel bottom slope 1: 0.0075 To 1
Channel Left side slope 0: 0.5 To 1
Channel right side slope 2: 0.5 To 1
Discharge Structure
Riser Height: 0 ft.
Riser Diameter: 0 in.
Element Flows To:
Outlet 1 Outlet 2
POC 22

Channel Hydraulic Table

Stage(ft)	Area(ac)	Volume(ac-ft)	Discharge(cfs)	Infilt(cfs)
0.0000	0.215	0.000	0.000	0.000
0.0667	0.217	0.014	0.281	0.000
0.1333	0.219	0.029	0.887	0.000
0.2000	0.221	0.043	1.734	0.000
0.2667	0.223	0.058	2.786	0.000
0.3333	0.225	0.073	4.020	0.000
0.4000	0.227	0.088	5.421	0.000
0.4667	0.229	0.103	6.975	0.000
0.5333	0.231	0.119	8.674	0.000
0.6000	0.233	0.134	10.51	0.000
0.6667	0.235	0.150	12.47	0.000
0.7333	0.237	0.166	14.56	0.000
0.8000	0.239	0.182	16.77	0.000
0.8667	0.241	0.198	19.09	0.000
0.9333	0.243	0.214	21.52	0.000
1.0000	0.245	0.230	24.06	0.000
1.0667	0.248	0.247	26.71	0.000
1.1333	0.250	0.263	29.46	0.000
1.2000	0.252	0.280	32.30	0.000
1.2667	0.254	0.297	35.25	0.000
1.3333	0.256	0.314	38.29	0.000
1.4000	0.258	0.331	41.42	0.000
1.4667	0.260	0.348	44.65	0.000
1.5333	0.262	0.366	47.96	0.000
1.6000	0.264	0.383	51.37	0.000
1.6667	0.266	0.401	54.86	0.000
1.7333	0.268	0.419	58.45	0.000
1.8000	0.270	0.437	62.12	0.000
1.8667	0.272	0.455	65.87	0.000
1.9333	0.274	0.473	69.71	0.000
2.0000	0.276	0.491	73.63	0.000
2.0667	0.278	0.510	77.64	0.000
2.1333	0.280	0.529	81.73	0.000
2.2000	0.282	0.547	85.90	0.000
2.2667	0.284	0.566	90.15	0.000
2.3333	0.286	0.585	94.48	0.000
2.4000	0.289	0.605	98.89	0.000
2.4667	0.291	0.624	103.3	0.000
2.5333	0.293	0.643	107.9	0.000
2.6000	0.295	0.663	112.6	0.000

DRAFT

2.6667	0.297	0.683	117.3	0.000
2.7333	0.299	0.703	122.1	0.000
2.8000	0.301	0.723	127.0	0.000
2.8667	0.303	0.743	132.0	0.000
2.9333	0.305	0.763	137.0	0.000
3.0000	0.307	0.783	142.2	0.000
3.0667	0.309	0.804	147.4	0.000
3.1333	0.311	0.825	152.6	0.000
3.2000	0.313	0.846	158.0	0.000
3.2667	0.315	0.866	163.4	0.000
3.3333	0.317	0.888	169.0	0.000
3.4000	0.319	0.909	174.5	0.000
3.4667	0.321	0.930	180.2	0.000
3.5333	0.323	0.952	186.0	0.000
3.6000	0.325	0.973	191.8	0.000
3.6667	0.327	0.995	197.7	0.000
3.7333	0.329	1.017	203.7	0.000
3.8000	0.332	1.039	209.7	0.000
3.8667	0.334	1.061	215.9	0.000
3.9333	0.336	1.084	222.1	0.000
4.0000	0.338	1.106	228.4	0.000
4.0667	0.340	1.129	234.8	0.000
4.1333	0.342	1.152	241.2	0.000
4.2000	0.344	1.174	247.7	0.000
4.2667	0.346	1.197	254.3	0.000
4.3333	0.348	1.221	261.0	0.000
4.4000	0.350	1.244	267.8	0.000
4.4667	0.352	1.267	274.6	0.000
4.5333	0.354	1.291	281.5	0.000
4.6000	0.356	1.315	288.5	0.000
4.6667	0.358	1.338	295.6	0.000
4.7333	0.360	1.362	302.8	0.000
4.8000	0.362	1.387	310.0	0.000
4.8667	0.364	1.411	317.3	0.000
4.9333	0.366	1.435	324.7	0.000
5.0000	0.368	1.460	332.2	0.000
5.0667	0.370	1.484	339.7	0.000
5.1333	0.373	1.509	347.3	0.000
5.2000	0.375	1.534	355.0	0.000
5.2667	0.377	1.559	362.8	0.000
5.3333	0.379	1.584	370.7	0.000
5.4000	0.381	1.610	378.6	0.000
5.4667	0.383	1.635	386.7	0.000
5.5333	0.385	1.661	394.8	0.000
5.6000	0.387	1.687	403.0	0.000
5.6667	0.389	1.712	411.2	0.000
5.7333	0.391	1.738	419.6	0.000
5.8000	0.393	1.765	428.0	0.000
5.8667	0.395	1.791	436.5	0.000
5.9333	0.397	1.817	445.1	0.000
6.0000	0.399	1.844	453.8	0.000
6.0667	0.401	1.871	462.6	0.000

DRAFT

POC 22

Bottom Length: 2058.00 ft.
Bottom Width: 7.00 ft.
Manning's n: 0.035
Channel bottom slope 1: 0.0087 To 1
Channel Left side slope 0: 0.5 To 1
Channel right side slope 2: 0.5 To 1
Discharge Structure
Riser Height: 0 ft.
Riser Diameter: 0 in.
Element Flows To:
Outlet 1 Outlet 2
POC 20 SF

Channel Hydraulic Table

Stage(ft)	Area(ac)	Volume(ac-ft)	Discharge(cfs)	Infilt(cfs)
0.0000	0.330	0.000	0.000	0.000
0.0667	0.333	0.022	0.302	0.000
0.1333	0.337	0.044	0.955	0.000
0.2000	0.340	0.067	1.867	0.000
0.2667	0.343	0.089	3.000	0.000
0.3333	0.346	0.112	4.330	0.000
0.4000	0.349	0.136	5.838	0.000
0.4667	0.352	0.159	7.513	0.000
0.5333	0.355	0.183	9.343	0.000
0.6000	0.359	0.206	11.32	0.000
0.6667	0.362	0.231	13.43	0.000
0.7333	0.365	0.255	15.68	0.000
0.8000	0.368	0.279	18.06	0.000
0.8667	0.371	0.304	20.56	0.000
0.9333	0.374	0.329	23.18	0.000
1.0000	0.378	0.354	25.92	0.000
1.0667	0.381	0.379	28.77	0.000
1.1333	0.384	0.405	31.72	0.000
1.2000	0.387	0.430	34.79	0.000
1.2667	0.390	0.456	37.96	0.000
1.3333	0.393	0.483	41.24	0.000
1.4000	0.396	0.509	44.61	0.000
1.4667	0.400	0.535	48.09	0.000
1.5333	0.403	0.562	51.66	0.000
1.6000	0.406	0.589	55.33	0.000
1.6667	0.409	0.616	59.09	0.000
1.7333	0.412	0.644	62.95	0.000
1.8000	0.415	0.671	66.90	0.000
1.8667	0.418	0.699	70.94	0.000
1.9333	0.422	0.727	75.08	0.000
2.0000	0.425	0.755	79.30	0.000
2.0667	0.428	0.784	83.62	0.000
2.1333	0.431	0.813	88.02	0.000
2.2000	0.434	0.841	92.51	0.000
2.2667	0.437	0.871	97.09	0.000
2.3333	0.441	0.900	101.7	0.000
2.4000	0.444	0.929	106.5	0.000
2.4667	0.447	0.959	111.3	0.000
2.5333	0.450	0.989	116.2	0.000
2.6000	0.453	1.019	121.3	0.000

DRAFT

2.6667	0.456	1.049	126.3	0.000
2.7333	0.459	1.080	131.5	0.000
2.8000	0.463	1.111	136.8	0.000
2.8667	0.466	1.142	142.2	0.000
2.9333	0.469	1.173	147.6	0.000
3.0000	0.472	1.204	153.1	0.000
3.0667	0.475	1.236	158.7	0.000
3.1333	0.478	1.268	164.4	0.000
3.2000	0.481	1.300	170.2	0.000
3.2667	0.485	1.332	176.0	0.000
3.3333	0.488	1.364	182.0	0.000
3.4000	0.491	1.397	188.0	0.000
3.4667	0.494	1.430	194.1	0.000
3.5333	0.497	1.463	200.3	0.000
3.6000	0.500	1.496	206.6	0.000
3.6667	0.504	1.530	212.9	0.000
3.7333	0.507	1.563	219.4	0.000
3.8000	0.510	1.597	225.9	0.000
3.8667	0.513	1.632	232.5	0.000
3.9333	0.516	1.666	239.2	0.000
4.0000	0.519	1.700	246.0	0.000
4.0667	0.522	1.735	252.8	0.000
4.1333	0.526	1.770	259.8	0.000
4.2000	0.529	1.805	266.8	0.000
4.2667	0.532	1.841	273.9	0.000
4.3333	0.535	1.876	281.1	0.000
4.4000	0.538	1.912	288.4	0.000
4.4667	0.541	1.948	295.8	0.000
4.5333	0.544	1.984	303.2	0.000
4.6000	0.548	2.021	310.8	0.000
4.6667	0.551	2.057	318.4	0.000
4.7333	0.554	2.094	326.1	0.000
4.8000	0.557	2.131	333.9	0.000
4.8667	0.560	2.169	341.7	0.000
4.9333	0.563	2.206	349.7	0.000
5.0000	0.567	2.244	357.7	0.000
5.0667	0.570	2.282	365.9	0.000
5.1333	0.573	2.320	374.1	0.000
5.2000	0.576	2.358	382.4	0.000
5.2667	0.579	2.397	390.8	0.000
5.3333	0.582	2.435	399.3	0.000
5.4000	0.585	2.474	407.8	0.000
5.4667	0.589	2.513	416.5	0.000
5.5333	0.592	2.553	425.2	0.000
5.6000	0.595	2.592	434.0	0.000
5.6667	0.598	2.632	442.9	0.000
5.7333	0.601	2.672	451.9	0.000
5.8000	0.604	2.712	461.0	0.000
5.8667	0.607	2.753	470.2	0.000
5.9333	0.611	2.793	479.4	0.000
6.0000	0.614	2.834	488.8	0.000
6.0667	0.617	2.875	498.2	0.000

DRAFT

POC 28

Bottom Length: 1673.00 ft.
Bottom Width: 8.00 ft.
Manning's n: 0.035
Channel bottom slope 1: 0.0442 To 1
Channel Left side slope 0: 0.5 To 1
Channel right side slope 2: 0.5 To 1
Discharge Structure
Riser Height: 0 ft.
Riser Diameter: 0 in.
Element Flows To:
Outlet 1 Outlet 2
POC 21 SF

Channel Hydraulic Table

Stage(ft)	Area(ac)	Volume(ac-ft)	Discharge(cfs)	Infilt(cfs)
0.0000	0.307	0.000	0.000	0.000
0.0222	0.308	0.006	0.125	0.000
0.0444	0.309	0.013	0.397	0.000
0.0667	0.309	0.020	0.780	0.000
0.0889	0.310	0.027	1.258	0.000
0.1111	0.311	0.034	1.822	0.000
0.1333	0.312	0.041	2.465	0.000
0.1556	0.313	0.048	3.182	0.000
0.1778	0.314	0.055	3.968	0.000
0.2000	0.314	0.062	4.821	0.000
0.2222	0.315	0.069	5.738	0.000
0.2444	0.316	0.076	6.715	0.000
0.2667	0.317	0.083	7.750	0.000
0.2889	0.318	0.090	8.843	0.000
0.3111	0.319	0.097	9.990	0.000
0.3333	0.320	0.104	11.19	0.000
0.3556	0.320	0.111	12.44	0.000
0.3778	0.321	0.118	13.74	0.000
0.4000	0.322	0.126	15.09	0.000
0.4222	0.323	0.133	16.49	0.000
0.4444	0.324	0.140	17.94	0.000
0.4667	0.325	0.147	19.43	0.000
0.4889	0.326	0.154	20.97	0.000
0.5111	0.326	0.162	22.55	0.000
0.5333	0.327	0.169	24.17	0.000
0.5556	0.328	0.176	25.84	0.000
0.5778	0.329	0.183	27.55	0.000
0.6000	0.330	0.191	29.30	0.000
0.6222	0.331	0.198	31.09	0.000
0.6444	0.332	0.206	32.92	0.000
0.6667	0.332	0.213	34.79	0.000
0.6889	0.333	0.220	36.70	0.000
0.7111	0.334	0.228	38.64	0.000
0.7333	0.335	0.235	40.63	0.000
0.7556	0.336	0.243	42.65	0.000
0.7778	0.337	0.250	44.71	0.000
0.8000	0.338	0.258	46.80	0.000
0.8222	0.338	0.265	48.93	0.000
0.8444	0.339	0.273	51.09	0.000
0.8667	0.340	0.280	53.29	0.000

DRAFT

0.8889	0.341	0.288	55.53	0.000
0.9111	0.342	0.295	57.80	0.000
0.9333	0.343	0.303	60.10	0.000
0.9556	0.344	0.311	62.44	0.000
0.9778	0.344	0.318	64.80	0.000
1.0000	0.345	0.326	67.21	0.000
1.0222	0.346	0.334	69.64	0.000
1.0444	0.347	0.341	72.11	0.000
1.0667	0.348	0.349	74.61	0.000
1.0889	0.349	0.357	77.14	0.000
1.1111	0.349	0.365	79.70	0.000
1.1333	0.350	0.372	82.29	0.000
1.1556	0.351	0.380	84.92	0.000
1.1778	0.352	0.388	87.57	0.000
1.2000	0.353	0.396	90.25	0.000
1.2222	0.354	0.404	92.97	0.000
1.2444	0.355	0.412	95.72	0.000
1.2667	0.355	0.420	98.49	0.000
1.2889	0.356	0.427	101.3	0.000
1.3111	0.357	0.435	104.1	0.000
1.3333	0.358	0.443	107.0	0.000
1.3556	0.359	0.451	109.8	0.000
1.3778	0.360	0.459	112.8	0.000
1.4000	0.361	0.467	115.7	0.000
1.4222	0.361	0.475	118.7	0.000
1.4444	0.362	0.483	121.7	0.000
1.4667	0.363	0.492	124.7	0.000
1.4889	0.364	0.500	127.8	0.000
1.5111	0.365	0.508	130.9	0.000
1.5333	0.366	0.516	134.0	0.000
1.5556	0.367	0.524	137.2	0.000
1.5778	0.367	0.532	140.3	0.000
1.6000	0.368	0.540	143.5	0.000
1.6222	0.369	0.549	146.8	0.000
1.6444	0.370	0.557	150.0	0.000
1.6667	0.371	0.565	153.3	0.000
1.6889	0.372	0.573	156.6	0.000
1.7111	0.373	0.582	159.9	0.000
1.7333	0.373	0.590	163.3	0.000
1.7556	0.374	0.598	166.7	0.000
1.7778	0.375	0.607	170.1	0.000
1.8000	0.376	0.615	173.6	0.000
1.8222	0.377	0.623	177.0	0.000
1.8444	0.378	0.632	180.5	0.000
1.8667	0.379	0.640	184.0	0.000
1.8889	0.379	0.648	187.6	0.000
1.9111	0.380	0.657	191.2	0.000
1.9333	0.381	0.665	194.8	0.000
1.9556	0.382	0.674	198.4	0.000
1.9778	0.383	0.682	202.0	0.000
2.0000	0.384	0.691	205.7	0.000
2.0222	0.385	0.699	209.4	0.000

DRAFT

POC 25

Bottom Length: 2050.00 ft.
Bottom Width: 5.00 ft.
Manning's n: 0.035
Channel bottom slope 1: 0.0224 To 1
Channel Left side slope 0: 0.5 To 1
Channel right side slope 2: 0.5 To 1
Discharge Structure
Riser Height: 0 ft.
Riser Diameter: 0 in.
Element Flows To:
Outlet 1 Outlet 2
POC 21

Channel Hydraulic Table

Stage(ft)	Area(ac)	Volume(ac-ft)	Discharge(cfs)	Infilt(cfs)
0.0000	0.235	0.000	0.000	0.000
0.0333	0.236	0.007	0.109	0.000
0.0667	0.238	0.015	0.346	0.000
0.1000	0.240	0.023	0.677	0.000
0.1333	0.241	0.031	1.090	0.000
0.1667	0.243	0.039	1.575	0.000
0.2000	0.244	0.048	2.127	0.000
0.2333	0.246	0.056	2.740	0.000
0.2667	0.247	0.064	3.411	0.000
0.3000	0.249	0.072	4.137	0.000
0.3333	0.251	0.081	4.914	0.000
0.3667	0.252	0.089	5.742	0.000
0.4000	0.254	0.097	6.617	0.000
0.4333	0.255	0.106	7.539	0.000
0.4667	0.257	0.114	8.505	0.000
0.5000	0.258	0.123	9.514	0.000
0.5333	0.260	0.132	10.56	0.000
0.5667	0.262	0.140	11.65	0.000
0.6000	0.263	0.149	12.78	0.000
0.6333	0.265	0.158	13.95	0.000
0.6667	0.266	0.167	15.16	0.000
0.7000	0.268	0.176	16.41	0.000
0.7333	0.269	0.185	17.69	0.000
0.7667	0.271	0.194	19.01	0.000
0.8000	0.273	0.203	20.36	0.000
0.8333	0.274	0.212	21.75	0.000
0.8667	0.276	0.221	23.17	0.000
0.9000	0.277	0.230	24.62	0.000
0.9333	0.279	0.240	26.11	0.000
0.9667	0.280	0.249	27.63	0.000
1.0000	0.282	0.258	29.18	0.000
1.0333	0.283	0.268	30.77	0.000
1.0667	0.285	0.277	32.38	0.000
1.1000	0.287	0.287	34.03	0.000
1.1333	0.288	0.296	35.71	0.000
1.1667	0.290	0.306	37.42	0.000
1.2000	0.291	0.316	39.15	0.000
1.2333	0.293	0.326	40.92	0.000
1.2667	0.294	0.335	42.72	0.000
1.3000	0.296	0.345	44.55	0.000

DRAFT

1.3333	0.298	0.355	46.41	0.000
1.3667	0.299	0.365	48.29	0.000
1.4000	0.301	0.375	50.21	0.000
1.4333	0.302	0.385	52.16	0.000
1.4667	0.304	0.395	54.13	0.000
1.5000	0.305	0.405	56.13	0.000
1.5333	0.307	0.416	58.16	0.000
1.5667	0.309	0.426	60.22	0.000
1.6000	0.310	0.436	62.31	0.000
1.6333	0.312	0.447	64.42	0.000
1.6667	0.313	0.457	66.57	0.000
1.7000	0.315	0.468	68.74	0.000
1.7333	0.316	0.478	70.94	0.000
1.7667	0.318	0.489	73.16	0.000
1.8000	0.320	0.499	75.42	0.000
1.8333	0.321	0.510	77.70	0.000
1.8667	0.323	0.521	80.01	0.000
1.9000	0.324	0.532	82.34	0.000
1.9333	0.326	0.542	84.71	0.000
1.9667	0.327	0.553	87.10	0.000
2.0000	0.329	0.564	89.51	0.000
2.0333	0.331	0.575	91.96	0.000
2.0667	0.332	0.586	94.43	0.000
2.1000	0.334	0.597	96.93	0.000
2.1333	0.335	0.609	99.46	0.000
2.1667	0.337	0.620	102.0	0.000
2.2000	0.338	0.631	104.5	0.000
2.2333	0.340	0.642	107.2	0.000
2.2667	0.342	0.654	109.8	0.000
2.3000	0.343	0.665	112.5	0.000
2.3333	0.345	0.677	115.1	0.000
2.3667	0.346	0.688	117.9	0.000
2.4000	0.348	0.700	120.6	0.000
2.4333	0.349	0.711	123.4	0.000
2.4667	0.351	0.723	126.2	0.000
2.5000	0.353	0.735	129.0	0.000
2.5333	0.354	0.747	131.8	0.000
2.5667	0.356	0.759	134.7	0.000
2.6000	0.357	0.770	137.6	0.000
2.6333	0.359	0.782	140.5	0.000
2.6667	0.360	0.794	143.5	0.000
2.7000	0.362	0.806	146.5	0.000
2.7333	0.364	0.819	149.5	0.000
2.7667	0.365	0.831	152.5	0.000
2.8000	0.367	0.843	155.6	0.000
2.8333	0.368	0.855	158.7	0.000
2.8667	0.370	0.867	161.8	0.000
2.9000	0.371	0.880	164.9	0.000
2.9333	0.373	0.892	168.1	0.000
2.9667	0.374	0.905	171.3	0.000
3.0000	0.376	0.917	174.5	0.000
3.0333	0.378	0.930	177.8	0.000

DRAFT

POC 21

Bottom Length: 3338.00 ft.
Bottom Width: 10.00 ft.
Manning's n: 0.035
Channel bottom slope 1: 0.0162 To 1
Channel Left side slope 0: 0.5 To 1
Channel right side slope 2: 0.5 To 1
Discharge Structure
Riser Height: 0 ft.
Riser Diameter: 0 in.
Element Flows To:
Outlet 1 Outlet 2
POC 20 NF

Channel Hydraulic Table

Stage(ft)	Area(ac)	Volume(ac-ft)	Discharge(cfs)	Infilt(cfs)
0.0000	0.766	0.000	0.000	0.000
0.0444	0.769	0.034	0.301	0.000
0.0889	0.773	0.068	0.953	0.000
0.1333	0.776	0.102	1.869	0.000
0.1778	0.779	0.137	3.011	0.000
0.2222	0.783	0.172	4.356	0.000
0.2667	0.786	0.207	5.888	0.000
0.3111	0.790	0.242	7.593	0.000
0.3556	0.793	0.277	9.462	0.000
0.4000	0.797	0.312	11.48	0.000
0.4444	0.800	0.348	13.65	0.000
0.4889	0.803	0.383	15.97	0.000
0.5333	0.807	0.419	18.42	0.000
0.5778	0.810	0.455	21.00	0.000
0.6222	0.814	0.491	23.70	0.000
0.6667	0.817	0.527	26.54	0.000
0.7111	0.820	0.564	29.49	0.000
0.7556	0.824	0.600	32.55	0.000
0.8000	0.827	0.637	35.73	0.000
0.8444	0.831	0.674	39.02	0.000
0.8889	0.834	0.711	42.42	0.000
0.9333	0.837	0.748	45.92	0.000
0.9778	0.841	0.785	49.53	0.000
1.0222	0.844	0.823	53.24	0.000
1.0667	0.848	0.861	57.05	0.000
1.1111	0.851	0.898	60.95	0.000
1.1556	0.854	0.936	64.95	0.000
1.2000	0.858	0.974	69.05	0.000
1.2444	0.861	1.013	73.24	0.000
1.2889	0.865	1.051	77.52	0.000
1.3333	0.868	1.089	81.89	0.000
1.3778	0.871	1.128	86.35	0.000
1.4222	0.875	1.167	90.90	0.000
1.4667	0.878	1.206	95.54	0.000
1.5111	0.882	1.245	100.2	0.000
1.5556	0.885	1.284	105.0	0.000
1.6000	0.888	1.324	109.9	0.000
1.6444	0.892	1.363	114.9	0.000
1.6889	0.895	1.403	119.9	0.000
1.7333	0.899	1.443	125.1	0.000

DRAFT

1.7778	0.902	1.483	130.3	0.000
1.8222	0.906	1.523	135.6	0.000
1.8667	0.909	1.563	141.0	0.000
1.9111	0.912	1.604	146.4	0.000
1.9556	0.916	1.645	151.9	0.000
2.0000	0.919	1.685	157.6	0.000
2.0444	0.923	1.726	163.2	0.000
2.0889	0.926	1.767	169.0	0.000
2.1333	0.929	1.809	174.8	0.000
2.1778	0.933	1.850	180.7	0.000
2.2222	0.936	1.892	186.7	0.000
2.2667	0.940	1.933	192.8	0.000
2.3111	0.943	1.975	198.9	0.000
2.3556	0.946	2.017	205.1	0.000
2.4000	0.950	2.059	211.4	0.000
2.4444	0.953	2.102	217.8	0.000
2.4889	0.957	2.144	224.2	0.000
2.5333	0.960	2.187	230.7	0.000
2.5778	0.963	2.230	237.2	0.000
2.6222	0.967	2.272	243.9	0.000
2.6667	0.970	2.316	250.6	0.000
2.7111	0.974	2.359	257.3	0.000
2.7556	0.977	2.402	264.2	0.000
2.8000	0.980	2.446	271.1	0.000
2.8444	0.984	2.489	278.1	0.000
2.8889	0.987	2.533	285.1	0.000
2.9333	0.991	2.577	292.3	0.000
2.9778	0.994	2.621	299.5	0.000
3.0222	0.997	2.665	306.7	0.000
3.0667	1.001	2.710	314.0	0.000
3.1111	1.004	2.754	321.4	0.000
3.1556	1.008	2.799	328.9	0.000
3.2000	1.011	2.844	336.4	0.000
3.2444	1.015	2.889	344.0	0.000
3.2889	1.018	2.934	351.7	0.000
3.3333	1.021	2.980	359.4	0.000
3.3778	1.025	3.025	367.2	0.000
3.4222	1.028	3.071	375.1	0.000
3.4667	1.032	3.117	383.0	0.000
3.5111	1.035	3.163	391.0	0.000
3.5556	1.038	3.209	399.1	0.000
3.6000	1.042	3.255	407.2	0.000
3.6444	1.045	3.301	415.4	0.000
3.6889	1.049	3.348	423.7	0.000
3.7333	1.052	3.394	432.0	0.000
3.7778	1.055	3.441	440.4	0.000
3.8222	1.059	3.488	448.8	0.000
3.8667	1.062	3.535	457.4	0.000
3.9111	1.066	3.583	466.0	0.000
3.9556	1.069	3.630	474.6	0.000
4.0000	1.072	3.678	483.3	0.000
4.0444	1.076	3.726	492.1	0.000

DRAFT

POC 21 SF

Bottom Length: 2488.00 ft.
Bottom Width: 6.00 ft.
Manning's n: 0.035
Channel bottom slope 1: 0.0257 To 1
Channel Left side slope 0: 0.5 To 1
Channel right side slope 2: 0.5 To 1
Discharge Structure
Riser Height: 0 ft.
Riser Diameter: 0 in.
Element Flows To:
Outlet 1 Outlet 2
POC 21

Channel Hydraulic Table

Stage(ft)	Area(ac)	Volume(ac-ft)	Discharge(cfs)	Infilt(cfs)
0.0000	0.342	0.000	0.000	0.000
0.0444	0.345	0.015	0.227	0.000
0.0889	0.347	0.030	0.718	0.000
0.1333	0.350	0.046	1.405	0.000
0.1778	0.352	0.061	2.260	0.000
0.2222	0.355	0.077	3.264	0.000
0.2667	0.357	0.093	4.405	0.000
0.3111	0.360	0.109	5.673	0.000
0.3556	0.363	0.125	7.060	0.000
0.4000	0.365	0.141	8.560	0.000
0.4444	0.368	0.158	10.16	0.000
0.4889	0.370	0.174	11.87	0.000
0.5333	0.373	0.190	13.68	0.000
0.5778	0.375	0.207	15.58	0.000
0.6222	0.378	0.224	17.58	0.000
0.6667	0.380	0.241	19.66	0.000
0.7111	0.383	0.258	21.83	0.000
0.7556	0.385	0.275	24.08	0.000
0.8000	0.388	0.292	26.41	0.000
0.8444	0.390	0.309	28.83	0.000
0.8889	0.393	0.327	31.32	0.000
0.9333	0.396	0.344	33.89	0.000
0.9778	0.398	0.362	36.53	0.000
1.0222	0.401	0.380	39.25	0.000
1.0667	0.403	0.398	42.04	0.000
1.1111	0.406	0.416	44.90	0.000
1.1556	0.408	0.434	47.83	0.000
1.2000	0.411	0.452	50.83	0.000
1.2444	0.413	0.470	53.90	0.000
1.2889	0.416	0.489	57.04	0.000
1.3333	0.418	0.507	60.24	0.000
1.3778	0.421	0.526	63.51	0.000
1.4222	0.423	0.545	66.85	0.000
1.4667	0.426	0.564	70.25	0.000
1.5111	0.429	0.583	73.71	0.000
1.5556	0.431	0.602	77.24	0.000
1.6000	0.434	0.621	80.84	0.000
1.6444	0.436	0.640	84.49	0.000
1.6889	0.439	0.660	88.21	0.000
1.7333	0.441	0.679	91.99	0.000

DRAFT

1.7778	0.444	0.699	95.83	0.000
1.8222	0.446	0.719	99.73	0.000
1.8667	0.449	0.739	103.7	0.000
1.9111	0.451	0.759	107.7	0.000
1.9556	0.454	0.779	111.8	0.000
2.0000	0.457	0.799	115.9	0.000
2.0444	0.459	0.820	120.1	0.000
2.0889	0.462	0.840	124.4	0.000
2.1333	0.464	0.861	128.7	0.000
2.1778	0.467	0.881	133.1	0.000
2.2222	0.469	0.902	137.5	0.000
2.2667	0.472	0.923	142.0	0.000
2.3111	0.474	0.944	146.6	0.000
2.3556	0.477	0.965	151.2	0.000
2.4000	0.479	0.987	155.9	0.000
2.4444	0.482	1.008	160.6	0.000
2.4889	0.484	1.029	165.4	0.000
2.5333	0.487	1.051	170.3	0.000
2.5778	0.490	1.073	175.2	0.000
2.6222	0.492	1.095	180.1	0.000
2.6667	0.495	1.117	185.2	0.000
2.7111	0.497	1.139	190.2	0.000
2.7556	0.500	1.161	195.4	0.000
2.8000	0.502	1.183	200.6	0.000
2.8444	0.505	1.205	205.8	0.000
2.8889	0.507	1.228	211.2	0.000
2.9333	0.510	1.251	216.5	0.000
2.9778	0.512	1.273	222.0	0.000
3.0222	0.515	1.296	227.4	0.000
3.0667	0.517	1.319	233.0	0.000
3.1111	0.520	1.342	238.6	0.000
3.1556	0.523	1.365	244.2	0.000
3.2000	0.525	1.389	250.0	0.000
3.2444	0.528	1.412	255.7	0.000
3.2889	0.530	1.436	261.6	0.000
3.3333	0.533	1.459	267.5	0.000
3.3778	0.535	1.483	273.4	0.000
3.4222	0.538	1.507	279.4	0.000
3.4667	0.540	1.531	285.5	0.000
3.5111	0.543	1.555	291.6	0.000
3.5556	0.545	1.579	297.8	0.000
3.6000	0.548	1.603	304.0	0.000
3.6444	0.550	1.628	310.3	0.000
3.6889	0.553	1.652	316.7	0.000
3.7333	0.556	1.677	323.1	0.000
3.7778	0.558	1.702	329.5	0.000
3.8222	0.561	1.727	336.1	0.000
3.8667	0.563	1.752	342.7	0.000
3.9111	0.566	1.777	349.3	0.000
3.9556	0.568	1.802	356.0	0.000
4.0000	0.571	1.827	362.8	0.000
4.0444	0.573	1.853	369.6	0.000

DRAFT

POC 20 SF

Bottom Length: 2805.00 ft.
Bottom Width: 8.00 ft.
Manning's n: 0.035
Channel bottom slope 1: 0.0064 To 1
Channel Left side slope 0: 0.5 To 1
Channel right side slope 2: 0.5 To 1
Discharge Structure
Riser Height: 0 ft.
Riser Diameter: 0 in.
Element Flows To:
Outlet 1 Outlet 2
POC 20

Channel Hydraulic Table

Stage(ft)	Area(ac)	Volume(ac-ft)	Discharge(cfs)	Infilt(cfs)
0.0000	0.515	0.000	0.000	0.000
0.0667	0.519	0.034	0.297	0.000
0.1333	0.523	0.069	0.938	0.000
0.2000	0.528	0.104	1.834	0.000
0.2667	0.532	0.139	2.949	0.000
0.3333	0.536	0.175	4.258	0.000
0.4000	0.540	0.211	5.744	0.000
0.4667	0.545	0.247	7.395	0.000
0.5333	0.549	0.283	9.200	0.000
0.6000	0.553	0.320	11.15	0.000
0.6667	0.558	0.357	13.24	0.000
0.7333	0.562	0.395	15.46	0.000
0.8000	0.566	0.432	17.81	0.000
0.8667	0.571	0.470	20.28	0.000
0.9333	0.575	0.508	22.87	0.000
1.0000	0.579	0.547	25.57	0.000
1.0667	0.583	0.586	28.39	0.000
1.1333	0.588	0.625	31.31	0.000
1.2000	0.592	0.664	34.34	0.000
1.2667	0.596	0.704	37.48	0.000
1.3333	0.601	0.744	40.71	0.000
1.4000	0.605	0.784	44.05	0.000
1.4667	0.609	0.824	47.48	0.000
1.5333	0.613	0.865	51.01	0.000
1.6000	0.618	0.906	54.63	0.000
1.6667	0.622	0.948	58.35	0.000
1.7333	0.626	0.989	62.15	0.000
1.8000	0.631	1.031	66.05	0.000
1.8667	0.635	1.073	70.04	0.000
1.9333	0.639	1.116	74.12	0.000
2.0000	0.643	1.159	78.28	0.000
2.0667	0.648	1.202	82.54	0.000
2.1333	0.652	1.245	86.88	0.000
2.2000	0.656	1.289	91.30	0.000
2.2667	0.661	1.333	95.81	0.000
2.3333	0.665	1.377	100.4	0.000
2.4000	0.669	1.421	105.0	0.000
2.4667	0.674	1.466	109.8	0.000
2.5333	0.678	1.511	114.6	0.000
2.6000	0.682	1.557	119.6	0.000

DRAFT

2.6667	0.686	1.602	124.6	0.000
2.7333	0.691	1.648	129.7	0.000
2.8000	0.695	1.694	134.8	0.000
2.8667	0.699	1.741	140.1	0.000
2.9333	0.704	1.788	145.4	0.000
3.0000	0.708	1.835	150.8	0.000
3.0667	0.712	1.882	156.3	0.000
3.1333	0.716	1.930	161.9	0.000
3.2000	0.721	1.978	167.5	0.000
3.2667	0.725	2.026	173.3	0.000
3.3333	0.729	2.074	179.1	0.000
3.4000	0.734	2.123	185.0	0.000
3.4667	0.738	2.172	190.9	0.000
3.5333	0.742	2.222	197.0	0.000
3.6000	0.747	2.271	203.1	0.000
3.6667	0.751	2.321	209.3	0.000
3.7333	0.755	2.372	215.6	0.000
3.8000	0.759	2.422	221.9	0.000
3.8667	0.764	2.473	228.4	0.000
3.9333	0.768	2.524	234.9	0.000
4.0000	0.772	2.575	241.5	0.000
4.0667	0.777	2.627	248.2	0.000
4.1333	0.781	2.679	254.9	0.000
4.2000	0.785	2.731	261.7	0.000
4.2667	0.789	2.784	268.6	0.000
4.3333	0.794	2.836	275.6	0.000
4.4000	0.798	2.890	282.7	0.000
4.4667	0.802	2.943	289.8	0.000
4.5333	0.807	2.997	297.1	0.000
4.6000	0.811	3.051	304.4	0.000
4.6667	0.815	3.105	311.7	0.000
4.7333	0.820	3.159	319.2	0.000
4.8000	0.824	3.214	326.7	0.000
4.8667	0.828	3.269	334.4	0.000
4.9333	0.832	3.325	342.0	0.000
5.0000	0.837	3.380	349.8	0.000
5.0667	0.841	3.436	357.7	0.000
5.1333	0.845	3.492	365.6	0.000
5.2000	0.850	3.549	373.6	0.000
5.2667	0.854	3.606	381.7	0.000
5.3333	0.858	3.663	389.9	0.000
5.4000	0.862	3.720	398.1	0.000
5.4667	0.867	3.778	406.5	0.000
5.5333	0.871	3.836	414.9	0.000
5.6000	0.875	3.894	423.4	0.000
5.6667	0.880	3.953	431.9	0.000
5.7333	0.884	4.011	440.6	0.000
5.8000	0.888	4.071	449.3	0.000
5.8667	0.893	4.130	458.1	0.000
5.9333	0.897	4.190	467.0	0.000
6.0000	0.901	4.250	476.0	0.000
6.0667	0.905	4.310	485.0	0.000

DRAFT

POC 20 NF

Bottom Length: 2495.00 ft.
Bottom Width: 10.00 ft.
Manning's n: 0.03
Channel bottom slope 1: 0.0128 To 1
Channel Left side slope 0: 0.5 To 1
Channel right side slope 2: 0.5 To 1
Discharge Structure
Riser Height: 0 ft.
Riser Diameter: 0 in.
Element Flows To:
Outlet 1 Outlet 2
POC 20

Channel Hydraulic Table

Stage(ft)	Area(ac)	Volume(ac-ft)	Discharge(cfs)	Infilt(cfs)
0.0000	0.572	0.000	0.000	0.000
0.0667	0.576	0.038	0.613	0.000
0.1333	0.580	0.076	1.938	0.000
0.2000	0.584	0.115	3.795	0.000
0.2667	0.588	0.154	6.106	0.000
0.3333	0.591	0.194	8.823	0.000
0.4000	0.595	0.233	11.91	0.000
0.4667	0.599	0.273	15.34	0.000
0.5333	0.603	0.313	19.10	0.000
0.6000	0.607	0.354	23.16	0.000
0.6667	0.611	0.394	27.52	0.000
0.7333	0.614	0.435	32.15	0.000
0.8000	0.618	0.476	37.05	0.000
0.8667	0.622	0.517	42.21	0.000
0.9333	0.626	0.559	47.62	0.000
1.0000	0.630	0.601	53.27	0.000
1.0667	0.633	0.643	59.16	0.000
1.1333	0.637	0.685	65.27	0.000
1.2000	0.641	0.728	71.61	0.000
1.2667	0.645	0.771	78.16	0.000
1.3333	0.649	0.814	84.93	0.000
1.4000	0.653	0.858	91.90	0.000
1.4667	0.656	0.901	99.08	0.000
1.5333	0.660	0.945	106.4	0.000
1.6000	0.664	0.989	114.0	0.000
1.6667	0.668	1.034	121.8	0.000
1.7333	0.672	1.078	129.7	0.000
1.8000	0.675	1.123	137.9	0.000
1.8667	0.679	1.169	146.2	0.000
1.9333	0.683	1.214	154.7	0.000
2.0000	0.687	1.260	163.4	0.000
2.0667	0.691	1.306	172.3	0.000
2.1333	0.695	1.352	181.3	0.000
2.2000	0.698	1.398	190.5	0.000
2.2667	0.702	1.445	199.9	0.000
2.3333	0.706	1.492	209.5	0.000
2.4000	0.710	1.539	219.2	0.000
2.4667	0.714	1.587	229.1	0.000
2.5333	0.717	1.634	239.2	0.000
2.6000	0.721	1.682	249.5	0.000

DRAFT

2.6667	0.725	1.731	259.9	0.000
2.7333	0.729	1.779	270.4	0.000
2.8000	0.733	1.828	281.2	0.000
2.8667	0.737	1.877	292.0	0.000
2.9333	0.740	1.926	303.1	0.000
3.0000	0.744	1.976	314.3	0.000
3.0667	0.748	2.025	325.7	0.000
3.1333	0.752	2.075	337.2	0.000
3.2000	0.756	2.126	348.9	0.000
3.2667	0.759	2.176	360.7	0.000
3.3333	0.763	2.227	372.7	0.000
3.4000	0.767	2.278	384.9	0.000
3.4667	0.771	2.329	397.2	0.000
3.5333	0.775	2.381	409.7	0.000
3.6000	0.779	2.433	422.3	0.000
3.6667	0.782	2.485	435.1	0.000
3.7333	0.786	2.537	448.0	0.000
3.8000	0.790	2.590	461.1	0.000
3.8667	0.794	2.643	474.3	0.000
3.9333	0.798	2.696	487.7	0.000
4.0000	0.801	2.749	501.2	0.000
4.0667	0.805	2.803	514.9	0.000
4.1333	0.809	2.856	528.8	0.000
4.2000	0.813	2.910	542.8	0.000
4.2667	0.817	2.965	556.9	0.000
4.3333	0.821	3.019	571.2	0.000
4.4000	0.824	3.074	585.7	0.000
4.4667	0.828	3.129	600.3	0.000
4.5333	0.832	3.185	615.0	0.000
4.6000	0.836	3.240	629.9	0.000
4.6667	0.840	3.296	645.0	0.000
4.7333	0.843	3.352	660.2	0.000
4.8000	0.847	3.409	675.5	0.000
4.8667	0.851	3.465	691.0	0.000
4.9333	0.855	3.522	706.7	0.000
5.0000	0.859	3.579	722.5	0.000
5.0667	0.863	3.637	738.4	0.000
5.1333	0.866	3.695	754.5	0.000
5.2000	0.870	3.752	770.8	0.000
5.2667	0.874	3.811	787.2	0.000
5.3333	0.878	3.869	803.7	0.000
5.4000	0.882	3.928	820.4	0.000
5.4667	0.885	3.987	837.3	0.000
5.5333	0.889	4.046	854.3	0.000
5.6000	0.893	4.105	871.4	0.000
5.6667	0.897	4.165	888.7	0.000
5.7333	0.901	4.225	906.2	0.000
5.8000	0.905	4.285	923.8	0.000
5.8667	0.908	4.346	941.6	0.000
5.9333	0.912	4.406	959.5	0.000
6.0000	0.916	4.467	977.5	0.000
6.0667	0.920	4.529	995.7	0.000

DRAFT

POC 20

Bottom Length: 1714.00 ft.
Bottom Width: 15.00 ft.
Manning's n: 0.035
Channel bottom slope 1: 0.0047 To 1
Channel Left side slope 0: 0.5 To 1
Channel right side slope 2: 0.5 To 1
Discharge Structure
Riser Height: 0 ft.
Riser Diameter: 0 in.
Element Flows To:
Outlet 1 Outlet 2
POC 17/18

Channel Hydraulic Table

Stage(ft)	Area(ac)	Volume(ac-ft)	Discharge(cfs)	Infilt(cfs)
0.0000	0.590	0.000	0.000	0.000
0.0667	0.592	0.039	0.478	0.000
0.1333	0.595	0.079	1.514	0.000
0.2000	0.598	0.118	2.969	0.000
0.2667	0.600	0.158	4.782	0.000
0.3333	0.603	0.198	6.918	0.000
0.4000	0.606	0.239	9.350	0.000
0.4667	0.608	0.279	12.05	0.000
0.5333	0.611	0.320	15.02	0.000
0.6000	0.613	0.361	18.24	0.000
0.6667	0.616	0.402	21.69	0.000
0.7333	0.619	0.443	25.36	0.000
0.8000	0.621	0.484	29.25	0.000
0.8667	0.624	0.526	33.35	0.000
0.9333	0.626	0.568	37.65	0.000
1.0000	0.629	0.609	42.14	0.000
1.0667	0.632	0.652	46.83	0.000
1.1333	0.634	0.694	51.70	0.000
1.2000	0.637	0.736	56.75	0.000
1.2667	0.640	0.779	61.97	0.000
1.3333	0.642	0.821	67.37	0.000
1.4000	0.645	0.864	72.93	0.000
1.4667	0.647	0.908	78.66	0.000
1.5333	0.650	0.951	84.55	0.000
1.6000	0.653	0.994	90.60	0.000
1.6667	0.655	1.038	96.80	0.000
1.7333	0.658	1.082	103.1	0.000
1.8000	0.661	1.126	109.6	0.000
1.8667	0.663	1.170	116.3	0.000
1.9333	0.666	1.214	123.1	0.000
2.0000	0.668	1.259	130.0	0.000
2.0667	0.671	1.303	137.1	0.000
2.1333	0.674	1.348	144.3	0.000
2.2000	0.676	1.393	151.7	0.000
2.2667	0.679	1.438	159.2	0.000
2.3333	0.682	1.484	166.8	0.000
2.4000	0.684	1.529	174.6	0.000
2.4667	0.687	1.575	182.5	0.000
2.5333	0.689	1.621	190.5	0.000
2.6000	0.692	1.667	198.7	0.000

DRAFT

2.6667	0.695	1.713	206.9	0.000
2.7333	0.697	1.760	215.4	0.000
2.8000	0.700	1.806	223.9	0.000
2.8667	0.703	1.853	232.5	0.000
2.9333	0.705	1.900	241.3	0.000
3.0000	0.708	1.947	250.2	0.000
3.0667	0.710	1.995	259.3	0.000
3.1333	0.713	2.042	268.4	0.000
3.2000	0.716	2.090	277.7	0.000
3.2667	0.718	2.138	287.1	0.000
3.3333	0.721	2.186	296.6	0.000
3.4000	0.724	2.234	306.2	0.000
3.4667	0.726	2.282	315.9	0.000
3.5333	0.729	2.331	325.8	0.000
3.6000	0.731	2.379	335.8	0.000
3.6667	0.734	2.428	345.8	0.000
3.7333	0.737	2.477	356.0	0.000
3.8000	0.739	2.527	366.3	0.000
3.8667	0.742	2.576	376.8	0.000
3.9333	0.745	2.625	387.3	0.000
4.0000	0.747	2.675	398.0	0.000
4.0667	0.750	2.725	408.7	0.000
4.1333	0.752	2.775	419.6	0.000
4.2000	0.755	2.826	430.6	0.000
4.2667	0.758	2.876	441.7	0.000
4.3333	0.760	2.927	452.9	0.000
4.4000	0.763	2.977	464.2	0.000
4.4667	0.766	3.028	475.6	0.000
4.5333	0.768	3.080	487.1	0.000
4.6000	0.771	3.131	498.7	0.000
4.6667	0.773	3.182	510.5	0.000
4.7333	0.776	3.234	522.3	0.000
4.8000	0.779	3.286	534.3	0.000
4.8667	0.781	3.338	546.4	0.000
4.9333	0.784	3.390	558.5	0.000
5.0000	0.787	3.443	570.8	0.000
5.0667	0.789	3.495	583.2	0.000
5.1333	0.792	3.548	595.7	0.000
5.2000	0.794	3.601	608.3	0.000
5.2667	0.797	3.654	621.0	0.000
5.3333	0.800	3.707	633.8	0.000
5.4000	0.802	3.760	646.7	0.000
5.4667	0.805	3.814	659.7	0.000
5.5333	0.808	3.868	672.8	0.000
5.6000	0.810	3.922	686.1	0.000
5.6667	0.813	3.976	699.4	0.000
5.7333	0.815	4.030	712.8	0.000
5.8000	0.818	4.085	726.4	0.000
5.8667	0.821	4.139	740.0	0.000
5.9333	0.823	4.194	753.8	0.000
6.0000	0.826	4.249	767.6	0.000
6.0667	0.829	4.304	781.6	0.000

DRAFT

POC 17/18

Bottom Length: 1331.00 ft.
Bottom Width: 15.00 ft.
Manning's n: 0.035
Channel bottom slope 1: 0.0075 To 1
Channel Left side slope 0: 0.5 To 1
Channel right side slope 2: 0.5 To 1
Discharge Structure
Riser Height: 0 ft.
Riser Diameter: 0 in.
Element Flows To:
Outlet 1 Outlet 2
SF

Channel Hydraulic Table

Stage(ft)	Area(ac)	Volume(ac-ft)	Discharge(cfs)	Infilt(cfs)
0.0000	0.458	0.000	0.000	0.000
0.0889	0.461	0.040	0.975	0.000
0.1778	0.463	0.082	3.084	0.000
0.2667	0.466	0.123	6.041	0.000
0.3556	0.469	0.164	9.723	0.000
0.4444	0.471	0.206	14.05	0.000
0.5333	0.474	0.248	18.98	0.000
0.6222	0.477	0.291	24.46	0.000
0.7111	0.480	0.333	30.46	0.000
0.8000	0.482	0.376	36.95	0.000
0.8889	0.485	0.419	43.91	0.000
0.9778	0.488	0.462	51.32	0.000
1.0667	0.490	0.506	59.15	0.000
1.1556	0.493	0.550	67.41	0.000
1.2444	0.496	0.594	76.06	0.000
1.3333	0.499	0.638	85.10	0.000
1.4222	0.501	0.682	94.52	0.000
1.5111	0.504	0.727	104.3	0.000
1.6000	0.507	0.772	114.4	0.000
1.6889	0.509	0.817	124.9	0.000
1.7778	0.512	0.863	135.7	0.000
1.8667	0.515	0.908	146.9	0.000
1.9556	0.518	0.954	158.4	0.000
2.0444	0.520	1.000	170.2	0.000
2.1333	0.523	1.047	182.3	0.000
2.2222	0.526	1.094	194.8	0.000
2.3111	0.529	1.140	207.5	0.000
2.4000	0.531	1.188	220.5	0.000
2.4889	0.534	1.235	233.9	0.000
2.5778	0.537	1.283	247.5	0.000
2.6667	0.539	1.330	261.4	0.000
2.7556	0.542	1.379	275.6	0.000
2.8444	0.545	1.427	290.1	0.000
2.9333	0.548	1.475	304.9	0.000
3.0222	0.550	1.524	319.9	0.000
3.1111	0.553	1.573	335.2	0.000
3.2000	0.556	1.623	350.8	0.000
3.2889	0.558	1.672	366.6	0.000
3.3778	0.561	1.722	382.7	0.000
3.4667	0.564	1.772	399.1	0.000

DRAFT

3.5556	0.567	1.822	415.7	0.000
3.6444	0.569	1.873	432.6	0.000
3.7333	0.572	1.924	449.8	0.000
3.8222	0.575	1.975	467.2	0.000
3.9111	0.577	2.026	484.8	0.000
4.0000	0.580	2.077	502.7	0.000
4.0889	0.583	2.129	520.9	0.000
4.1778	0.586	2.181	539.3	0.000
4.2667	0.588	2.233	557.9	0.000
4.3556	0.591	2.286	576.8	0.000
4.4444	0.594	2.338	596.0	0.000
4.5333	0.596	2.391	615.3	0.000
4.6222	0.599	2.445	635.0	0.000
4.7111	0.602	2.498	654.8	0.000
4.8000	0.605	2.552	675.0	0.000
4.8889	0.607	2.606	695.3	0.000
4.9778	0.610	2.660	715.9	0.000
5.0667	0.613	2.714	736.7	0.000
5.1556	0.615	2.769	757.8	0.000
5.2444	0.618	2.824	779.1	0.000
5.3333	0.621	2.879	800.6	0.000
5.4222	0.624	2.934	822.4	0.000
5.5111	0.626	2.990	844.4	0.000
5.6000	0.629	3.045	866.7	0.000
5.6889	0.632	3.102	889.1	0.000
5.7778	0.634	3.158	911.9	0.000
5.8667	0.637	3.214	934.8	0.000
5.9556	0.640	3.271	958.0	0.000
6.0444	0.643	3.328	981.4	0.000
6.1333	0.645	3.386	1005.	0.000
6.2222	0.648	3.443	1028.	0.000
6.3111	0.651	3.501	1053.	0.000
6.4000	0.653	3.559	1077.	0.000
6.4889	0.656	3.617	1101.	0.000
6.5778	0.659	3.676	1126.	0.000
6.6667	0.662	3.734	1151.	0.000
6.7556	0.664	3.793	1177.	0.000
6.8444	0.667	3.852	1202.	0.000
6.9333	0.670	3.912	1228.	0.000
7.0222	0.673	3.972	1254.	0.000
7.1111	0.675	4.032	1280.	0.000
7.2000	0.678	4.092	1306.	0.000
7.2889	0.681	4.152	1333.	0.000
7.3778	0.683	4.213	1360.	0.000
7.4667	0.686	4.274	1387.	0.000
7.5556	0.689	4.335	1414.	0.000
7.6444	0.692	4.396	1442.	0.000
7.7333	0.694	4.458	1470.	0.000
7.8222	0.697	4.520	1498.	0.000
7.9111	0.700	4.582	1526.	0.000
8.0000	0.702	4.644	1554.	0.000
8.0889	0.705	4.707	1583.	0.000

DRAFT

SB 18 SF

Bottom Length: 3376.00 ft.
Bottom Width: 6.00 ft.
Manning's n: 0.035
Channel bottom slope 1: 0.0059 To 1
Channel Left side slope 0: 0.5 To 1
Channel right side slope 2: 0.5 To 1
Discharge Structure
Riser Height: 0 ft.
Riser Diameter: 0 in.
Element Flows To:
Outlet 1 Outlet 2
POC 17/18

Channel Hydraulic Table

Stage(ft)	Area(ac)	Volume(ac-ft)	Discharge(cfs)	Infilt(cfs)
0.0000	0.465	0.000	0.000	0.000
0.0667	0.470	0.031	0.213	0.000
0.1333	0.475	0.062	0.673	0.000
0.2000	0.480	0.094	1.314	0.000
0.2667	0.485	0.126	2.110	0.000
0.3333	0.490	0.159	3.043	0.000
0.4000	0.496	0.192	4.101	0.000
0.4667	0.501	0.225	5.275	0.000
0.5333	0.506	0.259	6.556	0.000
0.6000	0.511	0.293	7.940	0.000
0.6667	0.516	0.327	9.421	0.000
0.7333	0.521	0.361	10.99	0.000
0.8000	0.527	0.396	12.65	0.000
0.8667	0.532	0.432	14.40	0.000
0.9333	0.537	0.467	16.23	0.000
1.0000	0.542	0.503	18.15	0.000
1.0667	0.547	0.540	20.14	0.000
1.1333	0.552	0.576	22.21	0.000
1.2000	0.558	0.613	24.35	0.000
1.2667	0.563	0.651	26.57	0.000
1.3333	0.568	0.688	28.86	0.000
1.4000	0.573	0.727	31.22	0.000
1.4667	0.578	0.765	33.66	0.000
1.5333	0.583	0.804	36.16	0.000
1.6000	0.589	0.843	38.73	0.000
1.6667	0.594	0.882	41.37	0.000
1.7333	0.599	0.922	44.07	0.000
1.8000	0.604	0.962	46.84	0.000
1.8667	0.609	1.003	49.68	0.000
1.9333	0.614	1.043	52.58	0.000
2.0000	0.620	1.085	55.55	0.000
2.0667	0.625	1.126	58.58	0.000
2.1333	0.630	1.168	61.68	0.000
2.2000	0.635	1.210	64.84	0.000
2.2667	0.640	1.253	68.07	0.000
2.3333	0.645	1.296	71.35	0.000
2.4000	0.651	1.339	74.70	0.000
2.4667	0.656	1.382	78.12	0.000
2.5333	0.661	1.426	81.59	0.000
2.6000	0.666	1.471	85.13	0.000

DRAFT

2.6667	0.671	1.515	88.73	0.000
2.7333	0.676	1.560	92.40	0.000
2.8000	0.682	1.605	96.12	0.000
2.8667	0.687	1.651	99.91	0.000
2.9333	0.692	1.697	103.7	0.000
3.0000	0.697	1.743	107.6	0.000
3.0667	0.702	1.790	111.6	0.000
3.1333	0.707	1.837	115.6	0.000
3.2000	0.713	1.884	119.7	0.000
3.2667	0.718	1.932	123.9	0.000
3.3333	0.723	1.980	128.1	0.000
3.4000	0.728	2.029	132.4	0.000
3.4667	0.733	2.077	136.8	0.000
3.5333	0.738	2.126	141.2	0.000
3.6000	0.744	2.176	145.6	0.000
3.6667	0.749	2.226	150.2	0.000
3.7333	0.754	2.276	154.8	0.000
3.8000	0.759	2.326	159.4	0.000
3.8667	0.764	2.377	164.2	0.000
3.9333	0.769	2.428	168.9	0.000
4.0000	0.775	2.480	173.8	0.000
4.0667	0.780	2.531	178.7	0.000
4.1333	0.785	2.584	183.7	0.000
4.2000	0.790	2.636	188.7	0.000
4.2667	0.795	2.689	193.8	0.000
4.3333	0.800	2.742	199.0	0.000
4.4000	0.806	2.796	204.2	0.000
4.4667	0.811	2.850	209.5	0.000
4.5333	0.816	2.904	214.9	0.000
4.6000	0.821	2.959	220.3	0.000
4.6667	0.826	3.014	225.8	0.000
4.7333	0.831	3.069	231.3	0.000
4.8000	0.837	3.124	236.9	0.000
4.8667	0.842	3.180	242.6	0.000
4.9333	0.847	3.237	248.3	0.000
5.0000	0.852	3.293	254.2	0.000
5.0667	0.857	3.350	260.0	0.000
5.1333	0.862	3.408	266.0	0.000
5.2000	0.868	3.465	272.0	0.000
5.2667	0.873	3.524	278.0	0.000
5.3333	0.878	3.582	284.2	0.000
5.4000	0.883	3.641	290.4	0.000
5.4667	0.888	3.700	296.6	0.000
5.5333	0.893	3.759	303.0	0.000
5.6000	0.899	3.819	309.4	0.000
5.6667	0.904	3.879	315.8	0.000
5.7333	0.909	3.939	322.4	0.000
5.8000	0.914	4.000	329.0	0.000
5.8667	0.919	4.061	335.6	0.000
5.9333	0.924	4.123	342.4	0.000
6.0000	0.930	4.185	349.2	0.000
6.0667	0.935	4.247	356.0	0.000

DRAFT

SB 17 SF

Bottom Length: 1491.00 ft.
Bottom Width: 4.00 ft.
Manning's n: 0.035
Channel bottom slope 1: 0.0148 To 1
Channel Left side slope 0: 0.5 To 1
Channel right side slope 2: 0.5 To 1
Discharge Structure
Riser Height: 0 ft.
Riser Diameter: 0 in.
Element Flows To:
Outlet 1 Outlet 2
POC 17/18

Channel Hydraulic Table

Stage(ft)	Area(ac)	Volume(ac-ft)	Discharge(cfs)	Infilt(cfs)
0.0000	0.136	0.000	0.000	0.000
0.0444	0.138	0.006	0.114	0.000
0.0889	0.140	0.012	0.361	0.000
0.1333	0.141	0.018	0.706	0.000
0.1778	0.143	0.024	1.133	0.000
0.2222	0.144	0.031	1.635	0.000
0.2667	0.146	0.037	2.203	0.000
0.3111	0.147	0.044	2.833	0.000
0.3556	0.149	0.050	3.522	0.000
0.4000	0.150	0.057	4.265	0.000
0.4444	0.152	0.064	5.060	0.000
0.4889	0.153	0.071	5.906	0.000
0.5333	0.155	0.077	6.799	0.000
0.5778	0.156	0.084	7.738	0.000
0.6222	0.158	0.091	8.723	0.000
0.6667	0.159	0.098	9.751	0.000
0.7111	0.161	0.106	10.82	0.000
0.7556	0.162	0.113	11.93	0.000
0.8000	0.164	0.120	13.08	0.000
0.8444	0.165	0.127	14.27	0.000
0.8889	0.167	0.135	15.50	0.000
0.9333	0.168	0.142	16.77	0.000
0.9778	0.170	0.150	18.08	0.000
1.0222	0.171	0.157	19.42	0.000
1.0667	0.173	0.165	20.80	0.000
1.1111	0.175	0.173	22.22	0.000
1.1556	0.176	0.181	23.67	0.000
1.2000	0.178	0.188	25.16	0.000
1.2444	0.179	0.196	26.69	0.000
1.2889	0.181	0.204	28.25	0.000
1.3333	0.182	0.213	29.84	0.000
1.3778	0.184	0.221	31.47	0.000
1.4222	0.185	0.229	33.13	0.000
1.4667	0.187	0.237	34.83	0.000
1.5111	0.188	0.246	36.56	0.000
1.5556	0.190	0.254	38.33	0.000
1.6000	0.191	0.262	40.13	0.000
1.6444	0.193	0.271	41.96	0.000
1.6889	0.194	0.280	43.83	0.000
1.7333	0.196	0.288	45.73	0.000

DRAFT

1.7778	0.197	0.297	47.66	0.000
1.8222	0.199	0.306	49.63	0.000
1.8667	0.200	0.315	51.63	0.000
1.9111	0.202	0.324	53.67	0.000
1.9556	0.203	0.333	55.74	0.000
2.0000	0.205	0.342	57.84	0.000
2.0444	0.206	0.351	59.97	0.000
2.0889	0.208	0.360	62.14	0.000
2.1333	0.209	0.370	64.34	0.000
2.1778	0.211	0.379	66.58	0.000
2.2222	0.213	0.388	68.85	0.000
2.2667	0.214	0.398	71.15	0.000
2.3111	0.216	0.407	73.49	0.000
2.3556	0.217	0.417	75.86	0.000
2.4000	0.219	0.427	78.26	0.000
2.4444	0.220	0.437	80.69	0.000
2.4889	0.222	0.446	83.16	0.000
2.5333	0.223	0.456	85.67	0.000
2.5778	0.225	0.466	88.20	0.000
2.6222	0.226	0.476	90.77	0.000
2.6667	0.228	0.486	93.38	0.000
2.7111	0.229	0.497	96.02	0.000
2.7556	0.231	0.507	98.69	0.000
2.8000	0.232	0.517	101.4	0.000
2.8444	0.234	0.527	104.1	0.000
2.8889	0.235	0.538	106.9	0.000
2.9333	0.237	0.548	109.7	0.000
2.9778	0.238	0.559	112.5	0.000
3.0222	0.240	0.570	115.4	0.000
3.0667	0.241	0.580	118.3	0.000
3.1111	0.243	0.591	121.3	0.000
3.1556	0.244	0.602	124.2	0.000
3.2000	0.246	0.613	127.3	0.000
3.2444	0.248	0.624	130.3	0.000
3.2889	0.249	0.635	133.4	0.000
3.3333	0.251	0.646	136.5	0.000
3.3778	0.252	0.657	139.7	0.000
3.4222	0.254	0.669	142.9	0.000
3.4667	0.255	0.680	146.1	0.000
3.5111	0.257	0.691	149.3	0.000
3.5556	0.258	0.703	152.6	0.000
3.6000	0.260	0.714	156.0	0.000
3.6444	0.261	0.726	159.3	0.000
3.6889	0.263	0.738	162.7	0.000
3.7333	0.264	0.749	166.2	0.000
3.7778	0.266	0.761	169.6	0.000
3.8222	0.267	0.773	173.2	0.000
3.8667	0.269	0.785	176.7	0.000
3.9111	0.270	0.797	180.3	0.000
3.9556	0.272	0.809	183.9	0.000
4.0000	0.273	0.821	187.5	0.000
4.0444	0.275	0.833	191.2	0.000

DRAFT

Offsite 97

Bottom Length:	5539.00 ft.
Bottom Width:	6.00 ft.
Manning's n:	0.035
Channel bottom slope 1:	0.0078 To 1
Channel Left side slope 0:	0.5 To 1
Channel right side slope 2:	0.5 To 1
Discharge Structure	
Riser Height:	0 ft.
Riser Diameter:	0 in.
Element Flows To:	
Outlet 1	Outlet 2
SB 18 SF	

Channel Hydraulic Table

Stage(ft)	Area(ac)	Volume(ac-ft)	Discharge(cfs)	Infilt(cfs)
0.0000	0.762	0.000	0.000	0.000
0.0667	0.771	0.051	0.245	0.000
0.1333	0.779	0.102	0.774	0.000
0.2000	0.788	0.155	1.511	0.000
0.2667	0.796	0.208	2.427	0.000
0.3333	0.805	0.261	3.499	0.000
0.4000	0.813	0.315	4.716	0.000
0.4667	0.822	0.369	6.065	0.000
0.5333	0.830	0.425	7.538	0.000
0.6000	0.839	0.480	9.129	0.000
0.6667	0.847	0.536	10.83	0.000
0.7333	0.856	0.593	12.64	0.000
0.8000	0.864	0.651	14.55	0.000
0.8667	0.873	0.709	16.56	0.000
0.9333	0.881	0.767	18.67	0.000
1.0000	0.890	0.826	20.87	0.000
1.0667	0.898	0.886	23.16	0.000
1.1333	0.907	0.946	25.54	0.000
1.2000	0.915	1.007	28.00	0.000
1.2667	0.924	1.068	30.55	0.000
1.3333	0.932	1.130	33.19	0.000
1.4000	0.941	1.192	35.90	0.000
1.4667	0.949	1.255	38.70	0.000
1.5333	0.957	1.319	41.58	0.000
1.6000	0.966	1.383	44.53	0.000
1.6667	0.974	1.448	47.56	0.000
1.7333	0.983	1.513	50.67	0.000
1.8000	0.991	1.579	53.86	0.000
1.8667	1.000	1.645	57.12	0.000
1.9333	1.008	1.712	60.46	0.000
2.0000	1.017	1.780	63.87	0.000
2.0667	1.025	1.848	67.36	0.000
2.1333	1.034	1.917	70.92	0.000
2.2000	1.042	1.986	74.55	0.000
2.2667	1.051	2.056	78.26	0.000
2.3333	1.059	2.126	82.04	0.000
2.4000	1.068	2.197	85.89	0.000
2.4667	1.076	2.268	89.82	0.000
2.5333	1.085	2.340	93.82	0.000
2.6000	1.093	2.413	97.88	0.000

DRAFT

2.6667	1.102	2.486	102.0	0.000
2.7333	1.110	2.560	106.2	0.000
2.8000	1.119	2.634	110.5	0.000
2.8667	1.127	2.709	114.8	0.000
2.9333	1.136	2.785	119.3	0.000
3.0000	1.144	2.861	123.8	0.000
3.0667	1.152	2.937	128.3	0.000
3.1333	1.161	3.014	133.0	0.000
3.2000	1.169	3.092	137.7	0.000
3.2667	1.178	3.170	142.5	0.000
3.3333	1.186	3.249	147.3	0.000
3.4000	1.195	3.329	152.3	0.000
3.4667	1.203	3.409	157.3	0.000
3.5333	1.212	3.489	162.3	0.000
3.6000	1.220	3.570	167.5	0.000
3.6667	1.229	3.652	172.7	0.000
3.7333	1.237	3.734	178.0	0.000
3.8000	1.246	3.817	183.3	0.000
3.8667	1.254	3.900	188.8	0.000
3.9333	1.263	3.984	194.3	0.000
4.0000	1.271	4.069	199.8	0.000
4.0667	1.280	4.154	205.5	0.000
4.1333	1.288	4.239	211.2	0.000
4.2000	1.297	4.325	217.0	0.000
4.2667	1.305	4.412	222.9	0.000
4.3333	1.314	4.500	228.8	0.000
4.4000	1.322	4.587	234.8	0.000
4.4667	1.330	4.676	240.9	0.000
4.5333	1.339	4.765	247.1	0.000
4.6000	1.347	4.854	253.3	0.000
4.6667	1.356	4.945	259.6	0.000
4.7333	1.364	5.035	266.0	0.000
4.8000	1.373	5.127	272.4	0.000
4.8667	1.381	5.218	279.0	0.000
4.9333	1.390	5.311	285.6	0.000
5.0000	1.398	5.404	292.2	0.000
5.0667	1.407	5.497	299.0	0.000
5.1333	1.415	5.591	305.8	0.000
5.2000	1.424	5.686	312.7	0.000
5.2667	1.432	5.781	319.7	0.000
5.3333	1.441	5.877	326.7	0.000
5.4000	1.449	5.973	333.9	0.000
5.4667	1.458	6.070	341.1	0.000
5.5333	1.466	6.168	348.4	0.000
5.6000	1.475	6.266	355.7	0.000
5.6667	1.483	6.365	363.2	0.000
5.7333	1.492	6.464	370.7	0.000
5.8000	1.500	6.564	378.2	0.000
5.8667	1.509	6.664	385.9	0.000
5.9333	1.517	6.765	393.7	0.000
6.0000	1.525	6.866	401.5	0.000
6.0667	1.534	6.968	409.4	0.000

DRAFT

SF

Bottom Length: 4611.00 ft.
Bottom Width: 15.00 ft.
Manning's n: 0.035
Channel bottom slope 1: 0.0078 To 1
Channel Left side slope 0: 0.25 To 1
Channel right side slope 2: 0.25 To 1
Discharge Structure
Riser Height: 0 ft.
Riser Diameter: 0 in.
Element Flows To:
Outlet 1 Outlet 2
POC 6

Channel Hydraulic Table

Stage(ft)	Area(ac)	Volume(ac-ft)	Discharge(cfs)	Infilt(cfs)
0.0000	1.587	0.000	0.000	0.000
0.0889	1.592	0.141	0.992	0.000
0.1778	1.597	0.283	3.134	0.000
0.2667	1.601	0.425	6.128	0.000
0.3556	1.606	0.567	9.845	0.000
0.4444	1.611	0.710	14.20	0.000
0.5333	1.616	0.854	19.15	0.000
0.6222	1.620	0.998	24.63	0.000
0.7111	1.625	1.142	30.62	0.000
0.8000	1.630	1.287	37.07	0.000
0.8889	1.634	1.432	43.98	0.000
0.9778	1.639	1.577	51.30	0.000
1.0667	1.644	1.723	59.03	0.000
1.1556	1.649	1.870	67.14	0.000
1.2444	1.653	2.016	75.63	0.000
1.3333	1.658	2.164	84.46	0.000
1.4222	1.663	2.311	93.64	0.000
1.5111	1.667	2.459	103.1	0.000
1.6000	1.672	2.608	112.9	0.000
1.6889	1.677	2.757	123.1	0.000
1.7778	1.681	2.906	133.5	0.000
1.8667	1.686	3.056	144.2	0.000
1.9556	1.691	3.206	155.2	0.000
2.0444	1.696	3.356	166.5	0.000
2.1333	1.700	3.507	178.0	0.000
2.2222	1.705	3.659	189.8	0.000
2.3111	1.710	3.811	201.8	0.000
2.4000	1.714	3.963	214.1	0.000
2.4889	1.719	4.115	226.7	0.000
2.5778	1.724	4.268	239.5	0.000
2.6667	1.729	4.422	252.5	0.000
2.7556	1.733	4.576	265.7	0.000
2.8444	1.738	4.730	279.2	0.000
2.9333	1.743	4.885	292.8	0.000
3.0222	1.747	5.040	306.7	0.000
3.1111	1.752	5.196	320.8	0.000
3.2000	1.757	5.352	335.1	0.000
3.2889	1.761	5.508	349.6	0.000
3.3778	1.766	5.665	364.3	0.000
3.4667	1.771	5.822	379.2	0.000

DRAFT

3.5556	1.776	5.980	394.3	0.000
3.6444	1.780	6.138	409.6	0.000
3.7333	1.785	6.296	425.1	0.000
3.8222	1.790	6.455	440.8	0.000
3.9111	1.794	6.615	456.6	0.000
4.0000	1.799	6.774	472.6	0.000
4.0889	1.804	6.934	488.8	0.000
4.1778	1.809	7.095	505.2	0.000
4.2667	1.813	7.256	521.8	0.000
4.3556	1.818	7.417	538.5	0.000
4.4444	1.823	7.579	555.4	0.000
4.5333	1.827	7.742	572.5	0.000
4.6222	1.832	7.904	589.7	0.000
4.7111	1.837	8.067	607.1	0.000
4.8000	1.841	8.231	624.7	0.000
4.8889	1.846	8.395	642.4	0.000
4.9778	1.851	8.559	660.3	0.000
5.0667	1.856	8.724	678.3	0.000
5.1556	1.860	8.889	696.5	0.000
5.2444	1.865	9.055	714.9	0.000
5.3333	1.870	9.221	733.4	0.000
5.4222	1.874	9.387	752.1	0.000
5.5111	1.879	9.554	770.9	0.000
5.6000	1.884	9.721	789.8	0.000
5.6889	1.888	9.889	809.0	0.000
5.7778	1.893	10.05	828.2	0.000
5.8667	1.898	10.22	847.7	0.000
5.9556	1.903	10.39	867.2	0.000
6.0444	1.907	10.56	886.9	0.000
6.1333	1.912	10.73	906.8	0.000
6.2222	1.917	10.90	926.8	0.000
6.3111	1.921	11.07	946.9	0.000
6.4000	1.926	11.24	967.2	0.000
6.4889	1.931	11.41	987.6	0.000
6.5778	1.936	11.58	1008.	0.000
6.6667	1.940	11.76	1028.	0.000
6.7556	1.945	11.93	1049.	0.000
6.8444	1.950	12.10	1070.	0.000
6.9333	1.954	12.28	1091.	0.000
7.0222	1.959	12.45	1113.	0.000
7.1111	1.964	12.62	1134.	0.000
7.2000	1.968	12.80	1156.	0.000
7.2889	1.973	12.97	1177.	0.000
7.3778	1.978	13.15	1199.	0.000
7.4667	1.983	13.33	1221.	0.000
7.5556	1.987	13.50	1243.	0.000
7.6444	1.992	13.68	1265.	0.000
7.7333	1.997	13.86	1288.	0.000
7.8222	2.001	14.04	1310.	0.000
7.9111	2.006	14.21	1333.	0.000
8.0000	2.011	14.39	1355.	0.000
8.0889	2.016	14.57	1378.	0.000

DRAFT

Channel 13

Bottom Length: 1563.00 ft.
Bottom Width: 5.00 ft.
Manning's n: 0.035
Channel bottom slope 1: 0.0218 To 1
Channel Left side slope 0: 0.5 To 1
Channel right side slope 2: 0.5 To 1
Discharge Structure
Riser Height: 0 ft.
Riser Diameter: 0 in.
Element Flows To:
Outlet 1 Outlet 2
POC 6

Channel Hydraulic Table

Stage(ft)	Area(ac)	Volume(ac-ft)	Discharge(cfs)	Infilt(cfs)
0.0000	0.179	0.000	0.000	0.000
0.0889	0.182	0.016	0.550	0.000
0.1778	0.185	0.032	1.728	0.000
0.2667	0.189	0.049	3.365	0.000
0.3556	0.192	0.066	5.387	0.000
0.4444	0.195	0.083	7.750	0.000
0.5333	0.198	0.100	10.42	0.000
0.6222	0.201	0.118	13.38	0.000
0.7111	0.204	0.136	16.60	0.000
0.8000	0.208	0.155	20.08	0.000
0.8889	0.211	0.173	23.81	0.000
0.9778	0.214	0.192	27.76	0.000
1.0667	0.217	0.211	31.95	0.000
1.1556	0.220	0.231	36.35	0.000
1.2444	0.224	0.251	40.96	0.000
1.3333	0.227	0.271	45.78	0.000
1.4222	0.230	0.291	50.81	0.000
1.5111	0.233	0.312	56.04	0.000
1.6000	0.236	0.333	61.47	0.000
1.6889	0.240	0.354	67.09	0.000
1.7778	0.243	0.375	72.91	0.000
1.8667	0.246	0.397	78.93	0.000
1.9556	0.249	0.419	85.13	0.000
2.0444	0.252	0.441	91.53	0.000
2.1333	0.256	0.464	98.12	0.000
2.2222	0.259	0.487	104.9	0.000
2.3111	0.262	0.510	111.8	0.000
2.4000	0.265	0.533	119.0	0.000
2.4889	0.268	0.557	126.3	0.000
2.5778	0.271	0.581	133.8	0.000
2.6667	0.275	0.606	141.6	0.000
2.7556	0.278	0.630	149.5	0.000
2.8444	0.281	0.655	157.6	0.000
2.9333	0.284	0.680	165.8	0.000
3.0222	0.287	0.706	174.3	0.000
3.1111	0.291	0.731	183.0	0.000
3.2000	0.294	0.757	191.8	0.000
3.2889	0.297	0.784	200.9	0.000
3.3778	0.300	0.810	210.1	0.000
3.4667	0.303	0.837	219.5	0.000

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3.5556	0.307	0.864	229.1	0.000
3.6444	0.310	0.892	238.9	0.000
3.7333	0.313	0.919	248.9	0.000
3.8222	0.316	0.947	259.1	0.000
3.9111	0.319	0.976	269.5	0.000
4.0000	0.323	1.004	280.1	0.000
4.0889	0.326	1.033	290.9	0.000
4.1778	0.329	1.062	301.8	0.000
4.2667	0.332	1.092	313.0	0.000
4.3556	0.335	1.121	324.4	0.000
4.4444	0.338	1.151	335.9	0.000
4.5333	0.342	1.182	347.7	0.000
4.6222	0.345	1.212	359.7	0.000
4.7111	0.348	1.243	371.8	0.000
4.8000	0.351	1.274	384.2	0.000
4.8889	0.354	1.306	396.8	0.000
4.9778	0.358	1.337	409.5	0.000
5.0667	0.361	1.369	422.5	0.000
5.1556	0.364	1.401	435.7	0.000
5.2444	0.367	1.434	449.1	0.000
5.3333	0.370	1.467	462.7	0.000
5.4222	0.374	1.500	476.5	0.000
5.5111	0.377	1.533	490.5	0.000
5.6000	0.380	1.567	504.7	0.000
5.6889	0.383	1.601	519.2	0.000
5.7778	0.386	1.635	533.8	0.000
5.8667	0.390	1.670	548.7	0.000
5.9556	0.393	1.705	563.7	0.000
6.0444	0.396	1.740	579.0	0.000
6.1333	0.399	1.775	594.5	0.000
6.2222	0.402	1.811	610.3	0.000
6.3111	0.405	1.847	626.2	0.000
6.4000	0.409	1.883	642.3	0.000
6.4889	0.412	1.919	658.7	0.000
6.5778	0.415	1.956	675.3	0.000
6.6667	0.418	1.993	692.1	0.000
6.7556	0.421	2.031	709.2	0.000
6.8444	0.425	2.068	726.4	0.000
6.9333	0.428	2.106	743.9	0.000
7.0222	0.431	2.144	761.6	0.000
7.1111	0.434	2.183	779.6	0.000
7.2000	0.437	2.222	797.7	0.000
7.2889	0.441	2.261	816.1	0.000
7.3778	0.444	2.300	834.7	0.000
7.4667	0.447	2.340	853.6	0.000
7.5556	0.450	2.380	872.7	0.000
7.6444	0.453	2.420	892.0	0.000
7.7333	0.457	2.460	911.5	0.000
7.8222	0.460	2.501	931.3	0.000
7.9111	0.463	2.542	951.3	0.000
8.0000	0.466	2.583	971.6	0.000
8.0889	0.469	2.625	992.0	0.000

DRAFT

POC 6

Bottom Length: 1704.00 ft.
Bottom Width: 20.00 ft.
Manning's n: 0.035
Channel bottom slope 1: 0.0088 To 1
Channel Left side slope 0: 0.25 To 1
Channel right side slope 2: 0.25 To 1
Discharge Structure
Riser Height: 0 ft.
Riser Diameter: 0 in.
Element Flows To:
Outlet 1 Outlet 2
Upstream POC 5

Channel Hydraulic Table

Stage(ft)	Area(ac)	Volume(ac-ft)	Discharge(cfs)	Infilt(cfs)
0.0000	0.782	0.000	0.000	0.000
0.1111	0.784	0.087	2.380	0.000
0.2222	0.786	0.174	7.518	0.000
0.3333	0.788	0.261	14.70	0.000
0.4444	0.791	0.349	23.62	0.000
0.5556	0.793	0.437	34.10	0.000
0.6667	0.795	0.525	45.98	0.000
0.7778	0.797	0.614	59.17	0.000
0.8889	0.799	0.703	73.57	0.000
1.0000	0.801	0.792	89.11	0.000
1.1111	0.804	0.881	105.7	0.000
1.2222	0.806	0.970	123.3	0.000
1.3333	0.808	1.060	141.9	0.000
1.4444	0.810	1.150	161.5	0.000
1.5556	0.812	1.240	181.9	0.000
1.6667	0.815	1.331	203.2	0.000
1.7778	0.817	1.421	225.4	0.000
1.8889	0.819	1.512	248.3	0.000
2.0000	0.821	1.603	272.0	0.000
2.1111	0.823	1.695	296.5	0.000
2.2222	0.825	1.786	321.6	0.000
2.3333	0.828	1.878	347.5	0.000
2.4444	0.830	1.970	374.1	0.000
2.5556	0.832	2.063	401.3	0.000
2.6667	0.834	2.155	429.2	0.000
2.7778	0.836	2.248	457.7	0.000
2.8889	0.838	2.341	486.8	0.000
3.0000	0.841	2.435	516.6	0.000
3.1111	0.843	2.528	546.9	0.000
3.2222	0.845	2.622	577.8	0.000
3.3333	0.847	2.716	609.3	0.000
3.4444	0.849	2.810	641.3	0.000
3.5556	0.851	2.905	673.8	0.000
3.6667	0.854	3.000	706.9	0.000
3.7778	0.856	3.095	740.5	0.000
3.8889	0.858	3.190	774.7	0.000
4.0000	0.860	3.286	809.3	0.000
4.1111	0.862	3.381	844.4	0.000
4.2222	0.865	3.477	880.0	0.000
4.3333	0.867	3.574	916.1	0.000

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4.4444	0.869	3.670	952.7	0.000
4.5556	0.871	3.767	989.7	0.000
4.6667	0.873	3.864	1027.	0.000
4.7778	0.875	3.961	1065.	0.000
4.8889	0.878	4.058	1103.	0.000
5.0000	0.880	4.156	1142.	0.000
5.1111	0.882	4.254	1181.	0.000
5.2222	0.884	4.352	1221.	0.000
5.3333	0.886	4.450	1261.	0.000
5.4444	0.888	4.549	1301.	0.000
5.5556	0.891	4.648	1342.	0.000
5.6667	0.893	4.747	1384.	0.000
5.7778	0.895	4.847	1426.	0.000
5.8889	0.897	4.946	1468.	0.000
6.0000	0.899	5.046	1510.	0.000
6.1111	0.902	5.146	1553.	0.000
6.2222	0.904	5.246	1597.	0.000
6.3333	0.906	5.347	1640.	0.000
6.4444	0.908	5.448	1684.	0.000
6.5556	0.910	5.549	1729.	0.000
6.6667	0.912	5.650	1774.	0.000
6.7778	0.915	5.752	1819.	0.000
6.8889	0.917	5.854	1865.	0.000
7.0000	0.919	5.956	1911.	0.000
7.1111	0.921	6.058	1957.	0.000
7.2222	0.923	6.160	2004.	0.000
7.3333	0.925	6.263	2051.	0.000
7.4444	0.928	6.366	2098.	0.000
7.5556	0.930	6.469	2146.	0.000
7.6667	0.932	6.573	2194.	0.000
7.7778	0.934	6.677	2242.	0.000
7.8889	0.936	6.780	2291.	0.000
8.0000	0.938	6.885	2340.	0.000
8.1111	0.941	6.989	2390.	0.000
8.2222	0.943	7.094	2440.	0.000
8.3333	0.945	7.199	2490.	0.000
8.4444	0.947	7.304	2540.	0.000
8.5556	0.949	7.409	2591.	0.000
8.6667	0.952	7.515	2642.	0.000
8.7778	0.954	7.621	2694.	0.000
8.8889	0.956	7.727	2746.	0.000
9.0000	0.958	7.833	2798.	0.000
9.1111	0.960	7.940	2850.	0.000
9.2222	0.962	8.047	2903.	0.000
9.3333	0.965	8.154	2956.	0.000
9.4444	0.967	8.261	3010.	0.000
9.5556	0.969	8.369	3063.	0.000
9.6667	0.971	8.477	3117.	0.000
9.7778	0.973	8.585	3172.	0.000
9.8889	0.975	8.693	3227.	0.000
10.000	0.978	8.802	3282.	0.000
10.111	0.980	8.910	3337.	0.000

DRAFT

NF

Bottom Length: 759.00 ft.
Bottom Width: 10.00 ft.
Manning's n: 0.035
Channel bottom slope 1: 0.0264 To 1
Channel Left side slope 0: 0.5 To 1
Channel right side slope 2: 0.5 To 1
Discharge Structure
Riser Height: 0 ft.
Riser Diameter: 0 in.
Element Flows To:
Outlet 1 Outlet 2
POC 6

Channel Hydraulic Table

Stage(ft)	Area(ac)	Volume(ac-ft)	Discharge(cfs)	Infilt(cfs)
0.0000	0.174	0.000	0.000	0.000
0.0889	0.175	0.015	1.420	0.000
0.1778	0.177	0.031	4.485	0.000
0.2667	0.178	0.047	8.769	0.000
0.3556	0.180	0.063	14.09	0.000
0.4444	0.182	0.079	20.34	0.000
0.5333	0.183	0.095	27.43	0.000
0.6222	0.185	0.111	35.31	0.000
0.7111	0.186	0.128	43.92	0.000
0.8000	0.188	0.145	53.22	0.000
0.8889	0.189	0.161	63.18	0.000
0.9778	0.191	0.178	73.77	0.000
1.0667	0.192	0.195	84.96	0.000
1.1556	0.194	0.213	96.74	0.000
1.2444	0.195	0.230	109.0	0.000
1.3333	0.197	0.247	121.9	0.000
1.4222	0.199	0.265	135.3	0.000
1.5111	0.200	0.283	149.3	0.000
1.6000	0.202	0.301	163.7	0.000
1.6889	0.203	0.319	178.7	0.000
1.7778	0.205	0.337	194.1	0.000
1.8667	0.206	0.355	210.0	0.000
1.9556	0.208	0.374	226.3	0.000
2.0444	0.209	0.392	243.1	0.000
2.1333	0.211	0.411	260.4	0.000
2.2222	0.213	0.430	278.1	0.000
2.3111	0.214	0.449	296.3	0.000
2.4000	0.216	0.468	314.9	0.000
2.4889	0.217	0.487	333.9	0.000
2.5778	0.219	0.507	353.3	0.000
2.6667	0.220	0.526	373.2	0.000
2.7556	0.222	0.546	393.5	0.000
2.8444	0.223	0.566	414.2	0.000
2.9333	0.225	0.586	435.3	0.000
3.0222	0.227	0.606	456.8	0.000
3.1111	0.228	0.626	478.8	0.000
3.2000	0.230	0.646	501.1	0.000
3.2889	0.231	0.667	523.8	0.000
3.3778	0.233	0.688	546.9	0.000
3.4667	0.234	0.708	570.5	0.000

DRAFT

3.5556	0.236	0.729	594.4	0.000
3.6444	0.237	0.750	618.7	0.000
3.7333	0.239	0.772	643.4	0.000
3.8222	0.240	0.793	668.5	0.000
3.9111	0.242	0.814	694.0	0.000
4.0000	0.244	0.836	719.9	0.000
4.0889	0.245	0.858	746.1	0.000
4.1778	0.247	0.880	772.8	0.000
4.2667	0.248	0.902	799.8	0.000
4.3556	0.250	0.924	827.3	0.000
4.4444	0.251	0.946	855.1	0.000
4.5333	0.253	0.969	883.3	0.000
4.6222	0.254	0.991	911.8	0.000
4.7111	0.256	1.014	940.8	0.000
4.8000	0.258	1.037	970.2	0.000
4.8889	0.259	1.060	999.9	0.000
4.9778	0.261	1.083	1030.	0.000
5.0667	0.262	1.106	1060.	0.000
5.1556	0.264	1.130	1091.	0.000
5.2444	0.265	1.153	1122.	0.000
5.3333	0.267	1.177	1154.	0.000
5.4222	0.268	1.201	1186.	0.000
5.5111	0.270	1.225	1218.	0.000
5.6000	0.271	1.249	1251.	0.000
5.6889	0.273	1.273	1284.	0.000
5.7778	0.275	1.297	1318.	0.000
5.8667	0.276	1.322	1352.	0.000
5.9556	0.278	1.347	1386.	0.000
6.0444	0.279	1.371	1421.	0.000
6.1333	0.281	1.396	1456.	0.000
6.2222	0.282	1.421	1491.	0.000
6.3111	0.284	1.447	1527.	0.000
6.4000	0.285	1.472	1564.	0.000
6.4889	0.287	1.497	1600.	0.000
6.5778	0.289	1.523	1637.	0.000
6.6667	0.290	1.549	1675.	0.000
6.7556	0.292	1.575	1713.	0.000
6.8444	0.293	1.601	1751.	0.000
6.9333	0.295	1.627	1789.	0.000
7.0222	0.296	1.653	1828.	0.000
7.1111	0.298	1.680	1868.	0.000
7.2000	0.299	1.706	1907.	0.000
7.2889	0.301	1.733	1948.	0.000
7.3778	0.303	1.760	1988.	0.000
7.4667	0.304	1.787	2029.	0.000
7.5556	0.306	1.814	2070.	0.000
7.6444	0.307	1.841	2112.	0.000
7.7333	0.309	1.869	2154.	0.000
7.8222	0.310	1.896	2197.	0.000
7.9111	0.312	1.924	2240.	0.000
8.0000	0.313	1.952	2283.	0.000
8.0889	0.315	1.980	2327.	0.000

DRAFT

POC 7

Bottom Length: 227.00 ft.
Bottom Width: 7.00 ft.
Manning's n: 0.035
Channel bottom slope 1: 0.0264 To 1
Channel Left side slope 0: 0.5 To 1
Channel right side slope 2: 0.5 To 1
Discharge Structure
Riser Height: 0 ft.
Riser Diameter: 0 in.
Element Flows To:
Outlet 1 Outlet 2
NF

Channel Hydraulic Table

Stage(ft)	Area(ac)	Volume(ac-ft)	Discharge(cfs)	Infilt(cfs)
0.0000	0.036	0.000	0.000	0.000
0.0889	0.036	0.003	0.850	0.000
0.1778	0.037	0.006	2.678	0.000
0.2667	0.037	0.009	5.227	0.000
0.3556	0.038	0.013	8.385	0.000
0.4444	0.038	0.016	12.08	0.000
0.5333	0.039	0.020	16.27	0.000
0.6222	0.039	0.023	20.92	0.000
0.7111	0.040	0.027	25.99	0.000
0.8000	0.040	0.030	31.46	0.000
0.8889	0.041	0.034	37.32	0.000
0.9778	0.041	0.038	43.54	0.000
1.0667	0.042	0.041	50.11	0.000
1.1556	0.042	0.045	57.03	0.000
1.2444	0.043	0.049	64.27	0.000
1.3333	0.043	0.053	71.84	0.000
1.4222	0.043	0.057	79.71	0.000
1.5111	0.044	0.061	87.90	0.000
1.6000	0.044	0.065	96.38	0.000
1.6889	0.045	0.069	105.1	0.000
1.7778	0.045	0.073	114.2	0.000
1.8667	0.046	0.077	123.5	0.000
1.9556	0.046	0.081	133.2	0.000
2.0444	0.047	0.085	143.1	0.000
2.1333	0.047	0.089	153.3	0.000
2.2222	0.048	0.094	163.8	0.000
2.3111	0.048	0.098	174.5	0.000
2.4000	0.049	0.102	185.5	0.000
2.4889	0.049	0.107	196.8	0.000
2.5778	0.049	0.111	208.3	0.000
2.6667	0.050	0.115	220.1	0.000
2.7556	0.050	0.120	232.2	0.000
2.8444	0.051	0.124	244.5	0.000
2.9333	0.051	0.129	257.1	0.000
3.0222	0.052	0.134	270.0	0.000
3.1111	0.052	0.138	283.1	0.000
3.2000	0.053	0.143	296.5	0.000
3.2889	0.053	0.148	310.1	0.000
3.3778	0.054	0.153	324.0	0.000
3.4667	0.054	0.157	338.2	0.000

DRAFT

3.5556	0.055	0.162	352.6	0.000
3.6444	0.055	0.167	367.2	0.000
3.7333	0.056	0.172	382.2	0.000
3.8222	0.056	0.177	397.4	0.000
3.9111	0.056	0.182	412.8	0.000
4.0000	0.057	0.187	428.5	0.000
4.0889	0.057	0.192	444.5	0.000
4.1778	0.058	0.198	460.7	0.000
4.2667	0.058	0.203	477.2	0.000
4.3556	0.059	0.208	494.0	0.000
4.4444	0.059	0.213	511.0	0.000
4.5333	0.060	0.219	528.2	0.000
4.6222	0.060	0.224	545.8	0.000
4.7111	0.061	0.229	563.6	0.000
4.8000	0.061	0.235	581.6	0.000
4.8889	0.062	0.240	599.9	0.000
4.9778	0.062	0.246	618.5	0.000
5.0667	0.063	0.251	637.4	0.000
5.1556	0.063	0.257	656.5	0.000
5.2444	0.063	0.263	675.9	0.000
5.3333	0.064	0.268	695.5	0.000
5.4222	0.064	0.274	715.4	0.000
5.5111	0.065	0.280	735.6	0.000
5.6000	0.065	0.286	756.1	0.000
5.6889	0.066	0.292	776.8	0.000
5.7778	0.066	0.298	797.8	0.000
5.8667	0.067	0.303	819.1	0.000
5.9556	0.067	0.309	840.6	0.000
6.0444	0.068	0.315	862.4	0.000
6.1333	0.068	0.322	884.5	0.000
6.2222	0.069	0.328	906.8	0.000
6.3111	0.069	0.334	929.5	0.000
6.4000	0.069	0.340	952.4	0.000
6.4889	0.070	0.346	975.5	0.000
6.5778	0.070	0.353	999.0	0.000
6.6667	0.071	0.359	1022.	0.000
6.7556	0.071	0.365	1046.	0.000
6.8444	0.072	0.372	1071.	0.000
6.9333	0.072	0.378	1095.	0.000
7.0222	0.073	0.385	1120.	0.000
7.1111	0.073	0.391	1145.	0.000
7.2000	0.074	0.398	1171.	0.000
7.2889	0.074	0.404	1196.	0.000
7.3778	0.075	0.411	1222.	0.000
7.4667	0.075	0.418	1249.	0.000
7.5556	0.076	0.424	1275.	0.000
7.6444	0.076	0.431	1302.	0.000
7.7333	0.076	0.438	1329.	0.000
7.8222	0.077	0.445	1357.	0.000
7.9111	0.077	0.452	1384.	0.000
8.0000	0.078	0.459	1412.	0.000
8.0889	0.078	0.466	1441.	0.000

DRAFT

Channel 8

Bottom Length: 1453.00 ft.
Bottom Width: 7.00 ft.
Manning's n: 0.035
Channel bottom slope 1: 0.0138 To 1
Channel Left side slope 0: 0.5 To 1
Channel right side slope 2: 0.5 To 1
Discharge Structure
Riser Height: 0 ft.
Riser Diameter: 0 in.
Element Flows To:
Outlet 1 Outlet 2
POC 7

Channel Hydraulic Table

Stage(ft)	Area(ac)	Volume(ac-ft)	Discharge(cfs)	Infilt(cfs)
0.0000	0.233	0.000	0.000	0.000
0.0889	0.236	0.020	0.614	0.000
0.1778	0.239	0.042	1.936	0.000
0.2667	0.242	0.063	3.779	0.000
0.3556	0.245	0.085	6.062	0.000
0.4444	0.248	0.107	8.737	0.000
0.5333	0.251	0.129	11.76	0.000
0.6222	0.254	0.151	15.12	0.000
0.7111	0.257	0.174	18.79	0.000
0.8000	0.260	0.197	22.75	0.000
0.8889	0.263	0.220	26.98	0.000
0.9778	0.266	0.244	31.48	0.000
1.0667	0.269	0.268	36.23	0.000
1.1556	0.272	0.292	41.23	0.000
1.2444	0.275	0.316	46.47	0.000
1.3333	0.278	0.341	51.94	0.000
1.4222	0.280	0.365	57.63	0.000
1.5111	0.283	0.390	63.55	0.000
1.6000	0.286	0.416	69.68	0.000
1.6889	0.289	0.441	76.03	0.000
1.7778	0.292	0.467	82.59	0.000
1.8667	0.295	0.494	89.35	0.000
1.9556	0.298	0.520	96.32	0.000
2.0444	0.301	0.547	103.4	0.000
2.1333	0.304	0.574	110.8	0.000
2.2222	0.307	0.601	118.4	0.000
2.3111	0.310	0.628	126.1	0.000
2.4000	0.313	0.656	134.1	0.000
2.4889	0.316	0.684	142.3	0.000
2.5778	0.319	0.712	150.6	0.000
2.6667	0.322	0.741	159.1	0.000
2.7556	0.325	0.770	167.9	0.000
2.8444	0.328	0.799	176.8	0.000
2.9333	0.331	0.828	185.9	0.000
3.0222	0.334	0.858	195.2	0.000
3.1111	0.337	0.887	204.7	0.000
3.2000	0.340	0.918	214.3	0.000
3.2889	0.343	0.948	224.2	0.000
3.3778	0.346	0.979	234.2	0.000
3.4667	0.349	1.009	244.5	0.000

DRAFT

3.5556	0.352	1.041	254.9	0.000
3.6444	0.355	1.072	265.5	0.000
3.7333	0.358	1.104	276.3	0.000
3.8222	0.361	1.136	287.3	0.000
3.9111	0.364	1.168	298.5	0.000
4.0000	0.366	1.200	309.8	0.000
4.0889	0.369	1.233	321.4	0.000
4.1778	0.372	1.266	333.1	0.000
4.2667	0.375	1.299	345.0	0.000
4.3556	0.378	1.333	357.1	0.000
4.4444	0.381	1.367	369.4	0.000
4.5333	0.384	1.401	381.9	0.000
4.6222	0.387	1.435	394.6	0.000
4.7111	0.390	1.470	407.4	0.000
4.8000	0.393	1.505	420.5	0.000
4.8889	0.396	1.540	433.8	0.000
4.9778	0.399	1.575	447.2	0.000
5.0667	0.402	1.611	460.8	0.000
5.1556	0.405	1.647	474.6	0.000
5.2444	0.408	1.683	488.7	0.000
5.3333	0.411	1.719	502.9	0.000
5.4222	0.414	1.756	517.3	0.000
5.5111	0.417	1.793	531.8	0.000
5.6000	0.420	1.830	546.6	0.000
5.6889	0.423	1.868	561.6	0.000
5.7778	0.426	1.906	576.8	0.000
5.8667	0.429	1.944	592.2	0.000
5.9556	0.432	1.982	607.7	0.000
6.0444	0.435	2.020	623.5	0.000
6.1333	0.438	2.059	639.5	0.000
6.2222	0.441	2.098	655.6	0.000
6.3111	0.444	2.138	672.0	0.000
6.4000	0.447	2.177	688.5	0.000
6.4889	0.450	2.217	705.3	0.000
6.5778	0.453	2.257	722.3	0.000
6.6667	0.455	2.298	739.4	0.000
6.7556	0.458	2.338	756.8	0.000
6.8444	0.461	2.379	774.3	0.000
6.9333	0.464	2.420	792.1	0.000
7.0222	0.467	2.462	810.1	0.000
7.1111	0.470	2.504	828.3	0.000
7.2000	0.473	2.545	846.6	0.000
7.2889	0.476	2.588	865.2	0.000
7.3778	0.479	2.630	884.0	0.000
7.4667	0.482	2.673	903.0	0.000
7.5556	0.485	2.716	922.2	0.000
7.6444	0.488	2.759	941.6	0.000
7.7333	0.491	2.803	961.2	0.000
7.8222	0.494	2.847	981.1	0.000
7.9111	0.497	2.891	1001.	0.000
8.0000	0.500	2.935	1021.	0.000
8.0889	0.503	2.980	1041.	0.000

DRAFT

Urban 1

Bottom Length: 2254.00 ft.
Bottom Width: 6.00 ft.
Manning's n: 0.035
Channel bottom slope 1: 0.0142 To 1
Channel Left side slope 0: 0.5 To 1
Channel right side slope 2: 0.5 To 1
Discharge Structure
Riser Height: 0 ft.
Riser Diameter: 0 in.
Element Flows To:
Outlet 1 Outlet 2
POC 7

Channel Hydraulic Table

Stage(ft)	Area(ac)	Volume(ac-ft)	Discharge(cfs)	Infilt(cfs)
0.0000	0.310	0.000	0.000	0.000
0.0889	0.315	0.027	0.533	0.000
0.1778	0.319	0.056	1.679	0.000
0.2667	0.324	0.084	3.274	0.000
0.3556	0.328	0.113	5.248	0.000
0.4444	0.333	0.143	7.557	0.000
0.5333	0.338	0.172	10.17	0.000
0.6222	0.342	0.203	13.06	0.000
0.7111	0.347	0.233	16.22	0.000
0.8000	0.351	0.264	19.63	0.000
0.8889	0.356	0.296	23.28	0.000
0.9778	0.361	0.328	27.15	0.000
1.0667	0.365	0.360	31.25	0.000
1.1556	0.370	0.393	35.55	0.000
1.2444	0.374	0.426	40.06	0.000
1.3333	0.379	0.460	44.78	0.000
1.4222	0.384	0.493	49.69	0.000
1.5111	0.388	0.528	54.79	0.000
1.6000	0.393	0.563	60.09	0.000
1.6889	0.397	0.598	65.57	0.000
1.7778	0.402	0.633	71.23	0.000
1.8667	0.407	0.669	77.08	0.000
1.9556	0.411	0.706	83.10	0.000
2.0444	0.416	0.742	89.31	0.000
2.1333	0.420	0.780	95.69	0.000
2.2222	0.425	0.817	102.2	0.000
2.3111	0.430	0.855	108.9	0.000
2.4000	0.434	0.894	115.9	0.000
2.4889	0.439	0.933	122.9	0.000
2.5778	0.443	0.972	130.2	0.000
2.6667	0.448	1.011	137.6	0.000
2.7556	0.453	1.052	145.2	0.000
2.8444	0.457	1.092	153.0	0.000
2.9333	0.462	1.133	160.9	0.000
3.0222	0.466	1.174	169.0	0.000
3.1111	0.471	1.216	177.3	0.000
3.2000	0.476	1.258	185.8	0.000
3.2889	0.480	1.301	194.4	0.000
3.3778	0.485	1.343	203.2	0.000
3.4667	0.489	1.387	212.2	0.000

DRAFT

3.5556	0.494	1.431	221.3	0.000
3.6444	0.499	1.475	230.7	0.000
3.7333	0.503	1.519	240.1	0.000
3.8222	0.508	1.564	249.8	0.000
3.9111	0.512	1.610	259.6	0.000
4.0000	0.517	1.655	269.6	0.000
4.0889	0.522	1.702	279.8	0.000
4.1778	0.526	1.748	290.2	0.000
4.2667	0.531	1.795	300.7	0.000
4.3556	0.535	1.843	311.4	0.000
4.4444	0.540	1.891	322.3	0.000
4.5333	0.545	1.939	333.4	0.000
4.6222	0.549	1.987	344.6	0.000
4.7111	0.554	2.036	356.0	0.000
4.8000	0.558	2.086	367.6	0.000
4.8889	0.563	2.136	379.4	0.000
4.9778	0.568	2.186	391.3	0.000
5.0667	0.572	2.237	403.4	0.000
5.1556	0.577	2.288	415.7	0.000
5.2444	0.581	2.339	428.2	0.000
5.3333	0.586	2.391	440.9	0.000
5.4222	0.591	2.444	453.7	0.000
5.5111	0.595	2.496	466.8	0.000
5.6000	0.600	2.550	480.0	0.000
5.6889	0.604	2.603	493.4	0.000
5.7778	0.609	2.657	506.9	0.000
5.8667	0.614	2.712	520.7	0.000
5.9556	0.618	2.766	534.7	0.000
6.0444	0.623	2.822	548.8	0.000
6.1333	0.627	2.877	563.1	0.000
6.2222	0.632	2.933	577.6	0.000
6.3111	0.637	2.990	592.3	0.000
6.4000	0.641	3.046	607.2	0.000
6.4889	0.646	3.104	622.3	0.000
6.5778	0.650	3.161	637.6	0.000
6.6667	0.655	3.219	653.0	0.000
6.7556	0.660	3.278	668.7	0.000
6.8444	0.664	3.337	684.5	0.000
6.9333	0.669	3.396	700.6	0.000
7.0222	0.673	3.456	716.8	0.000
7.1111	0.678	3.516	733.2	0.000
7.2000	0.683	3.576	749.9	0.000
7.2889	0.687	3.637	766.7	0.000
7.3778	0.692	3.699	783.7	0.000
7.4667	0.696	3.760	800.9	0.000
7.5556	0.701	3.822	818.3	0.000
7.6444	0.706	3.885	835.9	0.000
7.7333	0.710	3.948	853.7	0.000
7.8222	0.715	4.011	871.8	0.000
7.9111	0.719	4.075	890.0	0.000
8.0000	0.724	4.139	908.4	0.000
8.0889	0.729	4.204	927.0	0.000

DRAFT

Upstream POC 5

Bottom Length: 1876.00 ft.
Bottom Width: 20.00 ft.
Manning's n: 0.035
Channel bottom slope 1: 0.0048 To 1
Channel Left side slope 0: 0.25 To 1
Channel right side slope 2: 0.25 To 1
Discharge Structure
Riser Height: 0 ft.
Riser Diameter: 0 in.
Element Flows To:
Outlet 1 Outlet 2
POC 5

Channel Hydraulic Table

Stage(ft)	Area(ac)	Volume(ac-ft)	Discharge(cfs)	Infilt(cfs)
0.0000	0.861	0.000	0.000	0.000
0.1111	0.863	0.095	1.506	0.000
0.2222	0.866	0.191	4.759	0.000
0.3333	0.868	0.288	9.306	0.000
0.4444	0.870	0.384	14.95	0.000
0.5556	0.873	0.481	21.58	0.000
0.6667	0.875	0.579	29.11	0.000
0.7778	0.878	0.676	37.45	0.000
0.8889	0.880	0.774	46.57	0.000
1.0000	0.882	0.872	56.41	0.000
1.1111	0.885	0.970	66.93	0.000
1.2222	0.887	1.068	78.09	0.000
1.3333	0.890	1.167	89.88	0.000
1.4444	0.892	1.266	102.2	0.000
1.5556	0.894	1.365	115.2	0.000
1.6667	0.897	1.465	128.6	0.000
1.7778	0.899	1.565	142.7	0.000
1.8889	0.902	1.665	157.2	0.000
2.0000	0.904	1.765	172.2	0.000
2.1111	0.906	1.866	187.7	0.000
2.2222	0.909	1.967	203.6	0.000
2.3333	0.911	2.068	220.0	0.000
2.4444	0.914	2.169	236.8	0.000
2.5556	0.916	2.271	254.0	0.000
2.6667	0.918	2.373	271.7	0.000
2.7778	0.921	2.475	289.7	0.000
2.8889	0.923	2.578	308.2	0.000
3.0000	0.926	2.680	327.0	0.000
3.1111	0.928	2.784	346.2	0.000
3.2222	0.930	2.887	365.8	0.000
3.3333	0.933	2.990	385.7	0.000
3.4444	0.935	3.094	405.9	0.000
3.5556	0.937	3.198	426.6	0.000
3.6667	0.940	3.303	447.5	0.000
3.7778	0.942	3.407	468.8	0.000
3.8889	0.945	3.512	490.4	0.000
4.0000	0.947	3.617	512.3	0.000
4.1111	0.949	3.723	534.5	0.000
4.2222	0.952	3.828	557.1	0.000
4.3333	0.954	3.934	579.9	0.000

DRAFT

4.4444	0.957	4.040	603.1	0.000
4.5556	0.959	4.147	626.5	0.000
4.6667	0.961	4.254	650.2	0.000
4.7778	0.964	4.361	674.3	0.000
4.8889	0.966	4.468	698.6	0.000
5.0000	0.969	4.575	723.1	0.000
5.1111	0.971	4.683	748.0	0.000
5.2222	0.973	4.791	773.1	0.000
5.3333	0.976	4.900	798.5	0.000
5.4444	0.978	5.008	824.2	0.000
5.5556	0.981	5.117	850.1	0.000
5.6667	0.983	5.226	876.3	0.000
5.7778	0.985	5.336	902.7	0.000
5.8889	0.988	5.445	929.4	0.000
6.0000	0.990	5.555	956.3	0.000
6.1111	0.993	5.665	983.5	0.000
6.2222	0.995	5.776	1011.	0.000
6.3333	0.997	5.887	1038.	0.000
6.4444	1.000	5.998	1066.	0.000
6.5556	1.002	6.109	1094.	0.000
6.6667	1.004	6.220	1123.	0.000
6.7778	1.007	6.332	1151.	0.000
6.8889	1.009	6.444	1180.	0.000
7.0000	1.012	6.557	1209.	0.000
7.1111	1.014	6.669	1239.	0.000
7.2222	1.016	6.782	1268.	0.000
7.3333	1.019	6.895	1298.	0.000
7.4444	1.021	7.009	1328.	0.000
7.5556	1.024	7.122	1358.	0.000
7.6667	1.026	7.236	1389.	0.000
7.7778	1.028	7.350	1419.	0.000
7.8889	1.031	7.465	1450.	0.000
8.0000	1.033	7.580	1481.	0.000
8.1111	1.036	7.694	1513.	0.000
8.2222	1.038	7.810	1544.	0.000
8.3333	1.040	7.925	1576.	0.000
8.4444	1.043	8.041	1608.	0.000
8.5556	1.045	8.157	1640.	0.000
8.6667	1.048	8.273	1672.	0.000
8.7778	1.050	8.390	1705.	0.000
8.8889	1.052	8.507	1738.	0.000
9.0000	1.055	8.624	1771.	0.000
9.1111	1.057	8.741	1804.	0.000
9.2222	1.060	8.859	1838.	0.000
9.3333	1.062	8.977	1871.	0.000
9.4444	1.064	9.095	1905.	0.000
9.5556	1.067	9.213	1939.	0.000
9.6667	1.069	9.332	1973.	0.000
9.7778	1.071	9.451	2008.	0.000
9.8889	1.074	9.570	2042.	0.000
10.000	1.076	9.690	2077.	0.000
10.111	1.079	9.810	2112.	0.000

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POC 5

Bottom Length: 408.00 ft.
Bottom Width: 22.00 ft.
Manning's n: 0.04
Channel bottom slope 1: 0.0055 To 1
Channel Left side slope 0: 0.25 To 1
Channel right side slope 2: 0.25 To 1
Discharge Structure
Riser Height: 0 ft.
Riser Diameter: 0 in.
Element Flows To:
Outlet 1 Outlet 2
Upstream POC 3/4

Channel Hydraulic Table

Stage(ft)	Area(ac)	Volume(ac-ft)	Discharge(cfs)	Infilt(cfs)
0.0000	0.206	0.000	0.000	0.000
0.1667	0.206	0.034	3.045	0.000
0.3333	0.207	0.068	9.602	0.000
0.5000	0.208	0.103	18.74	0.000
0.6667	0.209	0.138	30.07	0.000
0.8333	0.210	0.173	43.33	0.000
1.0000	0.210	0.208	58.34	0.000
1.1667	0.211	0.243	74.95	0.000
1.3333	0.212	0.278	93.05	0.000
1.5000	0.213	0.314	112.5	0.000
1.6667	0.213	0.349	133.3	0.000
1.8333	0.214	0.385	155.4	0.000
2.0000	0.215	0.421	178.6	0.000
2.1667	0.216	0.457	202.9	0.000
2.3333	0.217	0.493	228.4	0.000
2.5000	0.217	0.529	254.8	0.000
2.6667	0.218	0.566	282.3	0.000
2.8333	0.219	0.602	310.6	0.000
3.0000	0.220	0.639	339.9	0.000
3.1667	0.220	0.676	370.1	0.000
3.3333	0.221	0.712	401.2	0.000
3.5000	0.222	0.749	433.1	0.000
3.6667	0.223	0.787	465.8	0.000
3.8333	0.224	0.824	499.3	0.000
4.0000	0.224	0.861	533.5	0.000
4.1667	0.225	0.899	568.5	0.000
4.3333	0.226	0.937	604.2	0.000
4.5000	0.227	0.974	640.6	0.000
4.6667	0.227	1.012	677.8	0.000
4.8333	0.228	1.050	715.6	0.000
5.0000	0.229	1.088	754.0	0.000
5.1667	0.230	1.127	793.2	0.000
5.3333	0.231	1.165	832.9	0.000
5.5000	0.231	1.204	873.3	0.000
5.6667	0.232	1.243	914.3	0.000
5.8333	0.233	1.281	956.0	0.000
6.0000	0.234	1.320	998.2	0.000
6.1667	0.235	1.359	1041.	0.000
6.3333	0.235	1.399	1084.	0.000
6.5000	0.236	1.438	1128.	0.000

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6.6667	0.237	1.477	1172.	0.000
6.8333	0.238	1.517	1217.	0.000
7.0000	0.238	1.557	1263.	0.000
7.1667	0.239	1.597	1309.	0.000
7.3333	0.240	1.637	1356.	0.000
7.5000	0.241	1.677	1403.	0.000
7.6667	0.242	1.717	1451.	0.000
7.8333	0.242	1.758	1499.	0.000
8.0000	0.243	1.798	1548.	0.000
8.1667	0.244	1.839	1597.	0.000
8.3333	0.245	1.880	1647.	0.000
8.5000	0.245	1.920	1697.	0.000
8.6667	0.246	1.962	1748.	0.000
8.8333	0.247	2.003	1799.	0.000
9.0000	0.248	2.044	1851.	0.000
9.1667	0.249	2.085	1903.	0.000
9.3333	0.249	2.127	1956.	0.000
9.5000	0.250	2.169	2009.	0.000
9.6667	0.251	2.211	2063.	0.000
9.8333	0.252	2.253	2117.	0.000
10.000	0.253	2.295	2172.	0.000
10.167	0.253	2.337	2227.	0.000
10.333	0.254	2.379	2282.	0.000
10.500	0.255	2.422	2338.	0.000
10.667	0.256	2.464	2394.	0.000
10.833	0.256	2.507	2451.	0.000
11.000	0.257	2.550	2509.	0.000
11.167	0.258	2.593	2566.	0.000
11.333	0.259	2.636	2625.	0.000
11.500	0.260	2.679	2683.	0.000
11.667	0.260	2.723	2742.	0.000
11.833	0.261	2.766	2802.	0.000
12.000	0.262	2.810	2862.	0.000
12.167	0.263	2.854	2922.	0.000
12.333	0.263	2.898	2983.	0.000
12.500	0.264	2.942	3044.	0.000
12.667	0.265	2.986	3106.	0.000
12.833	0.266	3.030	3168.	0.000
13.000	0.267	3.075	3231.	0.000
13.167	0.267	3.119	3294.	0.000
13.333	0.268	3.164	3357.	0.000
13.500	0.269	3.209	3421.	0.000
13.667	0.270	3.254	3485.	0.000
13.833	0.270	3.299	3550.	0.000
14.000	0.271	3.344	3615.	0.000
14.167	0.272	3.389	3680.	0.000
14.333	0.273	3.435	3746.	0.000
14.500	0.274	3.480	3813.	0.000
14.667	0.274	3.526	3879.	0.000
14.833	0.275	3.572	3947.	0.000
15.000	0.276	3.618	4014.	0.000
15.167	0.277	3.664	4082.	0.000

DRAFT

Urban 2

Bottom Length: 585.00 ft.
Bottom Width: 8.00 ft.
Manning's n: 0.04
Channel bottom slope 1: 0.0137 To 1
Channel Left side slope 0: 0.5 To 1
Channel right side slope 2: 0.5 To 1
Discharge Structure
Riser Height: 0 ft.
Riser Diameter: 0 in.
Element Flows To:
Outlet 1 Outlet 2
POC 5

Channel Hydraulic Table

Stage(ft)	Area(ac)	Volume(ac-ft)	Discharge(cfs)	Infilt(cfs)
0.0000	0.107	0.000	0.000	0.000
0.1111	0.108	0.012	0.887	0.000
0.2222	0.110	0.024	2.795	0.000
0.3333	0.111	0.036	5.451	0.000
0.4444	0.113	0.049	8.740	0.000
0.5556	0.114	0.061	12.59	0.000
0.6667	0.116	0.074	16.95	0.000
0.7778	0.117	0.087	21.78	0.000
0.8889	0.119	0.100	27.05	0.000
1.0000	0.120	0.114	32.74	0.000
1.1111	0.122	0.127	38.82	0.000
1.2222	0.123	0.141	45.29	0.000
1.3333	0.125	0.155	52.12	0.000
1.4444	0.126	0.169	59.30	0.000
1.5556	0.128	0.183	66.83	0.000
1.6667	0.129	0.197	74.70	0.000
1.7778	0.131	0.212	82.89	0.000
1.8889	0.132	0.226	91.40	0.000
2.0000	0.134	0.241	100.2	0.000
2.1111	0.135	0.256	109.3	0.000
2.2222	0.137	0.271	118.8	0.000
2.3333	0.138	0.287	128.5	0.000
2.4444	0.140	0.302	138.5	0.000
2.5556	0.141	0.318	148.9	0.000
2.6667	0.143	0.334	159.5	0.000
2.7778	0.144	0.350	170.4	0.000
2.8889	0.146	0.366	181.6	0.000
3.0000	0.147	0.382	193.1	0.000
3.1111	0.149	0.399	204.9	0.000
3.2222	0.150	0.415	216.9	0.000
3.3333	0.152	0.432	229.2	0.000
3.4444	0.153	0.449	241.9	0.000
3.5556	0.155	0.466	254.8	0.000
3.6667	0.156	0.484	267.9	0.000
3.7778	0.158	0.501	281.4	0.000
3.8889	0.159	0.519	295.1	0.000
4.0000	0.161	0.537	309.2	0.000
4.1111	0.162	0.555	323.4	0.000
4.2222	0.164	0.573	338.0	0.000
4.3333	0.165	0.591	352.9	0.000

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4.4444	0.167	0.610	368.0	0.000
4.5556	0.168	0.628	383.4	0.000
4.6667	0.170	0.647	399.1	0.000
4.7778	0.171	0.666	415.1	0.000
4.8889	0.173	0.685	431.3	0.000
5.0000	0.174	0.705	447.9	0.000
5.1111	0.176	0.724	464.7	0.000
5.2222	0.177	0.744	481.8	0.000
5.3333	0.179	0.764	499.1	0.000
5.4444	0.180	0.784	516.8	0.000
5.5556	0.182	0.804	534.7	0.000
5.6667	0.183	0.824	553.0	0.000
5.7778	0.185	0.845	571.5	0.000
5.8889	0.186	0.865	590.3	0.000
6.0000	0.188	0.886	609.3	0.000
6.1111	0.189	0.907	628.7	0.000
6.2222	0.191	0.928	648.4	0.000
6.3333	0.192	0.949	668.3	0.000
6.4444	0.194	0.971	688.5	0.000
6.5556	0.195	0.993	709.1	0.000
6.6667	0.197	1.014	729.9	0.000
6.7778	0.198	1.036	751.0	0.000
6.8889	0.200	1.059	772.4	0.000
7.0000	0.201	1.081	794.1	0.000
7.1111	0.203	1.103	816.1	0.000
7.2222	0.204	1.126	838.4	0.000
7.3333	0.206	1.149	860.9	0.000
7.4444	0.207	1.172	883.8	0.000
7.5556	0.209	1.195	907.0	0.000
7.6667	0.210	1.218	930.5	0.000
7.7778	0.212	1.242	954.3	0.000
7.8889	0.213	1.265	978.3	0.000
8.0000	0.215	1.289	1002.	0.000
8.1111	0.216	1.313	1027.	0.000
8.2222	0.217	1.337	1052.	0.000
8.3333	0.219	1.361	1077.	0.000
8.4444	0.220	1.386	1103.	0.000
8.5556	0.222	1.411	1129.	0.000
8.6667	0.223	1.435	1155.	0.000
8.7778	0.225	1.460	1182.	0.000
8.8889	0.226	1.485	1208.	0.000
9.0000	0.228	1.511	1235.	0.000
9.1111	0.229	1.536	1263.	0.000
9.2222	0.231	1.562	1291.	0.000
9.3333	0.232	1.588	1319.	0.000
9.4444	0.234	1.614	1347.	0.000
9.5556	0.235	1.640	1376.	0.000
9.6667	0.237	1.666	1405.	0.000
9.7778	0.238	1.692	1434.	0.000
9.8889	0.240	1.719	1464.	0.000
10.000	0.241	1.746	1494.	0.000
10.111	0.243	1.773	1524.	0.000

DRAFT

Channel 12

Bottom Length: 3016.00 ft.
Bottom Width: 5.00 ft.
Manning's n: 0.035
Channel bottom slope 1: 0.0146 To 1
Channel Left side slope 0: 0.5 To 1
Channel right side slope 2: 0.5 To 1
Discharge Structure
Riser Height: 0 ft.
Riser Diameter: 0 in.
Element Flows To:
Outlet 1 Outlet 2
Upstream POC 3/4

Channel Hydraulic Table

Stage(ft)	Area(ac)	Volume(ac-ft)	Discharge(cfs)	Infilt(cfs)
0.0000	0.346	0.000	0.000	0.000
0.0889	0.352	0.031	0.450	0.000
0.1778	0.358	0.062	1.414	0.000
0.2667	0.364	0.094	2.754	0.000
0.3556	0.370	0.127	4.409	0.000
0.4444	0.377	0.160	6.342	0.000
0.5333	0.383	0.194	8.529	0.000
0.6222	0.389	0.228	10.95	0.000
0.7111	0.395	0.263	13.59	0.000
0.8000	0.401	0.299	16.44	0.000
0.8889	0.407	0.335	19.48	0.000
0.9778	0.413	0.371	22.72	0.000
1.0667	0.420	0.408	26.14	0.000
1.1556	0.426	0.446	29.74	0.000
1.2444	0.432	0.484	33.52	0.000
1.3333	0.438	0.523	37.47	0.000
1.4222	0.444	0.562	41.58	0.000
1.5111	0.450	0.602	45.86	0.000
1.6000	0.457	0.642	50.30	0.000
1.6889	0.463	0.683	54.91	0.000
1.7778	0.469	0.724	59.67	0.000
1.8667	0.475	0.766	64.59	0.000
1.9556	0.481	0.809	69.67	0.000
2.0444	0.487	0.852	74.90	0.000
2.1333	0.493	0.896	80.29	0.000
2.2222	0.500	0.940	85.84	0.000
2.3111	0.506	0.985	91.54	0.000
2.4000	0.512	1.030	97.39	0.000
2.4889	0.518	1.076	103.4	0.000
2.5778	0.524	1.122	109.5	0.000
2.6667	0.530	1.169	115.8	0.000
2.7556	0.537	1.216	122.3	0.000
2.8444	0.543	1.264	128.9	0.000
2.9333	0.549	1.313	135.7	0.000
3.0222	0.555	1.362	142.6	0.000
3.1111	0.561	1.412	149.7	0.000
3.2000	0.567	1.462	157.0	0.000
3.2889	0.573	1.513	164.4	0.000
3.3778	0.580	1.564	171.9	0.000
3.4667	0.586	1.616	179.6	0.000

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3.5556	0.592	1.668	187.5	0.000
3.6444	0.598	1.721	195.5	0.000
3.7333	0.604	1.775	203.7	0.000
3.8222	0.610	1.829	212.0	0.000
3.9111	0.617	1.883	220.5	0.000
4.0000	0.623	1.938	229.2	0.000
4.0889	0.629	1.994	238.0	0.000
4.1778	0.635	2.050	247.0	0.000
4.2667	0.641	2.107	256.1	0.000
4.3556	0.647	2.164	265.4	0.000
4.4444	0.653	2.222	274.9	0.000
4.5333	0.660	2.280	284.5	0.000
4.6222	0.666	2.339	294.3	0.000
4.7111	0.672	2.399	304.3	0.000
4.8000	0.678	2.459	314.4	0.000
4.8889	0.684	2.520	324.7	0.000
4.9778	0.690	2.581	335.1	0.000
5.0667	0.697	2.642	345.8	0.000
5.1556	0.703	2.705	356.5	0.000
5.2444	0.709	2.767	367.5	0.000
5.3333	0.715	2.831	378.6	0.000
5.4222	0.721	2.895	389.9	0.000
5.5111	0.727	2.959	401.4	0.000
5.6000	0.734	3.024	413.0	0.000
5.6889	0.740	3.089	424.9	0.000
5.7778	0.746	3.156	436.8	0.000
5.8667	0.752	3.222	449.0	0.000
5.9556	0.758	3.289	461.3	0.000
6.0444	0.764	3.357	473.9	0.000
6.1333	0.770	3.425	486.5	0.000
6.2222	0.777	3.494	499.4	0.000
6.3111	0.783	3.563	512.4	0.000
6.4000	0.789	3.633	525.7	0.000
6.4889	0.795	3.704	539.1	0.000
6.5778	0.801	3.775	552.7	0.000
6.6667	0.807	3.846	566.4	0.000
6.7556	0.814	3.918	580.4	0.000
6.8444	0.820	3.991	594.5	0.000
6.9333	0.826	4.064	608.8	0.000
7.0222	0.832	4.138	623.3	0.000
7.1111	0.838	4.212	638.0	0.000
7.2000	0.844	4.287	652.8	0.000
7.2889	0.850	4.362	667.9	0.000
7.3778	0.857	4.438	683.1	0.000
7.4667	0.863	4.515	698.5	0.000
7.5556	0.869	4.592	714.2	0.000
7.6444	0.875	4.669	730.0	0.000
7.7333	0.881	4.747	746.0	0.000
7.8222	0.887	4.826	762.1	0.000
7.9111	0.894	4.905	778.5	0.000
8.0000	0.900	4.985	795.1	0.000
8.0889	0.906	5.065	811.8	0.000

DRAFT

Upstream POC 3/4

Bottom Length: 1443.00 ft.
Bottom Width: 22.00 ft.
Manning's n: 0.04
Channel bottom slope 1: 0.0055 To 1
Channel Left side slope 0: 0.25 To 1
Channel right side slope 2: 0.25 To 1
Discharge Structure
Riser Height: 0 ft.
Riser Diameter: 0 in.
Element Flows To:
Outlet 1 Outlet 2
POC 3/4

Channel Hydraulic Table

Stage(ft)	Area(ac)	Volume(ac-ft)	Discharge(cfs)	Infilt(cfs)
0.0000	0.728	0.000	0.000	0.000
0.1667	0.731	0.121	3.045	0.000
0.3333	0.734	0.243	9.602	0.000
0.5000	0.737	0.366	18.74	0.000
0.6667	0.739	0.489	30.07	0.000
0.8333	0.742	0.613	43.33	0.000
1.0000	0.745	0.737	58.34	0.000
1.1667	0.748	0.861	74.95	0.000
1.3333	0.750	0.986	93.05	0.000
1.5000	0.753	1.111	112.5	0.000
1.6667	0.756	1.237	133.3	0.000
1.8333	0.759	1.364	155.4	0.000
2.0000	0.761	1.490	178.6	0.000
2.1667	0.764	1.617	202.9	0.000
2.3333	0.767	1.745	228.4	0.000
2.5000	0.770	1.873	254.8	0.000
2.6667	0.773	2.002	282.3	0.000
2.8333	0.775	2.131	310.6	0.000
3.0000	0.778	2.260	339.9	0.000
3.1667	0.781	2.390	370.1	0.000
3.3333	0.784	2.521	401.2	0.000
3.5000	0.786	2.652	433.1	0.000
3.6667	0.789	2.783	465.8	0.000
3.8333	0.792	2.915	499.3	0.000
4.0000	0.795	3.047	533.5	0.000
4.1667	0.797	3.180	568.5	0.000
4.3333	0.800	3.313	604.2	0.000
4.5000	0.803	3.447	640.6	0.000
4.6667	0.806	3.581	677.8	0.000
4.8333	0.808	3.716	715.6	0.000
5.0000	0.811	3.851	754.0	0.000
5.1667	0.814	3.986	793.2	0.000
5.3333	0.817	4.122	832.9	0.000
5.5000	0.819	4.258	873.3	0.000
5.6667	0.822	4.395	914.3	0.000
5.8333	0.825	4.533	956.0	0.000
6.0000	0.828	4.671	998.2	0.000
6.1667	0.831	4.809	1041.	0.000
6.3333	0.833	4.948	1084.	0.000
6.5000	0.836	5.087	1128.	0.000

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6.6667	0.839	5.226	1172.	0.000
6.8333	0.842	5.366	1217.	0.000
7.0000	0.844	5.507	1263.	0.000
7.1667	0.847	5.648	1309.	0.000
7.3333	0.850	5.790	1356.	0.000
7.5000	0.853	5.931	1403.	0.000
7.6667	0.855	6.074	1451.	0.000
7.8333	0.858	6.217	1499.	0.000
8.0000	0.861	6.360	1548.	0.000
8.1667	0.864	6.504	1597.	0.000
8.3333	0.866	6.648	1647.	0.000
8.5000	0.869	6.793	1697.	0.000
8.6667	0.872	6.938	1748.	0.000
8.8333	0.875	7.084	1799.	0.000
9.0000	0.877	7.230	1851.	0.000
9.1667	0.880	7.376	1903.	0.000
9.3333	0.883	7.523	1956.	0.000
9.5000	0.886	7.671	2009.	0.000
9.6667	0.889	7.819	2063.	0.000
9.8333	0.891	7.967	2117.	0.000
10.000	0.894	8.116	2172.	0.000
10.167	0.897	8.265	2227.	0.000
10.333	0.900	8.415	2282.	0.000
10.500	0.902	8.565	2338.	0.000
10.667	0.905	8.716	2394.	0.000
10.833	0.908	8.867	2451.	0.000
11.000	0.911	9.019	2509.	0.000
11.167	0.913	9.171	2566.	0.000
11.333	0.916	9.323	2625.	0.000
11.500	0.919	9.476	2683.	0.000
11.667	0.922	9.630	2742.	0.000
11.833	0.924	9.784	2802.	0.000
12.000	0.927	9.938	2862.	0.000
12.167	0.930	10.09	2922.	0.000
12.333	0.933	10.24	2983.	0.000
12.500	0.935	10.40	3044.	0.000
12.667	0.938	10.56	3106.	0.000
12.833	0.941	10.71	3168.	0.000
13.000	0.944	10.87	3231.	0.000
13.167	0.947	11.03	3294.	0.000
13.333	0.949	11.19	3357.	0.000
13.500	0.952	11.34	3421.	0.000
13.667	0.955	11.50	3485.	0.000
13.833	0.958	11.66	3550.	0.000
14.000	0.960	11.82	3615.	0.000
14.167	0.963	11.98	3680.	0.000
14.333	0.966	12.14	3746.	0.000
14.500	0.969	12.30	3813.	0.000
14.667	0.971	12.47	3879.	0.000
14.833	0.974	12.63	3947.	0.000
15.000	0.977	12.79	4014.	0.000
15.167	0.980	12.95	4082.	0.000

DRAFT

POC 11

Bottom Length: 1435.00 ft.
Bottom Width: 4.00 ft.
Manning's n: 0.035
Channel bottom slope 1: 0.0223 To 1
Channel Left side slope 0: 0.5 To 1
Channel right side slope 2: 0.5 To 1
Discharge Structure
Riser Height: 0 ft.
Riser Diameter: 0 in.
Element Flows To:
Outlet 1 Outlet 2
SF POC 3/4

Channel Hydraulic Table

Stage(ft)	Area(ac)	Volume(ac-ft)	Discharge(cfs)	Infilt(cfs)
0.0000	0.131	0.000	0.000	0.000
0.0889	0.134	0.011	0.444	0.000
0.1778	0.137	0.023	1.391	0.000
0.2667	0.140	0.036	2.704	0.000
0.3556	0.143	0.048	4.323	0.000
0.4444	0.146	0.061	6.212	0.000
0.5333	0.149	0.075	8.346	0.000
0.6222	0.152	0.088	10.70	0.000
0.7111	0.155	0.102	13.28	0.000
0.8000	0.158	0.116	16.06	0.000
0.8889	0.161	0.130	19.03	0.000
0.9778	0.164	0.144	22.19	0.000
1.0667	0.166	0.159	25.54	0.000
1.1556	0.169	0.174	29.06	0.000
1.2444	0.172	0.189	32.76	0.000
1.3333	0.175	0.205	36.63	0.000
1.4222	0.178	0.220	40.67	0.000
1.5111	0.181	0.236	44.88	0.000
1.6000	0.184	0.253	49.26	0.000
1.6889	0.187	0.269	53.80	0.000
1.7778	0.190	0.286	58.51	0.000
1.8667	0.193	0.303	63.38	0.000
1.9556	0.196	0.320	68.42	0.000
2.0444	0.199	0.338	73.62	0.000
2.1333	0.202	0.356	78.98	0.000
2.2222	0.205	0.374	84.51	0.000
2.3111	0.207	0.392	90.21	0.000
2.4000	0.210	0.411	96.06	0.000
2.4889	0.213	0.430	102.0	0.000
2.5778	0.216	0.449	108.2	0.000
2.6667	0.219	0.468	114.6	0.000
2.7556	0.222	0.488	121.1	0.000
2.8444	0.225	0.508	127.8	0.000
2.9333	0.228	0.528	134.6	0.000
3.0222	0.231	0.548	141.7	0.000
3.1111	0.234	0.569	148.9	0.000
3.2000	0.237	0.590	156.2	0.000
3.2889	0.240	0.611	163.7	0.000
3.3778	0.243	0.633	171.4	0.000
3.4667	0.246	0.654	179.3	0.000

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3.5556	0.248	0.676	187.4	0.000
3.6444	0.251	0.699	195.6	0.000
3.7333	0.254	0.721	204.0	0.000
3.8222	0.257	0.744	212.6	0.000
3.9111	0.260	0.767	221.3	0.000
4.0000	0.263	0.790	230.2	0.000
4.0889	0.266	0.814	239.3	0.000
4.1778	0.269	0.838	248.6	0.000
4.2667	0.272	0.862	258.1	0.000
4.3556	0.275	0.886	267.7	0.000
4.4444	0.278	0.911	277.5	0.000
4.5333	0.281	0.935	287.6	0.000
4.6222	0.284	0.961	297.8	0.000
4.7111	0.287	0.986	308.1	0.000
4.8000	0.289	1.012	318.7	0.000
4.8889	0.292	1.038	329.5	0.000
4.9778	0.295	1.064	340.4	0.000
5.0667	0.298	1.090	351.5	0.000
5.1556	0.301	1.117	362.9	0.000
5.2444	0.304	1.144	374.4	0.000
5.3333	0.307	1.171	386.1	0.000
5.4222	0.310	1.198	398.0	0.000
5.5111	0.313	1.226	410.1	0.000
5.6000	0.316	1.254	422.4	0.000
5.6889	0.319	1.282	434.8	0.000
5.7778	0.322	1.311	447.5	0.000
5.8667	0.325	1.340	460.4	0.000
5.9556	0.328	1.369	473.5	0.000
6.0444	0.331	1.398	486.8	0.000
6.1333	0.333	1.428	500.3	0.000
6.2222	0.336	1.457	513.9	0.000
6.3111	0.339	1.487	527.8	0.000
6.4000	0.342	1.518	541.9	0.000
6.4889	0.345	1.548	556.2	0.000
6.5778	0.348	1.579	570.8	0.000
6.6667	0.351	1.610	585.5	0.000
6.7556	0.354	1.642	600.4	0.000
6.8444	0.357	1.673	615.5	0.000
6.9333	0.360	1.705	630.9	0.000
7.0222	0.363	1.737	646.4	0.000
7.1111	0.366	1.770	662.2	0.000
7.2000	0.369	1.802	678.2	0.000
7.2889	0.372	1.835	694.4	0.000
7.3778	0.374	1.869	710.8	0.000
7.4667	0.377	1.902	727.5	0.000
7.5556	0.380	1.936	744.3	0.000
7.6444	0.383	1.970	761.4	0.000
7.7333	0.386	2.004	778.7	0.000
7.8222	0.389	2.038	796.2	0.000
7.9111	0.392	2.073	813.9	0.000
8.0000	0.395	2.108	831.9	0.000
8.0889	0.398	2.143	850.1	0.000

DRAFT

SF POC 3/4

Bottom Length: 749.00 ft.
Bottom Width: 4.00 ft.
Manning's n: 0.035
Channel bottom slope 1: 0.0214 To 1
Channel Left side slope 0: 0.5 To 1
Channel right side slope 2: 0.5 To 1
Discharge Structure
Riser Height: 0 ft.
Riser Diameter: 0 in.
Element Flows To:
Outlet 1 Outlet 2
POC 3/4

Channel Hydraulic Table

Stage(ft)	Area(ac)	Volume(ac-ft)	Discharge(cfs)	Infilt(cfs)
0.0000	0.068	0.000	0.000	0.000
0.0889	0.070	0.006	0.434	0.000
0.1778	0.071	0.012	1.363	0.000
0.2667	0.073	0.019	2.649	0.000
0.3556	0.074	0.025	4.235	0.000
0.4444	0.076	0.032	6.085	0.000
0.5333	0.078	0.039	8.176	0.000
0.6222	0.079	0.046	10.48	0.000
0.7111	0.081	0.053	13.01	0.000
0.8000	0.082	0.060	15.73	0.000
0.8889	0.084	0.067	18.64	0.000
0.9778	0.085	0.075	21.74	0.000
1.0667	0.087	0.083	25.02	0.000
1.1556	0.088	0.091	28.47	0.000
1.2444	0.090	0.098	32.09	0.000
1.3333	0.091	0.107	35.88	0.000
1.4222	0.093	0.115	39.84	0.000
1.5111	0.094	0.123	43.97	0.000
1.6000	0.096	0.132	48.25	0.000
1.6889	0.097	0.140	52.70	0.000
1.7778	0.099	0.149	57.32	0.000
1.8667	0.100	0.158	62.09	0.000
1.9556	0.102	0.167	67.02	0.000
2.0444	0.103	0.176	72.12	0.000
2.1333	0.105	0.185	77.37	0.000
2.2222	0.107	0.195	82.79	0.000
2.3111	0.108	0.204	88.37	0.000
2.4000	0.110	0.214	94.10	0.000
2.4889	0.111	0.224	100.0	0.000
2.5778	0.113	0.234	106.0	0.000
2.6667	0.114	0.244	112.2	0.000
2.7556	0.116	0.254	118.6	0.000
2.8444	0.117	0.265	125.2	0.000
2.9333	0.119	0.275	131.9	0.000
3.0222	0.120	0.286	138.8	0.000
3.1111	0.122	0.297	145.8	0.000
3.2000	0.123	0.308	153.0	0.000
3.2889	0.125	0.319	160.4	0.000
3.3778	0.126	0.330	167.9	0.000
3.4667	0.128	0.341	175.7	0.000

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3.5556	0.129	0.353	183.5	0.000
3.6444	0.131	0.364	191.6	0.000
3.7333	0.133	0.376	199.8	0.000
3.8222	0.134	0.388	208.2	0.000
3.9111	0.136	0.400	216.8	0.000
4.0000	0.137	0.412	225.5	0.000
4.0889	0.139	0.425	234.4	0.000
4.1778	0.140	0.437	243.5	0.000
4.2667	0.142	0.450	252.8	0.000
4.3556	0.143	0.462	262.3	0.000
4.4444	0.145	0.475	271.9	0.000
4.5333	0.146	0.488	281.7	0.000
4.6222	0.148	0.501	291.7	0.000
4.7111	0.149	0.514	301.8	0.000
4.8000	0.151	0.528	312.2	0.000
4.8889	0.152	0.541	322.7	0.000
4.9778	0.154	0.555	333.5	0.000
5.0667	0.155	0.569	344.4	0.000
5.1556	0.157	0.583	355.5	0.000
5.2444	0.159	0.597	366.7	0.000
5.3333	0.160	0.611	378.2	0.000
5.4222	0.162	0.625	389.9	0.000
5.5111	0.163	0.640	401.7	0.000
5.6000	0.165	0.654	413.7	0.000
5.6889	0.166	0.669	426.0	0.000
5.7778	0.168	0.684	438.4	0.000
5.8667	0.169	0.699	451.0	0.000
5.9556	0.171	0.714	463.8	0.000
6.0444	0.172	0.730	476.9	0.000
6.1333	0.174	0.745	490.1	0.000
6.2222	0.175	0.761	503.5	0.000
6.3111	0.177	0.776	517.1	0.000
6.4000	0.178	0.792	530.9	0.000
6.4889	0.180	0.808	544.9	0.000
6.5778	0.181	0.824	559.1	0.000
6.6667	0.183	0.840	573.5	0.000
6.7556	0.185	0.857	588.2	0.000
6.8444	0.186	0.873	603.0	0.000
6.9333	0.188	0.890	618.0	0.000
7.0222	0.189	0.907	633.3	0.000
7.1111	0.191	0.924	648.7	0.000
7.2000	0.192	0.941	664.4	0.000
7.2889	0.194	0.958	680.2	0.000
7.3778	0.195	0.975	696.3	0.000
7.4667	0.197	0.993	712.6	0.000
7.5556	0.198	1.010	729.1	0.000
7.6444	0.200	1.028	745.9	0.000
7.7333	0.201	1.046	762.8	0.000
7.8222	0.203	1.064	780.0	0.000
7.9111	0.204	1.082	797.3	0.000
8.0000	0.206	1.100	814.9	0.000
8.0889	0.208	1.119	832.8	0.000

DRAFT

POC 3/4

Bottom Length: 244.00 ft.
Bottom Width: 22.00 ft.
Manning's n: 0.04
Channel bottom slope 1: 0.001 To 1
Channel Left side slope 0: 0.25 To 1
Channel right side slope 2: 0.25 To 1
Discharge Structure
Riser Height: 0 ft.
Riser Diameter: 0 in.
Element Flows To:
Outlet 1 Outlet 2
Upstream POC 2

Channel Hydraulic Table

Stage(ft)	Area(ac)	Volume(ac-ft)	Discharge(cfs)	Infilt(cfs)
0.0000	0.123	0.000	0.000	0.000
0.3333	0.124	0.041	5.459	0.000
0.6667	0.125	0.082	17.09	0.000
1.0000	0.126	0.124	33.16	0.000
1.3333	0.127	0.166	52.90	0.000
1.6667	0.127	0.209	75.82	0.000
2.0000	0.128	0.252	101.5	0.000
2.3333	0.129	0.295	129.8	0.000
2.6667	0.130	0.338	160.5	0.000
3.0000	0.131	0.382	193.3	0.000
3.3333	0.132	0.426	228.1	0.000
3.6667	0.133	0.470	264.8	0.000
4.0000	0.134	0.515	303.3	0.000
4.3333	0.135	0.560	343.5	0.000
4.6667	0.136	0.605	385.3	0.000
5.0000	0.137	0.651	428.7	0.000
5.3333	0.138	0.697	473.5	0.000
5.6667	0.139	0.743	519.8	0.000
6.0000	0.140	0.789	567.5	0.000
6.3333	0.141	0.836	616.5	0.000
6.6667	0.141	0.883	666.8	0.000
7.0000	0.142	0.931	718.3	0.000
7.3333	0.143	0.979	771.1	0.000
7.6667	0.144	1.027	825.1	0.000
8.0000	0.145	1.075	880.3	0.000
8.3333	0.146	1.124	936.6	0.000
8.6667	0.147	1.173	994.1	0.000
9.0000	0.148	1.222	1052.	0.000
9.3333	0.149	1.272	1112.	0.000
9.6667	0.150	1.322	1173.	0.000
10.000	0.151	1.372	1234.	0.000
10.333	0.152	1.423	1297.	0.000
10.667	0.153	1.473	1361.	0.000
11.000	0.154	1.525	1426.	0.000
11.333	0.155	1.576	1492.	0.000
11.667	0.155	1.628	1559.	0.000
12.000	0.156	1.680	1627.	0.000
12.333	0.157	1.733	1696.	0.000
12.667	0.158	1.785	1766.	0.000
13.000	0.159	1.838	1837.	0.000

DRAFT

13.333	0.160	1.892	1908.	0.000
13.667	0.161	1.945	1981.	0.000
14.000	0.162	1.999	2055.	0.000
14.333	0.163	2.054	2130.	0.000
14.667	0.164	2.108	2205.	0.000
15.000	0.165	2.163	2282.	0.000
15.333	0.166	2.219	2360.	0.000
15.667	0.167	2.274	2438.	0.000
16.000	0.168	2.330	2518.	0.000
16.333	0.169	2.386	2598.	0.000
16.667	0.169	2.443	2679.	0.000
17.000	0.170	2.499	2761.	0.000
17.333	0.171	2.557	2845.	0.000
17.667	0.172	2.614	2929.	0.000
18.000	0.173	2.672	3014.	0.000
18.333	0.174	2.730	3100.	0.000
18.667	0.175	2.788	3186.	0.000
19.000	0.176	2.847	3274.	0.000
19.333	0.177	2.906	3363.	0.000
19.667	0.178	2.965	3452.	0.000
20.000	0.179	3.025	3543.	0.000
20.333	0.180	3.085	3634.	0.000
20.667	0.181	3.145	3727.	0.000
21.000	0.182	3.205	3820.	0.000
21.333	0.183	3.266	3914.	0.000
21.667	0.183	3.327	4009.	0.000
22.000	0.184	3.389	4105.	0.000
22.333	0.185	3.451	4202.	0.000
22.667	0.186	3.513	4300.	0.000
23.000	0.187	3.575	4399.	0.000
23.333	0.188	3.638	4499.	0.000
23.667	0.189	3.701	4599.	0.000
24.000	0.190	3.764	4701.	0.000
24.333	0.191	3.828	4803.	0.000
24.667	0.192	3.892	4907.	0.000
25.000	0.193	3.956	5011.	0.000
25.333	0.194	4.021	5116.	0.000
25.667	0.195	4.086	5223.	0.000
26.000	0.196	4.151	5330.	0.000
26.333	0.197	4.216	5438.	0.000
26.667	0.198	4.282	5547.	0.000
27.000	0.198	4.348	5657.	0.000
27.333	0.199	4.415	5767.	0.000
27.667	0.200	4.481	5879.	0.000
28.000	0.201	4.549	5992.	0.000
28.333	0.202	4.616	6106.	0.000
28.667	0.203	4.684	6220.	0.000
29.000	0.204	4.752	6336.	0.000
29.333	0.205	4.820	6452.	0.000
29.667	0.206	4.889	6569.	0.000
30.000	0.207	4.958	6688.	0.000
30.333	0.208	5.027	6807.	0.000

DRAFT

Urban 3

Bottom Length: 1223.00 ft.
Bottom Width: 6.00 ft.
Manning's n: 0.03
Channel bottom slope 1: 0.0163 To 1
Channel Left side slope 0: 0.5 To 1
Channel right side slope 2: 0.5 To 1
Discharge Structure
Riser Height: 0 ft.
Riser Diameter: 0 in.
Element Flows To:
Outlet 1 Outlet 2
POC 3/4

Channel Hydraulic Table

Stage(ft)	Area(ac)	Volume(ac-ft)	Discharge(cfs)	Infilt(cfs)
0.0000	0.168	0.000	0.000	0.000
0.0889	0.171	0.015	0.667	0.000
0.1778	0.173	0.030	2.099	0.000
0.2667	0.175	0.045	4.093	0.000
0.3556	0.178	0.061	6.560	0.000
0.4444	0.180	0.077	9.446	0.000
0.5333	0.183	0.093	12.71	0.000
0.6222	0.185	0.110	16.33	0.000
0.7111	0.188	0.126	20.28	0.000
0.8000	0.190	0.143	24.54	0.000
0.8889	0.193	0.160	29.10	0.000
0.9778	0.195	0.178	33.94	0.000
1.0667	0.198	0.195	39.06	0.000
1.1556	0.200	0.213	44.44	0.000
1.2444	0.203	0.231	50.08	0.000
1.3333	0.205	0.249	55.97	0.000
1.4222	0.208	0.268	62.11	0.000
1.5111	0.210	0.286	68.49	0.000
1.6000	0.213	0.305	75.11	0.000
1.6889	0.215	0.324	81.96	0.000
1.7778	0.218	0.343	89.04	0.000
1.8667	0.220	0.363	96.34	0.000
1.9556	0.223	0.383	103.8	0.000
2.0444	0.225	0.403	111.6	0.000
2.1333	0.228	0.423	119.6	0.000
2.2222	0.230	0.443	127.8	0.000
2.3111	0.233	0.464	136.2	0.000
2.4000	0.235	0.485	144.8	0.000
2.4889	0.238	0.506	153.7	0.000
2.5778	0.240	0.527	162.7	0.000
2.6667	0.243	0.549	172.0	0.000
2.7556	0.245	0.570	181.5	0.000
2.8444	0.248	0.592	191.2	0.000
2.9333	0.250	0.615	201.2	0.000
3.0222	0.253	0.637	211.3	0.000
3.1111	0.255	0.660	221.7	0.000
3.2000	0.258	0.682	232.2	0.000
3.2889	0.260	0.705	243.0	0.000
3.3778	0.263	0.729	254.0	0.000
3.4667	0.265	0.752	265.2	0.000

DRAFT

3.5556	0.268	0.776	276.7	0.000
3.6444	0.270	0.800	288.3	0.000
3.7333	0.273	0.824	300.2	0.000
3.8222	0.275	0.849	312.3	0.000
3.9111	0.278	0.873	324.5	0.000
4.0000	0.280	0.898	337.1	0.000
4.0889	0.283	0.923	349.8	0.000
4.1778	0.285	0.948	362.7	0.000
4.2667	0.288	0.974	375.9	0.000
4.3556	0.290	1.000	389.3	0.000
4.4444	0.293	1.026	402.9	0.000
4.5333	0.295	1.052	416.7	0.000
4.6222	0.298	1.078	430.7	0.000
4.7111	0.300	1.105	445.0	0.000
4.8000	0.303	1.132	459.5	0.000
4.8889	0.305	1.159	474.2	0.000
4.9778	0.308	1.186	489.1	0.000
5.0667	0.310	1.214	504.3	0.000
5.1556	0.313	1.241	519.7	0.000
5.2444	0.315	1.269	535.3	0.000
5.3333	0.318	1.297	551.1	0.000
5.4222	0.320	1.326	567.2	0.000
5.5111	0.323	1.354	583.4	0.000
5.6000	0.325	1.383	600.0	0.000
5.6889	0.328	1.412	616.7	0.000
5.7778	0.330	1.442	633.7	0.000
5.8667	0.333	1.471	650.9	0.000
5.9556	0.335	1.501	668.3	0.000
6.0444	0.338	1.531	686.0	0.000
6.1333	0.340	1.561	703.9	0.000
6.2222	0.343	1.591	722.0	0.000
6.3111	0.345	1.622	740.4	0.000
6.4000	0.348	1.653	759.0	0.000
6.4889	0.350	1.684	777.9	0.000
6.5778	0.353	1.715	797.0	0.000
6.6667	0.355	1.747	816.3	0.000
6.7556	0.358	1.778	835.9	0.000
6.8444	0.360	1.810	855.7	0.000
6.9333	0.363	1.843	875.7	0.000
7.0222	0.365	1.875	896.0	0.000
7.1111	0.368	1.908	916.5	0.000
7.2000	0.370	1.940	937.3	0.000
7.2889	0.373	1.973	958.3	0.000
7.3778	0.375	2.007	979.6	0.000
7.4667	0.378	2.040	1001.	0.000
7.5556	0.380	2.074	1022.	0.000
7.6444	0.383	2.108	1044.	0.000
7.7333	0.385	2.142	1067.	0.000
7.8222	0.388	2.176	1089.	0.000
7.9111	0.390	2.211	1112.	0.000
8.0000	0.393	2.246	1135.	0.000
8.0889	0.395	2.281	1158.	0.000

DRAFT

Upstream POC 2

Bottom Length: 950.00 ft.
Bottom Width: 25.00 ft.
Manning's n: 0.04
Channel bottom slope 1: 0.001 To 1
Channel Left side slope 0: 0.25 To 1
Channel right side slope 2: 0.25 To 1
Discharge Structure
Riser Height: 0 ft.
Riser Diameter: 0 in.
Element Flows To:
Outlet 1 Outlet 2
POC 2

Channel Hydraulic Table

Stage(ft)	Area(ac)	Volume(ac-ft)	Discharge(cfs)	Infilt(cfs)
0.0000	0.545	0.000	0.000	0.000
0.3333	0.548	0.182	4.660	0.000
0.6667	0.552	0.365	14.61	0.000
1.0000	0.556	0.550	28.40	0.000
1.3333	0.559	0.736	45.36	0.000
1.6667	0.563	0.923	65.08	0.000
2.0000	0.567	1.112	87.28	0.000
2.3333	0.570	1.301	111.7	0.000
2.6667	0.574	1.492	138.2	0.000
3.0000	0.577	1.684	166.6	0.000
3.3333	0.581	1.878	196.7	0.000
3.6667	0.585	2.072	228.6	0.000
4.0000	0.588	2.268	262.0	0.000
4.3333	0.592	2.465	296.9	0.000
4.6667	0.596	2.663	333.2	0.000
5.0000	0.599	2.862	371.0	0.000
5.3333	0.603	3.063	410.0	0.000
5.6667	0.607	3.264	450.3	0.000
6.0000	0.610	3.467	491.7	0.000
6.3333	0.614	3.671	534.4	0.000
6.6667	0.617	3.877	578.2	0.000
7.0000	0.621	4.083	623.1	0.000
7.3333	0.625	4.291	669.1	0.000
7.6667	0.628	4.500	716.1	0.000
8.0000	0.632	4.710	764.2	0.000
8.3333	0.636	4.922	813.3	0.000
8.6667	0.639	5.134	863.3	0.000
9.0000	0.643	5.348	914.3	0.000
9.3333	0.647	5.563	966.3	0.000
9.6667	0.650	5.780	1019.	0.000
10.000	0.654	5.997	1073.	0.000
10.333	0.657	6.216	1127.	0.000
10.667	0.661	6.436	1183.	0.000
11.000	0.665	6.657	1239.	0.000
11.333	0.668	6.879	1297.	0.000
11.667	0.672	7.103	1355.	0.000
12.000	0.676	7.327	1414.	0.000
12.333	0.679	7.553	1474.	0.000
12.667	0.683	7.781	1534.	0.000
13.000	0.687	8.009	1596.	0.000

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13.333	0.690	8.239	1658.	0.000
13.667	0.694	8.469	1722.	0.000
14.000	0.697	8.701	1786.	0.000
14.333	0.701	8.935	1850.	0.000
14.667	0.705	9.169	1916.	0.000
15.000	0.708	9.405	1982.	0.000
15.333	0.712	9.642	2049.	0.000
15.667	0.716	9.880	2117.	0.000
16.000	0.719	10.12	2186.	0.000
16.333	0.723	10.36	2256.	0.000
16.667	0.727	10.60	2326.	0.000
17.000	0.730	10.84	2397.	0.000
17.333	0.734	11.08	2469.	0.000
17.667	0.737	11.33	2541.	0.000
18.000	0.741	11.58	2615.	0.000
18.333	0.745	11.82	2689.	0.000
18.667	0.748	12.07	2764.	0.000
19.000	0.752	12.32	2839.	0.000
19.333	0.756	12.57	2916.	0.000
19.667	0.759	12.83	2993.	0.000
20.000	0.763	13.08	3071.	0.000
20.333	0.767	13.34	3150.	0.000
20.667	0.770	13.59	3229.	0.000
21.000	0.774	13.85	3309.	0.000
21.333	0.777	14.11	3390.	0.000
21.667	0.781	14.37	3472.	0.000
22.000	0.785	14.63	3554.	0.000
22.333	0.788	14.89	3637.	0.000
22.667	0.792	15.16	3721.	0.000
23.000	0.796	15.42	3806.	0.000
23.333	0.799	15.69	3891.	0.000
23.667	0.803	15.95	3978.	0.000
24.000	0.807	16.22	4065.	0.000
24.333	0.810	16.49	4152.	0.000
24.667	0.814	16.76	4241.	0.000
25.000	0.817	17.03	4330.	0.000
25.333	0.821	17.31	4420.	0.000
25.667	0.825	17.58	4510.	0.000
26.000	0.828	17.86	4602.	0.000
26.333	0.832	18.13	4694.	0.000
26.667	0.836	18.41	4787.	0.000
27.000	0.839	18.69	4881.	0.000
27.333	0.843	18.97	4975.	0.000
27.667	0.847	19.25	5070.	0.000
28.000	0.850	19.54	5166.	0.000
28.333	0.854	19.82	5263.	0.000
28.667	0.857	20.11	5360.	0.000
29.000	0.861	20.39	5459.	0.000
29.333	0.865	20.68	5558.	0.000
29.667	0.868	20.97	5657.	0.000
30.000	0.872	21.26	5758.	0.000
30.333	0.876	21.55	5859.	0.000

DRAFT

POC 2

Bottom Length: 350.00 ft.
Bottom Width: 25.00 ft.
Manning's n: 0.04
Channel bottom slope 1: 0.0011 To 1
Channel Left side slope 0: 0.25 To 1
Channel right side slope 2: 0.25 To 1
Discharge Structure
Riser Height: 0 ft.
Riser Diameter: 0 in.
Element Flows To:
Outlet 1 Outlet 2
Upstream POC 1

Channel Hydraulic Table

Stage(ft)	Area(ac)	Volume(ac-ft)	Discharge(cfs)	Infilt(cfs)
0.0000	0.200	0.000	0.000	0.000
0.3333	0.202	0.067	4.887	0.000
0.6667	0.203	0.134	15.33	0.000
1.0000	0.204	0.202	29.78	0.000
1.3333	0.206	0.271	47.57	0.000
1.6667	0.207	0.340	68.26	0.000
2.0000	0.208	0.409	91.54	0.000
2.3333	0.210	0.479	117.1	0.000
2.6667	0.211	0.549	144.9	0.000
3.0000	0.212	0.620	174.7	0.000
3.3333	0.214	0.691	206.3	0.000
3.6667	0.215	0.763	239.7	0.000
4.0000	0.216	0.835	274.8	0.000
4.3333	0.218	0.908	311.4	0.000
4.6667	0.219	0.981	349.5	0.000
5.0000	0.221	1.054	389.1	0.000
5.3333	0.222	1.128	430.0	0.000
5.6667	0.223	1.202	472.2	0.000
6.0000	0.225	1.277	515.7	0.000
6.3333	0.226	1.352	560.5	0.000
6.6667	0.227	1.428	606.4	0.000
7.0000	0.229	1.504	653.5	0.000
7.3333	0.230	1.581	701.8	0.000
7.6667	0.231	1.658	751.1	0.000
8.0000	0.233	1.735	801.5	0.000
8.3333	0.234	1.813	853.0	0.000
8.6667	0.235	1.891	905.5	0.000
9.0000	0.237	1.970	959.0	0.000
9.3333	0.238	2.049	1013.	0.000
9.6667	0.239	2.129	1068.	0.000
10.000	0.241	2.209	1125.	0.000
10.333	0.242	2.290	1182.	0.000
10.667	0.243	2.371	1241.	0.000
11.000	0.245	2.452	1300.	0.000
11.333	0.246	2.534	1360.	0.000
11.667	0.247	2.617	1421.	0.000
12.000	0.249	2.699	1483.	0.000
12.333	0.250	2.783	1546.	0.000
12.667	0.251	2.866	1609.	0.000
13.000	0.253	2.950	1674.	0.000

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13.333	0.254	3.035	1739.	0.000
13.667	0.255	3.120	1806.	0.000
14.000	0.257	3.206	1873.	0.000
14.333	0.258	3.292	1941.	0.000
14.667	0.259	3.378	2009.	0.000
15.000	0.261	3.465	2079.	0.000
15.333	0.262	3.552	2150.	0.000
15.667	0.263	3.640	2221.	0.000
16.000	0.265	3.728	2293.	0.000
16.333	0.266	3.817	2366.	0.000
16.667	0.267	3.906	2439.	0.000
17.000	0.269	3.995	2514.	0.000
17.333	0.270	4.085	2589.	0.000
17.667	0.271	4.175	2665.	0.000
18.000	0.273	4.266	2742.	0.000
18.333	0.274	4.358	2820.	0.000
18.667	0.275	4.449	2899.	0.000
19.000	0.277	4.542	2978.	0.000
19.333	0.278	4.634	3058.	0.000
19.667	0.279	4.727	3139.	0.000
20.000	0.281	4.821	3221.	0.000
20.333	0.282	4.915	3303.	0.000
20.667	0.283	5.009	3387.	0.000
21.000	0.285	5.104	3471.	0.000
21.333	0.286	5.199	3556.	0.000
21.667	0.288	5.295	3641.	0.000
22.000	0.289	5.391	3728.	0.000
22.333	0.290	5.488	3815.	0.000
22.667	0.292	5.585	3903.	0.000
23.000	0.293	5.683	3992.	0.000
23.333	0.294	5.781	4081.	0.000
23.667	0.296	5.879	4172.	0.000
24.000	0.297	5.978	4263.	0.000
24.333	0.298	6.077	4355.	0.000
24.667	0.300	6.177	4448.	0.000
25.000	0.301	6.277	4541.	0.000
25.333	0.302	6.378	4636.	0.000
25.667	0.304	6.479	4731.	0.000
26.000	0.305	6.581	4827.	0.000
26.333	0.306	6.683	4923.	0.000
26.667	0.308	6.785	5021.	0.000
27.000	0.309	6.888	5119.	0.000
27.333	0.310	6.991	5218.	0.000
27.667	0.312	7.095	5318.	0.000
28.000	0.313	7.199	5418.	0.000
28.333	0.314	7.304	5520.	0.000
28.667	0.316	7.409	5622.	0.000
29.000	0.317	7.515	5725.	0.000
29.333	0.318	7.621	5829.	0.000
29.667	0.320	7.727	5934.	0.000
30.000	0.321	7.834	6039.	0.000
30.333	0.322	7.942	6145.	0.000

DRAFT

Trib 9

Bottom Length: 1880.00 ft.
Bottom Width: 4.00 ft.
Manning's n: 0.035
Channel bottom slope 1: 0.0298 To 1
Channel Left side slope 0: 0.5 To 1
Channel right side slope 2: 0.5 To 1
Discharge Structure
Riser Height: 0 ft.
Riser Diameter: 0 in.
Element Flows To:
Outlet 1 Outlet 2
POC 2

Channel Hydraulic Table

Stage(ft)	Area(ac)	Volume(ac-ft)	Discharge(cfs)	Infilt(cfs)
0.0000	0.172	0.000	0.000	0.000
0.0889	0.176	0.015	0.513	0.000
0.1778	0.180	0.031	1.609	0.000
0.2667	0.184	0.047	3.126	0.000
0.3556	0.188	0.064	4.997	0.000
0.4444	0.191	0.081	7.181	0.000
0.5333	0.195	0.098	9.648	0.000
0.6222	0.199	0.115	12.37	0.000
0.7111	0.203	0.133	15.35	0.000
0.8000	0.207	0.151	18.56	0.000
0.8889	0.211	0.170	22.00	0.000
0.9778	0.214	0.189	25.65	0.000
1.0667	0.218	0.208	29.52	0.000
1.1556	0.222	0.228	33.59	0.000
1.2444	0.226	0.248	37.87	0.000
1.3333	0.230	0.268	42.34	0.000
1.4222	0.234	0.289	47.02	0.000
1.5111	0.237	0.310	51.88	0.000
1.6000	0.241	0.331	56.94	0.000
1.6889	0.245	0.353	62.19	0.000
1.7778	0.249	0.375	67.64	0.000
1.8667	0.253	0.397	73.27	0.000
1.9556	0.257	0.420	79.09	0.000
2.0444	0.260	0.443	85.10	0.000
2.1333	0.264	0.466	91.31	0.000
2.2222	0.268	0.490	97.70	0.000
2.3111	0.272	0.514	104.2	0.000
2.4000	0.276	0.538	111.0	0.000
2.4889	0.280	0.563	118.0	0.000
2.5778	0.283	0.588	125.1	0.000
2.6667	0.287	0.613	132.5	0.000
2.7556	0.291	0.639	140.0	0.000
2.8444	0.295	0.665	147.7	0.000
2.9333	0.299	0.692	155.7	0.000
3.0222	0.303	0.718	163.8	0.000
3.1111	0.306	0.746	172.1	0.000
3.2000	0.310	0.773	180.6	0.000
3.2889	0.314	0.801	189.3	0.000
3.3778	0.318	0.829	198.2	0.000
3.4667	0.322	0.857	207.3	0.000

DRAFT

3.5556	0.326	0.886	216.6	0.000
3.6444	0.330	0.915	226.1	0.000
3.7333	0.333	0.945	235.8	0.000
3.8222	0.337	0.975	245.7	0.000
3.9111	0.341	1.005	255.8	0.000
4.0000	0.345	1.035	266.1	0.000
4.0889	0.349	1.066	276.7	0.000
4.1778	0.353	1.098	287.4	0.000
4.2667	0.356	1.129	298.3	0.000
4.3556	0.360	1.161	309.5	0.000
4.4444	0.364	1.193	320.8	0.000
4.5333	0.368	1.226	332.4	0.000
4.6222	0.372	1.259	344.2	0.000
4.7111	0.376	1.292	356.2	0.000
4.8000	0.379	1.326	368.4	0.000
4.8889	0.383	1.359	380.9	0.000
4.9778	0.387	1.394	393.5	0.000
5.0667	0.391	1.428	406.4	0.000
5.1556	0.395	1.463	419.5	0.000
5.2444	0.399	1.499	432.8	0.000
5.3333	0.402	1.534	446.3	0.000
5.4222	0.406	1.570	460.1	0.000
5.5111	0.410	1.607	474.0	0.000
5.6000	0.414	1.643	488.2	0.000
5.6889	0.418	1.680	502.7	0.000
5.7778	0.422	1.718	517.3	0.000
5.8667	0.425	1.755	532.2	0.000
5.9556	0.429	1.793	547.4	0.000
6.0444	0.433	1.832	562.7	0.000
6.1333	0.437	1.870	578.3	0.000
6.2222	0.441	1.909	594.1	0.000
6.3111	0.445	1.949	610.2	0.000
6.4000	0.448	1.989	626.5	0.000
6.4889	0.452	2.029	643.0	0.000
6.5778	0.456	2.069	659.8	0.000
6.6667	0.460	2.110	676.8	0.000
6.7556	0.464	2.151	694.1	0.000
6.8444	0.468	2.192	711.6	0.000
6.9333	0.472	2.234	729.3	0.000
7.0222	0.475	2.276	747.3	0.000
7.1111	0.479	2.319	765.5	0.000
7.2000	0.483	2.362	784.0	0.000
7.2889	0.487	2.405	802.7	0.000
7.3778	0.491	2.448	821.7	0.000
7.4667	0.495	2.492	840.9	0.000
7.5556	0.498	2.536	860.4	0.000
7.6444	0.502	2.581	880.2	0.000
7.7333	0.506	2.626	900.2	0.000
7.8222	0.510	2.671	920.4	0.000
7.9111	0.514	2.716	940.9	0.000
8.0000	0.518	2.762	961.7	0.000
8.0889	0.521	2.808	982.7	0.000

DRAFT

Urban 4

Bottom Length: 481.00 ft.
Bottom Width: 4.00 ft.
Manning's n: 0.035
Channel bottom slope 1: 0.0665 To 1
Channel Left side slope 0: 0.5 To 1
Channel right side slope 2: 0.5 To 1
Discharge Structure
Riser Height: 0 ft.
Riser Diameter: 0 in.
Element Flows To:
Outlet 1 Outlet 2
Upstream POC 1

Channel Hydraulic Table

Stage(ft)	Area(ac)	Volume(ac-ft)	Discharge(cfs)	Infilt(cfs)
0.0000	0.044	0.000	0.000	0.000
0.0889	0.045	0.004	0.766	0.000
0.1778	0.046	0.008	2.403	0.000
0.2667	0.047	0.012	4.670	0.000
0.3556	0.048	0.016	7.466	0.000
0.4444	0.049	0.020	10.72	0.000
0.5333	0.050	0.025	14.41	0.000
0.6222	0.051	0.029	18.49	0.000
0.7111	0.052	0.034	22.93	0.000
0.8000	0.053	0.038	27.73	0.000
0.8889	0.054	0.043	32.87	0.000
0.9778	0.055	0.048	38.33	0.000
1.0667	0.056	0.053	44.10	0.000
1.1556	0.056	0.058	50.19	0.000
1.2444	0.057	0.063	56.57	0.000
1.3333	0.058	0.068	63.26	0.000
1.4222	0.059	0.074	70.24	0.000
1.5111	0.060	0.079	77.51	0.000
1.6000	0.061	0.084	85.06	0.000
1.6889	0.062	0.090	92.91	0.000
1.7778	0.063	0.096	101.0	0.000
1.8667	0.064	0.101	109.4	0.000
1.9556	0.065	0.107	118.1	0.000
2.0444	0.066	0.113	127.1	0.000
2.1333	0.067	0.119	136.4	0.000
2.2222	0.068	0.125	145.9	0.000
2.3111	0.069	0.131	155.7	0.000
2.4000	0.070	0.137	165.8	0.000
2.4889	0.071	0.144	176.2	0.000
2.5778	0.072	0.150	186.9	0.000
2.6667	0.073	0.157	197.9	0.000
2.7556	0.074	0.163	209.2	0.000
2.8444	0.075	0.170	220.7	0.000
2.9333	0.076	0.177	232.5	0.000
3.0222	0.077	0.184	244.7	0.000
3.1111	0.078	0.190	257.1	0.000
3.2000	0.079	0.198	269.8	0.000
3.2889	0.080	0.205	282.8	0.000
3.3778	0.081	0.212	296.1	0.000
3.4667	0.082	0.219	309.7	0.000

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3.5556	0.083	0.227	323.6	0.000
3.6444	0.084	0.234	337.8	0.000
3.7333	0.085	0.242	352.3	0.000
3.8222	0.086	0.249	367.1	0.000
3.9111	0.087	0.257	382.2	0.000
4.0000	0.088	0.265	397.6	0.000
4.0889	0.089	0.273	413.3	0.000
4.1778	0.090	0.281	429.4	0.000
4.2667	0.091	0.289	445.7	0.000
4.3556	0.092	0.297	462.3	0.000
4.4444	0.093	0.305	479.3	0.000
4.5333	0.094	0.313	496.6	0.000
4.6222	0.095	0.322	514.2	0.000
4.7111	0.096	0.330	532.1	0.000
4.8000	0.097	0.339	550.4	0.000
4.8889	0.098	0.348	569.0	0.000
4.9778	0.099	0.356	587.9	0.000
5.0667	0.100	0.365	607.1	0.000
5.1556	0.101	0.374	626.6	0.000
5.2444	0.102	0.383	646.5	0.000
5.3333	0.103	0.392	666.7	0.000
5.4222	0.104	0.402	687.3	0.000
5.5111	0.105	0.411	708.2	0.000
5.6000	0.106	0.420	729.4	0.000
5.6889	0.107	0.430	750.9	0.000
5.7778	0.108	0.439	772.9	0.000
5.8667	0.109	0.449	795.1	0.000
5.9556	0.110	0.459	817.7	0.000
6.0444	0.111	0.469	840.6	0.000
6.1333	0.112	0.479	863.9	0.000
6.2222	0.113	0.489	887.6	0.000
6.3111	0.114	0.499	911.5	0.000
6.4000	0.115	0.509	935.9	0.000
6.4889	0.116	0.519	960.6	0.000
6.5778	0.117	0.530	985.6	0.000
6.6667	0.118	0.540	1011.	0.000
6.7556	0.119	0.550	1036.	0.000
6.8444	0.120	0.561	1063.	0.000
6.9333	0.121	0.572	1089.	0.000
7.0222	0.121	0.583	1116.	0.000
7.1111	0.122	0.594	1143.	0.000
7.2000	0.123	0.604	1171.	0.000
7.2889	0.124	0.616	1199.	0.000
7.3778	0.125	0.627	1227.	0.000
7.4667	0.126	0.638	1256.	0.000
7.5556	0.127	0.649	1285.	0.000
7.6444	0.128	0.661	1314.	0.000
7.7333	0.129	0.672	1344.	0.000
7.8222	0.130	0.684	1375.	0.000
7.9111	0.131	0.695	1405.	0.000
8.0000	0.132	0.707	1436.	0.000
8.0889	0.133	0.719	1468.	0.000

DRAFT

Upstream POC 1

Bottom Length: 988.00 ft.
Bottom Width: 25.00 ft.
Manning's n: 0.04
Channel bottom slope 1: 0.0071 To 1
Channel Left side slope 0: 0.25 To 1
Channel right side slope 2: 0.25 To 1
Discharge Structure
Riser Height: 0 ft.
Riser Diameter: 0 in.
Element Flows To:
Outlet 1 Outlet 2
POC 1

Channel Hydraulic Table

Stage(ft)	Area(ac)	Volume(ac-ft)	Discharge(cfs)	Infilt(cfs)
0.0000	0.567	0.000	0.000	0.000
0.3333	0.570	0.189	12.41	0.000
0.6667	0.574	0.380	38.95	0.000
1.0000	0.578	0.572	75.67	0.000
1.3333	0.582	0.766	120.8	0.000
1.6667	0.585	0.960	173.4	0.000
2.0000	0.589	1.156	232.5	0.000
2.3333	0.593	1.354	297.6	0.000
2.6667	0.597	1.552	368.2	0.000
3.0000	0.601	1.752	443.9	0.000
3.3333	0.604	1.953	524.3	0.000
3.6667	0.608	2.155	609.1	0.000
4.0000	0.612	2.358	698.2	0.000
4.3333	0.616	2.563	791.2	0.000
4.6667	0.620	2.769	888.0	0.000
5.0000	0.623	2.977	988.5	0.000
5.3333	0.627	3.185	1092.	0.000
5.6667	0.631	3.395	1199.	0.000
6.0000	0.635	3.606	1310.	0.000
6.3333	0.638	3.818	1424.	0.000
6.6667	0.642	4.032	1540.	0.000
7.0000	0.646	4.247	1660.	0.000
7.3333	0.650	4.463	1783.	0.000
7.6667	0.654	4.680	1908.	0.000
8.0000	0.657	4.899	2036.	0.000
8.3333	0.661	5.119	2167.	0.000
8.6667	0.665	5.340	2300.	0.000
9.0000	0.669	5.563	2436.	0.000
9.3333	0.673	5.786	2574.	0.000
9.6667	0.676	6.011	2715.	0.000
10.000	0.680	6.237	2859.	0.000
10.333	0.684	6.465	3004.	0.000
10.667	0.688	6.694	3153.	0.000
11.000	0.691	6.924	3303.	0.000
11.333	0.695	7.155	3456.	0.000
11.667	0.699	7.387	3611.	0.000
12.000	0.703	7.621	3768.	0.000
12.333	0.707	7.856	3928.	0.000
12.667	0.710	8.093	4090.	0.000
13.000	0.714	8.330	4254.	0.000

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13.333	0.718	8.569	4420.	0.000
13.667	0.722	8.809	4588.	0.000
14.000	0.725	9.050	4759.	0.000
14.333	0.729	9.293	4931.	0.000
14.667	0.733	9.537	5106.	0.000
15.000	0.737	9.782	5283.	0.000
15.333	0.741	10.02	5462.	0.000
15.667	0.744	10.27	5643.	0.000
16.000	0.748	10.52	5826.	0.000
16.333	0.752	10.77	6011.	0.000
16.667	0.756	11.02	6199.	0.000
17.000	0.760	11.28	6388.	0.000
17.333	0.763	11.53	6579.	0.000
17.667	0.767	11.78	6773.	0.000
18.000	0.771	12.04	6968.	0.000
18.333	0.775	12.30	7166.	0.000
18.667	0.778	12.56	7365.	0.000
19.000	0.782	12.82	7567.	0.000
19.333	0.786	13.08	7770.	0.000
19.667	0.790	13.34	7976.	0.000
20.000	0.794	13.61	8184.	0.000
20.333	0.797	13.87	8393.	0.000
20.667	0.801	14.14	8605.	0.000
21.000	0.805	14.41	8818.	0.000
21.333	0.809	14.68	9034.	0.000
21.667	0.813	14.95	9252.	0.000
22.000	0.816	15.22	9471.	0.000
22.333	0.820	15.49	9693.	0.000
22.667	0.824	15.76	9917.	0.000
23.000	0.828	16.04	10142	0.000
23.333	0.831	16.32	10370	0.000
23.667	0.835	16.59	10600	0.000
24.000	0.839	16.87	10831	0.000
24.333	0.843	17.15	11065	0.000
24.667	0.847	17.44	11300	0.000
25.000	0.850	17.72	11538	0.000
25.333	0.854	18.00	11778	0.000
25.667	0.858	18.29	12019	0.000
26.000	0.862	18.58	12263	0.000
26.333	0.866	18.86	12509	0.000
26.667	0.869	19.15	12756	0.000
27.000	0.873	19.44	13006	0.000
27.333	0.877	19.73	13258	0.000
27.667	0.881	20.03	13511	0.000
28.000	0.884	20.32	13767	0.000
28.333	0.888	20.62	14025	0.000
28.667	0.892	20.91	14284	0.000
29.000	0.896	21.21	14546	0.000
29.333	0.900	21.51	14810	0.000
29.667	0.903	21.81	15075	0.000
30.000	0.907	22.11	15343	0.000
30.333	0.911	22.42	15613	0.000

DRAFT

POC 1

Bottom Length:	988.00 ft.
Bottom Width:	25.00 ft.
Manning's n:	0.04
Channel bottom slope 1:	0.0071 To 1
Channel Left side slope 0:	0.25 To 1
Channel right side slope 2:	0.25 To 1
Discharge Structure	
Riser Height:	0 ft.
Riser Diameter:	0 in.
Element Flows To:	
Outlet 1	Outlet 2

Channel Hydraulic Table

Stage(ft)	Area(ac)	Volume(ac-ft)	Discharge(cfs)	Infilt(cfs)
0.0000	0.567	0.000	0.000	0.000
0.3333	0.570	0.189	12.41	0.000
0.6667	0.574	0.380	38.95	0.000
1.0000	0.578	0.572	75.67	0.000
1.3333	0.582	0.766	120.8	0.000
1.6667	0.585	0.960	173.4	0.000
2.0000	0.589	1.156	232.5	0.000
2.3333	0.593	1.354	297.6	0.000
2.6667	0.597	1.552	368.2	0.000
3.0000	0.601	1.752	443.9	0.000
3.3333	0.604	1.953	524.3	0.000
3.6667	0.608	2.155	609.1	0.000
4.0000	0.612	2.358	698.2	0.000
4.3333	0.616	2.563	791.2	0.000
4.6667	0.620	2.769	888.0	0.000
5.0000	0.623	2.977	988.5	0.000
5.3333	0.627	3.185	1092.	0.000
5.6667	0.631	3.395	1199.	0.000
6.0000	0.635	3.606	1310.	0.000
6.3333	0.638	3.818	1424.	0.000
6.6667	0.642	4.032	1540.	0.000
7.0000	0.646	4.247	1660.	0.000
7.3333	0.650	4.463	1783.	0.000
7.6667	0.654	4.680	1908.	0.000
8.0000	0.657	4.899	2036.	0.000
8.3333	0.661	5.119	2167.	0.000
8.6667	0.665	5.340	2300.	0.000
9.0000	0.669	5.563	2436.	0.000
9.3333	0.673	5.786	2574.	0.000
9.6667	0.676	6.011	2715.	0.000
10.000	0.680	6.237	2859.	0.000
10.333	0.684	6.465	3004.	0.000
10.667	0.688	6.694	3153.	0.000
11.000	0.691	6.924	3303.	0.000
11.333	0.695	7.155	3456.	0.000
11.667	0.699	7.387	3611.	0.000
12.000	0.703	7.621	3768.	0.000
12.333	0.707	7.856	3928.	0.000
12.667	0.710	8.093	4090.	0.000
13.000	0.714	8.330	4254.	0.000

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13.333	0.718	8.569	4420.	0.000
13.667	0.722	8.809	4588.	0.000
14.000	0.725	9.050	4759.	0.000
14.333	0.729	9.293	4931.	0.000
14.667	0.733	9.537	5106.	0.000
15.000	0.737	9.782	5283.	0.000
15.333	0.741	10.02	5462.	0.000
15.667	0.744	10.27	5643.	0.000
16.000	0.748	10.52	5826.	0.000
16.333	0.752	10.77	6011.	0.000
16.667	0.756	11.02	6199.	0.000
17.000	0.760	11.28	6388.	0.000
17.333	0.763	11.53	6579.	0.000
17.667	0.767	11.78	6773.	0.000
18.000	0.771	12.04	6968.	0.000
18.333	0.775	12.30	7166.	0.000
18.667	0.778	12.56	7365.	0.000
19.000	0.782	12.82	7567.	0.000
19.333	0.786	13.08	7770.	0.000
19.667	0.790	13.34	7976.	0.000
20.000	0.794	13.61	8184.	0.000
20.333	0.797	13.87	8393.	0.000
20.667	0.801	14.14	8605.	0.000
21.000	0.805	14.41	8818.	0.000
21.333	0.809	14.68	9034.	0.000
21.667	0.813	14.95	9252.	0.000
22.000	0.816	15.22	9471.	0.000
22.333	0.820	15.49	9693.	0.000
22.667	0.824	15.76	9917.	0.000
23.000	0.828	16.04	10142	0.000
23.333	0.831	16.32	10370	0.000
23.667	0.835	16.59	10600	0.000
24.000	0.839	16.87	10831	0.000
24.333	0.843	17.15	11065	0.000
24.667	0.847	17.44	11300	0.000
25.000	0.850	17.72	11538	0.000
25.333	0.854	18.00	11778	0.000
25.667	0.858	18.29	12019	0.000
26.000	0.862	18.58	12263	0.000
26.333	0.866	18.86	12509	0.000
26.667	0.869	19.15	12756	0.000
27.000	0.873	19.44	13006	0.000
27.333	0.877	19.73	13258	0.000
27.667	0.881	20.03	13511	0.000
28.000	0.884	20.32	13767	0.000
28.333	0.888	20.62	14025	0.000
28.667	0.892	20.91	14284	0.000
29.000	0.896	21.21	14546	0.000
29.333	0.900	21.51	14810	0.000
29.667	0.903	21.81	15075	0.000
30.000	0.907	22.11	15343	0.000
30.333	0.911	22.42	15613	0.000

DRAFT

Off-site 105

Depth: 10 ft.
Element Flows To:
Outlet 1 Outlet 2
Urban 1

SSD Table Hydraulic Table

Stage (ft)	Area (ac)	Volume (ac-ft)	Manual	NotUsed	NotUsed	NotUsed	NotUsed
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.500	1.600	0.400	23.00	0.000	0.000	0.000	0.000
1.500	1.700	1.090	54.00	0.000	0.000	0.000	0.000
2.500	1.800	2.320	96.00	0.000	0.000	0.000	0.000
3.500	2.000	4.540	144.0	0.000	0.000	0.000	0.000
5.500	2.200	7.830	195.0	0.000	0.000	0.000	0.000
7.500	3.600	12.26	258.0	0.000	0.000	0.000	0.000
9.500	4.200	18.19	324.0	0.000	0.000	0.000	0.000

DRAFT

Off-site 103

Depth: 12 ft.
Element Flows To:
Outlet 1 Outlet 2
Urban 2

SSD Table Hydraulic Table

Stage (ft)	Area (ac)	Volume (ac-ft)	Manual	NotUsed	NotUsed	NotUsed	NotUsed
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.500	1.600	2.140	251.0	0.000	0.000	0.000	0.000
1.500	1.700	7.080	520.0	0.000	0.000	0.000	0.000
2.500	1.800	10.91	640.0	0.000	0.000	0.000	0.000
3.500	2.000	15.21	768.0	0.000	0.000	0.000	0.000
5.500	2.200	19.84	880.0	0.000	0.000	0.000	0.000
7.500	3.600	24.92	960.0	0.000	0.000	0.000	0.000
9.500	4.200	30.37	1040	0.000	0.000	0.000	0.000
11.50	5.900	61.40	1392	0.000	0.000	0.000	0.000

DRAFT

Off-site 102

Depth: 19.2 ft.
Element Flows To:
Outlet 1 Outlet 2
Urban 3

SSD Table Hydraulic Table

Stage (ft)	Area (ac)	Volume (ac-ft)	Manual	NotUsed	NotUsed	NotUsed	NotUsed
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.010	1.400	0.014	0.009	0.000	0.000	0.000	0.000
0.200	1.344	0.105	0.844	0.000	0.000	0.000	0.000
0.400	1.386	0.272	2.387	0.000	0.000	0.000	0.000
0.600	1.429	0.448	4.385	0.000	0.000	0.000	0.000
0.800	1.473	0.633	6.751	0.000	0.000	0.000	0.000
1.000	1.518	0.828	9.435	0.000	0.000	0.000	0.000
1.200	1.564	1.034	12.40	0.000	0.000	0.000	0.000
1.400	1.610	1.248	15.63	0.000	0.000	0.000	0.000
1.600	1.658	1.473	19.10	0.000	0.000	0.000	0.000
1.800	1.706	1.707	22.79	0.000	0.000	0.000	0.000
2.000	1.756	1.951	26.69	0.000	0.000	0.000	0.000
2.200	1.806	2.204	30.79	0.000	0.000	0.000	0.000
2.400	1.858	2.468	35.08	0.000	0.000	0.000	0.000
2.600	1.910	2.741	39.63	0.000	0.000	0.000	0.000
2.800	1.963	3.023	42.46	0.000	0.000	0.000	0.000
3.000	2.018	3.316	45.12	0.000	0.000	0.000	0.000
3.200	2.073	3.618	47.63	0.000	0.000	0.000	0.000
3.400	2.129	3.930	50.01	0.000	0.000	0.000	0.000
3.600	2.186	4.251	52.28	0.000	0.000	0.000	0.000
3.800	2.244	4.583	54.46	0.000	0.000	0.000	0.000
4.000	2.303	4.924	56.56	0.000	0.000	0.000	0.000
4.200	2.363	5.274	58.58	0.000	0.000	0.000	0.000
4.400	2.424	5.635	60.53	0.000	0.000	0.000	0.000
4.600	2.485	6.005	62.42	0.000	0.000	0.000	0.000
4.800	2.548	6.385	64.26	0.000	0.000	0.000	0.000
5.000	2.612	6.774	66.05	0.000	0.000	0.000	0.000
5.200	2.676	7.174	67.79	0.000	0.000	0.000	0.000
5.400	2.742	7.583	69.48	0.000	0.000	0.000	0.000
5.600	2.808	8.001	71.13	0.000	0.000	0.000	0.000
5.800	2.876	8.430	72.75	0.000	0.000	0.000	0.000
6.000	2.944	8.868	74.33	0.000	0.000	0.000	0.000
6.200	3.014	9.316	75.88	0.000	0.000	0.000	0.000
6.400	3.084	9.773	77.40	0.000	0.000	0.000	0.000
6.600	3.155	10.24	78.89	0.000	0.000	0.000	0.000
6.800	3.227	10.72	80.35	0.000	0.000	0.000	0.000
7.000	3.300	11.20	81.78	0.000	0.000	0.000	0.000
7.200	3.375	11.70	83.19	0.000	0.000	0.000	0.000
7.400	3.450	12.21	84.58	0.000	0.000	0.000	0.000
7.600	3.525	12.72	85.95	0.000	0.000	0.000	0.000
7.800	3.602	13.25	87.29	0.000	0.000	0.000	0.000
8.000	3.680	13.78	88.61	0.000	0.000	0.000	0.000
8.200	3.759	14.33	89.91	0.000	0.000	0.000	0.000
8.400	3.839	14.88	91.20	0.000	0.000	0.000	0.000
8.600	3.919	15.45	92.47	0.000	0.000	0.000	0.000
8.800	4.001	16.02	93.71	0.000	0.000	0.000	0.000
9.000	4.084	16.61	94.95	0.000	0.000	0.000	0.000

DRAFT

9.200	4.167	17.20	96.17	0.000	0.000	0.000	0.000
9.400	4.252	17.80	97.37	0.000	0.000	0.000	0.000
9.600	4.337	18.41	102.8	0.000	0.000	0.000	0.000
9.800	4.423	19.04	121.6	0.000	0.000	0.000	0.000
10.000	4.511	19.67	148.0	0.000	0.000	0.000	0.000
10.20	4.599	20.31	180.0	0.000	0.000	0.000	0.000
10.40	4.688	20.96	216.9	0.000	0.000	0.000	0.000
10.60	4.778	21.62	258.0	0.000	0.000	0.000	0.000
10.80	4.869	22.30	302.8	0.000	0.000	0.000	0.000
11.00	4.961	22.98	351.2	0.000	0.000	0.000	0.000
11.20	5.054	23.67	402.8	0.000	0.000	0.000	0.000
11.40	5.148	24.37	457.5	0.000	0.000	0.000	0.000
11.60	5.243	25.08	515.1	0.000	0.000	0.000	0.000
11.80	5.339	25.80	575.4	0.000	0.000	0.000	0.000
12.00	5.436	26.53	638.3	0.000	0.000	0.000	0.000
12.20	5.533	27.27	703.8	0.000	0.000	0.000	0.000
12.40	5.632	28.01	771.7	0.000	0.000	0.000	0.000
12.60	5.731	28.77	841.9	0.000	0.000	0.000	0.000
12.80	5.832	29.54	914.4	0.000	0.000	0.000	0.000
13.00	5.933	30.32	989.1	0.000	0.000	0.000	0.000
13.20	6.036	31.11	1065.897	0.000	0.000	0.000	0.000
13.40	6.139	31.90	1144.774	0.000	0.000	0.000	0.000
13.60	6.244	32.71	1225.666	0.000	0.000	0.000	0.000
13.80	6.349	33.53	1308.525	0.000	0.000	0.000	0.000
14.00	6.455	34.36	1393.302	0.000	0.000	0.000	0.000
14.20	6.562	35.19	1479.957	0.000	0.000	0.000	0.000
14.40	6.670	36.04	1568.447	0.000	0.000	0.000	0.000
14.60	6.779	36.89	1658.736	0.000	0.000	0.000	0.000
14.80	6.889	37.76	1750.788	0.000	0.000	0.000	0.000
15.00	7.000	38.63	1844.568	0.000	0.000	0.000	0.000
15.20	7.112	39.52	1940.046	0.000	0.000	0.000	0.000
15.40	7.225	40.41	2037.191	0.000	0.000	0.000	0.000
15.60	7.339	41.32	2135.975	0.000	0.000	0.000	0.000
15.80	7.453	42.23	2236.371	0.000	0.000	0.000	0.000
16.00	7.569	43.15	2338.352	0.000	0.000	0.000	0.000
16.20	7.685	44.09	2441.896	0.000	0.000	0.000	0.000
16.40	7.803	45.03	2546.977	0.000	0.000	0.000	0.000
16.60	7.921	45.98	2653.573	0.000	0.000	0.000	0.000
16.80	8.041	46.95	2761.664	0.000	0.000	0.000	0.000
17.00	8.161	47.92	2871.229	0.000	0.000	0.000	0.000
17.20	8.283	48.90	2982.247	0.000	0.000	0.000	0.000
17.40	8.405	49.89	3094.699	0.000	0.000	0.000	0.000
17.60	8.528	50.89	3208.569	0.000	0.000	0.000	0.000
17.80	8.652	51.90	3323.837	0.000	0.000	0.000	0.000
18.00	8.777	52.92	3440.487	0.000	0.000	0.000	0.000
18.20	8.903	53.96	3558.503	0.000	0.000	0.000	0.000
18.40	9.030	55.00	3677.869	0.000	0.000	0.000	0.000
18.60	9.158	56.05	3798.569	0.000	0.000	0.000	0.000
18.80	9.287	57.10	3920.59	0.000	0.000	0.000	0.000
19.00	9.417	58.17	4043.916	0.000	0.000	0.000	0.000

DRAFT

Urban 100

Depth: 17.5 ft.
Element Flows To:
Outlet 1 Outlet 2
Urban 4

SSD Table Hydraulic Table

Stage (ft)	Area (ac)	Volume (ac-ft)	Manual	NotUsed	NotUsed	NotUsed	NotUsed
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.500	1.600	0.030	2.850	0.000	0.000	0.000	0.000
1.500	1.700	0.080	4.270	0.000	0.000	0.000	0.000
2.500	1.800	0.170	5.710	0.000	0.000	0.000	0.000
3.500	2.000	0.290	6.840	0.000	0.000	0.000	0.000
5.500	2.200	0.450	7.760	0.000	0.000	0.000	0.000
7.500	3.600	0.650	13.30	0.000	0.000	0.000	0.000
9.500	4.200	0.900	15.99	0.000	0.000	0.000	0.000
11.50	5.900	1.220	18.17	0.000	0.000	0.000	0.000
16.50	7.600	1.600	20.06	0.000	0.000	0.000	0.000
17.50	8.000	1.800	999.0	0.000	0.000	0.000	0.000

DRAFT

Urban 101

Depth: 10 ft.
Element Flows To:
Outlet 1 Outlet 2
Urban 4

SSD Table Hydraulic Table

Stage (ft)	Area (ac)	Volume (ac-ft)	Manual	NotUsed	NotUsed	NotUsed	NotUsed
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.500	1.600	0.050	2.100	0.000	0.000	0.000	0.000
1.500	1.700	0.180	5.080	0.000	0.000	0.000	0.000
2.500	1.800	0.420	8.720	0.000	0.000	0.000	0.000
3.500	2.000	0.770	12.92	0.000	0.000	0.000	0.000
5.500	2.200	1.230	29.14	0.000	0.000	0.000	0.000
7.500	3.600	1.800	36.96	0.000	0.000	0.000	0.000
9.500	4.200	2.490	43.21	0.000	0.000	0.000	0.000

DRAFT

Mitigated Routing

POC 26

Bottom Length: 1927.00 ft.
Bottom Width: 8.00 ft.
Manning's n: 0.035
Channel bottom slope 1: 0.03 To 1
Channel Left side slope 0: 0.5 To 1
Channel right side slope 2: 0.5 To 1
Discharge Structure
Riser Height: 0 ft.
Riser Diameter: 0 in.
Element Flows To:
Outlet 1 Outlet 2
POC 24

Channel Hydraulic Table

Stage(ft)	Area(ac)	Volume(ac-ft)	Discharge(cfs)	Infilt(cfs)
0.0000	0.353	0.000	0.000	0.000
0.1111	0.358	0.039	1.501	0.000
0.2222	0.363	0.079	4.727	0.000
0.3333	0.368	0.120	9.219	0.000
0.4444	0.373	0.161	14.78	0.000
0.5556	0.378	0.203	21.29	0.000
0.6667	0.383	0.245	28.66	0.000
0.7778	0.388	0.288	36.83	0.000
0.8889	0.393	0.332	45.75	0.000
1.0000	0.398	0.376	55.37	0.000
1.1111	0.403	0.420	65.66	0.000
1.2222	0.408	0.465	76.59	0.000
1.3333	0.412	0.511	88.15	0.000
1.4444	0.417	0.557	100.3	0.000
1.5556	0.422	0.604	113.0	0.000
1.6667	0.427	0.651	126.3	0.000
1.7778	0.432	0.699	140.1	0.000
1.8889	0.437	0.747	154.5	0.000
2.0000	0.442	0.796	169.5	0.000
2.1111	0.447	0.845	184.9	0.000
2.2222	0.452	0.895	200.9	0.000
2.3333	0.457	0.946	217.3	0.000
2.4444	0.462	0.997	234.3	0.000
2.5556	0.467	1.048	251.8	0.000
2.6667	0.471	1.101	269.8	0.000
2.7778	0.476	1.153	288.2	0.000
2.8889	0.481	1.207	307.2	0.000
3.0000	0.486	1.260	326.6	0.000
3.1111	0.491	1.315	346.5	0.000
3.2222	0.496	1.370	366.9	0.000
3.3333	0.501	1.425	387.7	0.000
3.4444	0.506	1.481	409.1	0.000
3.5556	0.511	1.538	430.9	0.000
3.6667	0.516	1.595	453.2	0.000
3.7778	0.521	1.652	475.9	0.000
3.8889	0.526	1.710	499.2	0.000
4.0000	0.530	1.769	522.9	0.000
4.1111	0.535	1.828	547.0	0.000

DRAFT

4.2222	0.540	1.888	571.7	0.000
4.3333	0.545	1.949	596.8	0.000
4.4444	0.550	2.010	622.4	0.000
4.5556	0.555	2.071	648.5	0.000
4.6667	0.560	2.133	675.0	0.000
4.7778	0.565	2.196	702.0	0.000
4.8889	0.570	2.259	729.5	0.000
5.0000	0.575	2.322	757.4	0.000
5.1111	0.580	2.386	785.9	0.000
5.2222	0.585	2.451	814.8	0.000
5.3333	0.589	2.516	844.2	0.000
5.4444	0.594	2.582	874.0	0.000
5.5556	0.599	2.649	904.4	0.000
5.6667	0.604	2.716	935.2	0.000
5.7778	0.609	2.783	966.5	0.000
5.8889	0.614	2.851	998.3	0.000
6.0000	0.619	2.920	1030.	0.000
6.1111	0.624	2.989	1063.	0.000
6.2222	0.629	3.058	1096.	0.000
6.3333	0.634	3.128	1130.	0.000
6.4444	0.639	3.199	1164.	0.000
6.5556	0.644	3.271	1199.	0.000
6.6667	0.649	3.342	1234.	0.000
6.7778	0.653	3.415	1270.	0.000
6.8889	0.658	3.488	1306.	0.000
7.0000	0.663	3.561	1343.	0.000
7.1111	0.668	3.635	1380.	0.000
7.2222	0.673	3.710	1417.	0.000
7.3333	0.678	3.785	1456.	0.000
7.4444	0.683	3.860	1494.	0.000
7.5556	0.688	3.937	1533.	0.000
7.6667	0.693	4.013	1573.	0.000
7.7778	0.698	4.091	1613.	0.000
7.8889	0.703	4.169	1654.	0.000
8.0000	0.708	4.247	1695.	0.000
8.1111	0.712	4.326	1737.	0.000
8.2222	0.717	4.405	1779.	0.000
8.3333	0.722	4.485	1822.	0.000
8.4444	0.727	4.566	1865.	0.000
8.5556	0.732	4.647	1909.	0.000
8.6667	0.737	4.729	1954.	0.000
8.7778	0.742	4.811	1998.	0.000
8.8889	0.747	4.894	2044.	0.000
9.0000	0.752	4.977	2090.	0.000
9.1111	0.757	5.061	2136.	0.000
9.2222	0.762	5.145	2183.	0.000
9.3333	0.767	5.230	2231.	0.000
9.4444	0.771	5.316	2279.	0.000
9.5556	0.776	5.402	2327.	0.000
9.6667	0.781	5.488	2376.	0.000
9.7778	0.786	5.576	2426.	0.000
9.8889	0.791	5.663	2476.	0.000
10.000	0.796	5.751	2527.	0.000
10.111	0.801	5.840	2578.	0.000

DRAFT

HMB 24 (was 26)

Depth: 11.75 ft.
Element Flows To:
Outlet 1 Outlet 2
POC 26

SSD Table Hydraulic Table

Stage (ft)	Area (ac)	Volume (ac-ft)	Manual	NotUsed	NotUsed	NotUsed	NotUsed
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.010	0.550	0.005	0.001	0.000	0.000	0.000	0.000
0.100	0.556	0.055	0.035	0.000	0.000	0.000	0.000
0.200	0.562	0.111	0.099	0.000	0.000	0.000	0.000
0.300	0.568	0.168	0.182	0.000	0.000	0.000	0.000
0.400	0.574	0.225	0.258	0.000	0.000	0.000	0.000
0.500	0.580	0.283	0.309	0.000	0.000	0.000	0.000
0.600	0.586	0.341	0.352	0.000	0.000	0.000	0.000
0.700	0.592	0.400	0.391	0.000	0.000	0.000	0.000
0.800	0.598	0.460	0.426	0.000	0.000	0.000	0.000
0.900	0.604	0.520	0.458	0.000	0.000	0.000	0.000
1.000	0.610	0.581	0.488	0.000	0.000	0.000	0.000
1.100	0.616	0.642	0.517	0.000	0.000	0.000	0.000
1.200	0.622	0.704	0.544	0.000	0.000	0.000	0.000
1.300	0.628	0.767	0.570	0.000	0.000	0.000	0.000
1.400	0.634	0.830	0.594	0.000	0.000	0.000	0.000
1.500	0.640	0.894	0.618	0.000	0.000	0.000	0.000
1.600	0.646	0.958	0.641	0.000	0.000	0.000	0.000
1.700	0.652	1.023	0.662	0.000	0.000	0.000	0.000
1.800	0.658	1.088	0.684	0.000	0.000	0.000	0.000
1.900	0.664	1.154	0.704	0.000	0.000	0.000	0.000
2.000	0.670	1.221	0.724	0.000	0.000	0.000	0.000
2.100	0.676	1.288	0.744	0.000	0.000	0.000	0.000
2.200	0.682	1.356	0.763	0.000	0.000	0.000	0.000
2.300	0.688	1.425	0.781	0.000	0.000	0.000	0.000
2.400	0.694	1.494	0.800	0.000	0.000	0.000	0.000
2.500	0.700	1.563	0.817	0.000	0.000	0.000	0.000
2.600	0.706	1.634	0.835	0.000	0.000	0.000	0.000
2.700	0.712	1.705	0.852	0.000	0.000	0.000	0.000
2.800	0.718	1.776	0.868	0.000	0.000	0.000	0.000
2.900	0.724	1.848	0.885	0.000	0.000	0.000	0.000
3.000	0.730	1.921	0.901	0.000	0.000	0.000	0.000
3.100	0.736	1.994	0.916	0.000	0.000	0.000	0.000
3.200	0.742	2.068	0.932	0.000	0.000	0.000	0.000
3.300	0.748	2.142	0.947	0.000	0.000	0.000	0.000
3.400	0.754	2.217	0.962	0.000	0.000	0.000	0.000
3.500	0.760	2.293	0.977	0.000	0.000	0.000	0.000
3.600	0.766	2.369	0.991	0.000	0.000	0.000	0.000
3.700	0.772	2.446	1.006	0.000	0.000	0.000	0.000
3.800	0.778	2.523	1.020	0.000	0.000	0.000	0.000
3.900	0.784	2.601	1.034	0.000	0.000	0.000	0.000
4.000	0.790	2.679	1.047	0.000	0.000	0.000	0.000
4.100	0.796	2.759	1.061	0.000	0.000	0.000	0.000
4.200	0.802	2.838	1.074	0.000	0.000	0.000	0.000
4.300	0.808	2.919	1.088	0.000	0.000	0.000	0.000
4.400	0.814	3.000	1.290	0.000	0.000	0.000	0.000
4.500	0.820	3.081	1.650	0.000	0.000	0.000	0.000

DRAFT

4.600	0.826	3.163	2.111	0.000	0.000	0.000	0.000
4.700	0.832	3.246	2.655	0.000	0.000	0.000	0.000
4.800	0.838	3.329	3.271	0.000	0.000	0.000	0.000
4.900	0.844	3.413	3.950	0.000	0.000	0.000	0.000
5.000	0.850	3.497	4.675	0.000	0.000	0.000	0.000
5.100	0.856	3.583	5.135	0.000	0.000	0.000	0.000
5.200	0.862	3.668	5.550	0.000	0.000	0.000	0.000
5.300	0.868	3.754	5.930	0.000	0.000	0.000	0.000
5.400	0.874	3.841	6.283	0.000	0.000	0.000	0.000
5.500	0.880	3.929	6.615	0.000	0.000	0.000	0.000
5.600	0.886	4.017	6.928	0.000	0.000	0.000	0.000
5.700	0.892	4.105	7.226	0.000	0.000	0.000	0.000
5.800	0.898	4.195	7.511	0.000	0.000	0.000	0.000
5.900	0.904	4.284	7.784	0.000	0.000	0.000	0.000
6.000	0.910	4.375	8.047	0.000	0.000	0.000	0.000
6.100	0.916	4.466	8.301	0.000	0.000	0.000	0.000
6.200	0.922	4.557	8.546	0.000	0.000	0.000	0.000
6.300	0.928	4.650	8.784	0.000	0.000	0.000	0.000
6.400	0.934	4.742	9.331	0.000	0.000	0.000	0.000
6.500	0.940	4.836	10.13	0.000	0.000	0.000	0.000
6.600	0.946	4.930	11.10	0.000	0.000	0.000	0.000
6.700	0.952	5.024	12.20	0.000	0.000	0.000	0.000
6.800	0.958	5.119	13.42	0.000	0.000	0.000	0.000
6.900	0.964	5.215	14.73	0.000	0.000	0.000	0.000
7.000	0.970	5.311	16.14	0.000	0.000	0.000	0.000
7.100	0.976	5.408	17.63	0.000	0.000	0.000	0.000
7.200	0.982	5.506	19.21	0.000	0.000	0.000	0.000
7.300	0.988	5.604	20.85	0.000	0.000	0.000	0.000
7.400	0.994	5.703	22.58	0.000	0.000	0.000	0.000
7.500	1.000	5.802	24.36	0.000	0.000	0.000	0.000
7.600	1.006	5.902	26.22	0.000	0.000	0.000	0.000
7.700	1.012	6.002	28.14	0.000	0.000	0.000	0.000
7.800	1.018	6.103	30.11	0.000	0.000	0.000	0.000
7.900	1.024	6.205	32.15	0.000	0.000	0.000	0.000
8.000	1.030	6.307	34.24	0.000	0.000	0.000	0.000
8.250	1.045	6.566	39.71	0.000	0.000	0.000	0.000
8.500	1.060	6.828	45.51	0.000	0.000	0.000	0.000
8.750	1.075	7.093	51.60	0.000	0.000	0.000	0.000
9.000	1.090	7.363	57.99	0.000	0.000	0.000	0.000
9.250	1.105	7.636	64.64	0.000	0.000	0.000	0.000
9.500	1.120	7.912	71.57	0.000	0.000	0.000	0.000
9.750	1.135	8.193	78.74	0.000	0.000	0.000	0.000
10.000	1.150	8.477	86.16	0.000	0.000	0.000	0.000
10.25	1.165	8.765	101.2	0.000	0.000	0.000	0.000
10.50	1.180	9.057	121.2	0.000	0.000	0.000	0.000
10.75	1.195	9.352	145.5	0.000	0.000	0.000	0.000
11.00	1.210	9.651	173.2	0.000	0.000	0.000	0.000
11.25	1.225	9.954	203.8	0.000	0.000	0.000	0.000
11.50	1.240	10.26	237.1	0.000	0.000	0.000	0.000
11.75	1.255	10.57	999.0	0.000	0.000	0.000	0.000

DRAFT

POC 24

Bottom Length: 3435.00 ft.
Bottom Width: 6.00 ft.
Manning's n: 0.035
Channel bottom slope 1: 0.012 To 1
Channel Left side slope 0: 0.5 To 1
Channel right side slope 2: 0.5 To 1
Discharge Structure
Riser Height: 0 ft.
Riser Diameter: 0 in.
Element Flows To:
Outlet 1 Outlet 2
POC 23

Channel Hydraulic Table

Stage(ft)	Area(ac)	Volume(ac-ft)	Discharge(cfs)	Infilt(cfs)
0.0000	0.473	0.000	0.000	0.000
0.2222	0.490	0.107	2.230	0.000
0.4444	0.508	0.218	6.947	0.000
0.6667	0.525	0.333	13.43	0.000
0.8889	0.543	0.451	21.40	0.000
1.1111	0.560	0.574	30.68	0.000
1.3333	0.578	0.701	41.16	0.000
1.5556	0.595	0.831	52.78	0.000
1.7778	0.613	0.965	65.48	0.000
2.0000	0.630	1.104	79.23	0.000
2.2222	0.648	1.246	94.00	0.000
2.4444	0.665	1.392	109.7	0.000
2.6667	0.683	1.542	126.5	0.000
2.8889	0.701	1.695	144.3	0.000
3.1111	0.718	1.853	163.0	0.000
3.3333	0.736	2.015	182.7	0.000
3.5556	0.753	2.180	203.5	0.000
3.7778	0.771	2.350	225.2	0.000
4.0000	0.788	2.523	247.9	0.000
4.2222	0.806	2.700	271.6	0.000
4.4444	0.823	2.881	296.3	0.000
4.6667	0.841	3.066	322.0	0.000
4.8889	0.858	3.255	348.7	0.000
5.1111	0.876	3.448	376.5	0.000
5.3333	0.893	3.645	405.3	0.000
5.5556	0.911	3.845	435.1	0.000
5.7778	0.928	4.050	466.0	0.000
6.0000	0.946	4.258	498.0	0.000
6.2222	0.963	4.470	531.0	0.000
6.4444	0.981	4.686	565.1	0.000
6.6667	0.998	4.906	600.3	0.000
6.8889	1.016	5.130	636.6	0.000
7.1111	1.034	5.358	674.1	0.000
7.3333	1.051	5.590	712.6	0.000
7.5556	1.069	5.825	752.3	0.000
7.7778	1.086	6.065	793.1	0.000
8.0000	1.104	6.308	835.0	0.000
8.2222	1.121	6.556	878.2	0.000
8.4444	1.139	6.807	922.5	0.000
8.6667	1.156	7.062	968.0	0.000

DRAFT

8.8889	1.174	7.321	1014.	0.000
9.1111	1.191	7.584	1062.	0.000
9.3333	1.209	7.850	1111.	0.000
9.5556	1.226	8.121	1161.	0.000
9.7778	1.244	8.396	1213.	0.000
10.000	1.261	8.674	1266.	0.000
10.222	1.279	8.956	1320.	0.000
10.444	1.296	9.243	1375.	0.000
10.667	1.314	9.533	1432.	0.000
10.889	1.331	9.827	1490.	0.000
11.111	1.349	10.12	1549.	0.000
11.333	1.367	10.42	1609.	0.000
11.556	1.384	10.73	1671.	0.000
11.778	1.402	11.04	1734.	0.000
12.000	1.419	11.35	1799.	0.000
12.222	1.437	11.67	1865.	0.000
12.444	1.454	11.99	1932.	0.000
12.667	1.472	12.32	2000.	0.000
12.889	1.489	12.64	2070.	0.000
13.111	1.507	12.98	2142.	0.000
13.333	1.524	13.31	2214.	0.000
13.556	1.542	13.66	2288.	0.000
13.778	1.559	14.00	2364.	0.000
14.000	1.577	14.35	2441.	0.000
14.222	1.594	14.70	2519.	0.000
14.444	1.612	15.06	2599.	0.000
14.667	1.629	15.42	2681.	0.000
14.889	1.647	15.78	2763.	0.000
15.111	1.664	16.15	2848.	0.000
15.333	1.682	16.52	2933.	0.000
15.556	1.700	16.90	3021.	0.000
15.778	1.717	17.28	3109.	0.000
16.000	1.735	17.66	3200.	0.000
16.222	1.752	18.05	3291.	0.000
16.444	1.770	18.44	3385.	0.000
16.667	1.787	18.83	3480.	0.000
16.889	1.805	19.23	3576.	0.000
17.111	1.822	19.64	3674.	0.000
17.333	1.840	20.04	3774.	0.000
17.556	1.857	20.45	3875.	0.000
17.778	1.875	20.87	3978.	0.000
18.000	1.892	21.29	4082.	0.000
18.222	1.910	21.71	4188.	0.000
18.444	1.927	22.14	4295.	0.000
18.667	1.945	22.57	4405.	0.000
18.889	1.962	23.00	4516.	0.000
19.111	1.980	23.44	4628.	0.000
19.333	1.998	23.88	4742.	0.000
19.556	2.015	24.33	4858.	0.000
19.778	2.033	24.78	4976.	0.000
20.000	2.050	25.23	5095.	0.000
20.222	2.068	25.69	5216.	0.000

DRAFT

HMB 22 (was 24)

Depth: 10 ft.
Element Flows To:
Outlet 1 Outlet 2
POC 24

SSD Table Hydraulic Table

Stage (ft)	Area (ac)	Volume (ac-ft)	Manual	NotUsed	NotUsed	NotUsed	NotUsed
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.010	0.400	0.004	0.001	0.000	0.000	0.000	0.000
0.200	0.422	0.080	0.099	0.000	0.000	0.000	0.000
0.300	0.433	0.123	0.182	0.000	0.000	0.000	0.000
0.400	0.443	0.166	0.258	0.000	0.000	0.000	0.000
0.500	0.453	0.211	0.309	0.000	0.000	0.000	0.000
0.600	0.464	0.256	0.352	0.000	0.000	0.000	0.000
0.700	0.474	0.302	0.391	0.000	0.000	0.000	0.000
0.800	0.484	0.350	0.426	0.000	0.000	0.000	0.000
0.900	0.495	0.399	0.458	0.000	0.000	0.000	0.000
1.000	0.505	0.448	0.488	0.000	0.000	0.000	0.000
1.100	0.516	0.499	0.517	0.000	0.000	0.000	0.000
1.200	0.526	0.551	0.544	0.000	0.000	0.000	0.000
1.300	0.536	0.603	0.570	0.000	0.000	0.000	0.000
1.400	0.547	0.657	0.594	0.000	0.000	0.000	0.000
1.500	0.557	0.712	0.618	0.000	0.000	0.000	0.000
1.600	0.567	0.768	0.641	0.000	0.000	0.000	0.000
1.700	0.578	0.825	0.662	0.000	0.000	0.000	0.000
1.800	0.588	0.883	0.684	0.000	0.000	0.000	0.000
1.900	0.598	0.942	0.704	0.000	0.000	0.000	0.000
2.000	0.609	1.002	0.724	0.000	0.000	0.000	0.000
2.100	0.619	1.063	0.744	0.000	0.000	0.000	0.000
2.200	0.630	1.125	0.763	0.000	0.000	0.000	0.000
2.300	0.640	1.188	0.781	0.000	0.000	0.000	0.000
2.400	0.650	1.252	0.800	0.000	0.000	0.000	0.000
2.500	0.661	1.317	0.817	0.000	0.000	0.000	0.000
2.600	0.671	1.384	0.835	0.000	0.000	0.000	0.000
2.700	0.681	1.451	0.852	0.000	0.000	0.000	0.000
2.800	0.692	1.519	0.868	0.000	0.000	0.000	0.000
2.900	0.702	1.589	0.885	0.000	0.000	0.000	0.000
3.000	0.713	1.659	0.901	0.000	0.000	0.000	0.000
3.100	0.723	1.731	0.916	0.000	0.000	0.000	0.000
3.200	0.733	1.803	0.932	0.000	0.000	0.000	0.000
3.300	0.744	1.877	0.947	0.000	0.000	0.000	0.000
3.400	0.754	1.952	0.962	0.000	0.000	0.000	0.000
3.500	0.764	2.027	0.977	0.000	0.000	0.000	0.000
3.600	0.775	2.104	0.991	0.000	0.000	0.000	0.000
3.700	0.785	2.182	1.006	0.000	0.000	0.000	0.000
3.800	0.796	2.260	1.020	0.000	0.000	0.000	0.000
3.900	0.806	2.340	1.034	0.000	0.000	0.000	0.000
4.000	0.816	2.421	1.047	0.000	0.000	0.000	0.000
4.100	0.827	2.503	1.061	0.000	0.000	0.000	0.000
4.200	0.837	2.586	1.074	0.000	0.000	0.000	0.000
4.300	0.847	2.670	1.088	0.000	0.000	0.000	0.000
4.400	0.858	2.755	1.101	0.000	0.000	0.000	0.000
4.500	0.868	2.841	1.114	0.000	0.000	0.000	0.000
4.600	0.879	2.928	1.167	0.000	0.000	0.000	0.000

DRAFT

4.700	0.889	3.016	1.317	0.000	0.000	0.000	0.000
4.800	0.899	3.106	1.519	0.000	0.000	0.000	0.000
4.900	0.910	3.196	1.763	0.000	0.000	0.000	0.000
5.000	0.920	3.287	2.042	0.000	0.000	0.000	0.000
5.100	0.930	3.380	2.351	0.000	0.000	0.000	0.000
5.200	0.941	3.473	2.688	0.000	0.000	0.000	0.000
5.300	0.951	3.567	3.051	0.000	0.000	0.000	0.000
5.400	0.961	3.663	3.437	0.000	0.000	0.000	0.000
5.500	0.972	3.759	3.846	0.000	0.000	0.000	0.000
5.600	0.982	3.857	4.276	0.000	0.000	0.000	0.000
5.700	0.993	3.955	4.725	0.000	0.000	0.000	0.000
5.800	1.003	4.055	5.195	0.000	0.000	0.000	0.000
5.900	1.013	4.156	5.682	0.000	0.000	0.000	0.000
6.000	1.024	4.257	6.188	0.000	0.000	0.000	0.000
6.100	1.034	4.360	6.710	0.000	0.000	0.000	0.000
6.200	1.044	4.464	7.249	0.000	0.000	0.000	0.000
6.300	1.055	4.569	7.804	0.000	0.000	0.000	0.000
6.400	1.065	4.675	8.375	0.000	0.000	0.000	0.000
6.500	1.076	4.782	8.961	0.000	0.000	0.000	0.000
6.600	1.086	4.890	9.619	0.000	0.000	0.000	0.000
6.700	1.096	4.999	10.01	0.000	0.000	0.000	0.000
6.800	1.107	5.109	10.39	0.000	0.000	0.000	0.000
6.900	1.117	5.220	10.75	0.000	0.000	0.000	0.000
7.000	1.127	5.332	11.10	0.000	0.000	0.000	0.000
7.100	1.138	5.445	11.93	0.000	0.000	0.000	0.000
7.200	1.148	5.559	13.17	0.000	0.000	0.000	0.000
7.300	1.159	5.675	14.67	0.000	0.000	0.000	0.000
7.400	1.169	5.791	16.39	0.000	0.000	0.000	0.000
7.500	1.179	5.908	18.28	0.000	0.000	0.000	0.000
7.600	1.190	6.027	20.33	0.000	0.000	0.000	0.000
7.700	1.200	6.146	22.53	0.000	0.000	0.000	0.000
7.800	1.210	6.266	24.86	0.000	0.000	0.000	0.000
7.900	1.221	6.388	27.32	0.000	0.000	0.000	0.000
8.000	1.231	6.511	29.90	0.000	0.000	0.000	0.000
8.200	1.252	6.759	35.40	0.000	0.000	0.000	0.000
8.400	1.273	7.011	41.31	0.000	0.000	0.000	0.000
8.600	1.293	7.268	47.60	0.000	0.000	0.000	0.000
8.800	1.314	7.528	54.26	0.000	0.000	0.000	0.000
9.000	1.335	7.793	61.26	0.000	0.000	0.000	0.000
9.200	1.356	8.062	68.99	0.000	0.000	0.000	0.000
9.400	1.376	8.336	75.93	0.000	0.000	0.000	0.000
9.600	1.397	8.613	83.50	0.000	0.000	0.000	0.000
9.800	1.418	8.895	91.51	0.000	0.000	0.000	0.000
10.000	1.439	9.180	999.0	0.000	0.000	0.000	0.000

DRAFT

POC 23

Bottom Length: 1339.00 ft.
Bottom Width: 7.00 ft.
Manning's n: 0.035
Channel bottom slope 1: 0.0075 To 1
Channel Left side slope 0: 0.5 To 1
Channel right side slope 2: 0.5 To 1
Discharge Structure
Riser Height: 0 ft.
Riser Diameter: 0 in.
Element Flows To:
Outlet 1 Outlet 2
POC 22

Channel Hydraulic Table

Stage(ft)	Area(ac)	Volume(ac-ft)	Discharge(cfs)	Infilt(cfs)
0.0000	0.215	0.000	0.000	0.000
0.2222	0.222	0.048	2.063	0.000
0.4444	0.228	0.098	6.441	0.000
0.6667	0.235	0.150	12.47	0.000
0.8889	0.242	0.203	19.89	0.000
1.1111	0.249	0.258	28.53	0.000
1.3333	0.256	0.314	38.29	0.000
1.5556	0.263	0.371	49.09	0.000
1.7778	0.269	0.431	60.88	0.000
2.0000	0.276	0.491	73.63	0.000
2.2222	0.283	0.554	87.30	0.000
2.4444	0.290	0.617	101.8	0.000
2.6667	0.297	0.683	117.3	0.000
2.8889	0.304	0.749	133.7	0.000
3.1111	0.310	0.818	150.9	0.000
3.3333	0.317	0.888	169.0	0.000
3.5556	0.324	0.959	187.9	0.000
3.7778	0.331	1.032	207.7	0.000
4.0000	0.338	1.106	228.4	0.000
4.2222	0.345	1.182	249.9	0.000
4.4444	0.351	1.260	272.3	0.000
4.6667	0.358	1.338	295.6	0.000
4.8889	0.365	1.419	319.8	0.000
5.1111	0.372	1.501	344.8	0.000
5.3333	0.379	1.584	370.7	0.000
5.5556	0.386	1.669	397.5	0.000
5.7778	0.392	1.756	425.2	0.000
6.0000	0.399	1.844	453.8	0.000
6.2222	0.406	1.934	483.3	0.000
6.4444	0.413	2.025	513.7	0.000
6.6667	0.420	2.117	545.1	0.000
6.8889	0.427	2.211	577.4	0.000
7.1111	0.433	2.307	610.6	0.000
7.3333	0.440	2.404	644.7	0.000
7.5556	0.447	2.503	679.8	0.000
7.7778	0.454	2.603	715.9	0.000
8.0000	0.461	2.705	752.9	0.000
8.2222	0.468	2.808	790.9	0.000
8.4444	0.474	2.913	829.9	0.000
8.6667	0.481	3.019	869.9	0.000

DRAFT

8.8889	0.488	3.127	910.9	0.000
9.1111	0.495	3.236	952.8	0.000
9.3333	0.502	3.347	995.8	0.000
9.5556	0.509	3.459	1039.	0.000
9.7778	0.515	3.573	1084.	0.000
10.000	0.522	3.688	1130.	0.000
10.222	0.529	3.805	1178.	0.000
10.444	0.536	3.924	1226.	0.000
10.667	0.543	4.044	1275.	0.000
10.889	0.550	4.165	1325.	0.000
11.111	0.556	4.288	1377.	0.000
11.333	0.563	4.413	1429.	0.000
11.556	0.570	4.539	1482.	0.000
11.778	0.577	4.666	1537.	0.000
12.000	0.584	4.795	1593.	0.000
12.222	0.591	4.926	1650.	0.000
12.444	0.597	5.058	1708.	0.000
12.667	0.604	5.191	1767.	0.000
12.889	0.611	5.327	1827.	0.000
13.111	0.618	5.463	1888.	0.000
13.333	0.625	5.601	1951.	0.000
13.556	0.632	5.741	2014.	0.000
13.778	0.638	5.882	2079.	0.000
14.000	0.645	6.025	2145.	0.000
14.222	0.652	6.169	2212.	0.000
14.444	0.659	6.315	2281.	0.000
14.667	0.666	6.462	2350.	0.000
14.889	0.673	6.611	2421.	0.000
15.111	0.679	6.761	2493.	0.000
15.333	0.686	6.913	2566.	0.000
15.556	0.693	7.066	2641.	0.000
15.778	0.700	7.221	2716.	0.000
16.000	0.707	7.378	2793.	0.000
16.222	0.714	7.536	2871.	0.000
16.444	0.720	7.695	2951.	0.000
16.667	0.727	7.856	3032.	0.000
16.889	0.734	8.018	3113.	0.000
17.111	0.741	8.182	3197.	0.000
17.333	0.748	8.348	3281.	0.000
17.556	0.755	8.515	3367.	0.000
17.778	0.761	8.683	3454.	0.000
18.000	0.768	8.854	3543.	0.000
18.222	0.775	9.025	3632.	0.000
18.444	0.782	9.198	3723.	0.000
18.667	0.789	9.373	3816.	0.000
18.889	0.796	9.549	3909.	0.000
19.111	0.802	9.727	4004.	0.000
19.333	0.809	9.906	4101.	0.000
19.556	0.816	10.08	4199.	0.000
19.778	0.823	10.26	4298.	0.000
20.000	0.830	10.45	4398.	0.000
20.222	0.837	10.63	4500.	0.000

DRAFT

HMB 21 (was 23)

Depth: 8.1 ft.
Element Flows To:
Outlet 1 Outlet 2
POC 23

SSD Table Hydraulic Table

Stage (ft)	Area (ac)	Volume (ac-ft)	Manual	NotUsed	NotUsed	NotUsed	NotUsed
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.010	0.100	0.001	0.001	0.000	0.000	0.000	0.000
0.100	0.104	0.010	0.009	0.000	0.000	0.000	0.000
0.200	0.108	0.021	0.025	0.000	0.000	0.000	0.000
0.300	0.112	0.032	0.037	0.000	0.000	0.000	0.000
0.400	0.116	0.044	0.045	0.000	0.000	0.000	0.000
0.500	0.120	0.056	0.053	0.000	0.000	0.000	0.000
0.600	0.124	0.068	0.059	0.000	0.000	0.000	0.000
0.700	0.128	0.081	0.065	0.000	0.000	0.000	0.000
0.800	0.132	0.094	0.070	0.000	0.000	0.000	0.000
0.900	0.135	0.107	0.075	0.000	0.000	0.000	0.000
1.000	0.139	0.121	0.079	0.000	0.000	0.000	0.000
1.100	0.143	0.135	0.083	0.000	0.000	0.000	0.000
1.200	0.147	0.150	0.088	0.000	0.000	0.000	0.000
1.300	0.151	0.165	0.091	0.000	0.000	0.000	0.000
1.400	0.155	0.180	0.095	0.000	0.000	0.000	0.000
1.500	0.159	0.196	0.099	0.000	0.000	0.000	0.000
1.600	0.162	0.212	0.102	0.000	0.000	0.000	0.000
1.700	0.166	0.228	0.106	0.000	0.000	0.000	0.000
1.800	0.170	0.245	0.109	0.000	0.000	0.000	0.000
1.900	0.174	0.262	0.112	0.000	0.000	0.000	0.000
2.000	0.178	0.280	0.115	0.000	0.000	0.000	0.000
2.100	0.182	0.298	0.153	0.000	0.000	0.000	0.000
2.200	0.185	0.316	0.220	0.000	0.000	0.000	0.000
2.300	0.189	0.335	0.292	0.000	0.000	0.000	0.000
2.400	0.193	0.354	0.337	0.000	0.000	0.000	0.000
2.500	0.197	0.373	0.375	0.000	0.000	0.000	0.000
2.600	0.201	0.393	0.577	0.000	0.000	0.000	0.000
2.700	0.204	0.413	0.915	0.000	0.000	0.000	0.000
2.800	0.208	0.434	1.342	0.000	0.000	0.000	0.000
2.900	0.212	0.455	1.841	0.000	0.000	0.000	0.000
3.000	0.216	0.476	2.401	0.000	0.000	0.000	0.000
3.100	0.220	0.498	3.017	0.000	0.000	0.000	0.000
3.200	0.223	0.520	3.684	0.000	0.000	0.000	0.000
3.300	0.227	0.542	4.397	0.000	0.000	0.000	0.000
3.400	0.231	0.565	5.068	0.000	0.000	0.000	0.000
3.500	0.235	0.588	6.370	0.000	0.000	0.000	0.000
3.600	0.238	0.612	8.333	0.000	0.000	0.000	0.000
3.700	0.242	0.636	10.72	0.000	0.000	0.000	0.000
3.800	0.246	0.660	13.45	0.000	0.000	0.000	0.000
3.900	0.250	0.685	16.48	0.000	0.000	0.000	0.000
4.000	0.253	0.710	19.78	0.000	0.000	0.000	0.000
4.100	0.257	0.735	23.32	0.000	0.000	0.000	0.000
4.200	0.261	0.761	27.08	0.000	0.000	0.000	0.000
4.300	0.265	0.787	31.06	0.000	0.000	0.000	0.000
4.400	0.268	0.814	35.24	0.000	0.000	0.000	0.000
4.500	0.272	0.841	39.61	0.000	0.000	0.000	0.000

DRAFT

4.600	0.276	0.868	44.16	0.000	0.000	0.000	0.000
4.700	0.280	0.896	48.88	0.000	0.000	0.000	0.000
4.800	0.283	0.924	53.78	0.000	0.000	0.000	0.000
4.900	0.287	0.952	58.83	0.000	0.000	0.000	0.000
5.000	0.291	0.981	64.05	0.000	0.000	0.000	0.000
5.100	0.294	1.010	69.41	0.000	0.000	0.000	0.000
5.200	0.298	1.040	74.93	0.000	0.000	0.000	0.000
5.300	0.302	1.070	80.59	0.000	0.000	0.000	0.000
5.400	0.306	1.100	86.39	0.000	0.000	0.000	0.000
5.500	0.309	1.131	92.32	0.000	0.000	0.000	0.000
5.600	0.313	1.162	98.39	0.000	0.000	0.000	0.000
5.700	0.317	1.193	104.6	0.000	0.000	0.000	0.000
5.800	0.320	1.225	110.9	0.000	0.000	0.000	0.000
5.900	0.324	1.257	117.4	0.000	0.000	0.000	0.000
6.000	0.328	1.290	124.0	0.000	0.000	0.000	0.000
6.100	0.331	1.323	130.6	0.000	0.000	0.000	0.000
6.200	0.335	1.356	137.5	0.000	0.000	0.000	0.000
6.300	0.339	1.390	144.4	0.000	0.000	0.000	0.000
6.400	0.342	1.424	151.4	0.000	0.000	0.000	0.000
6.500	0.346	1.458	158.6	0.000	0.000	0.000	0.000
6.600	0.350	1.493	165.9	0.000	0.000	0.000	0.000
6.700	0.353	1.528	173.3	0.000	0.000	0.000	0.000
6.800	0.357	1.564	180.7	0.000	0.000	0.000	0.000
6.900	0.361	1.600	188.3	0.000	0.000	0.000	0.000
7.000	0.364	1.636	196.0	0.000	0.000	0.000	0.000
7.100	0.368	1.673	203.8	0.000	0.000	0.000	0.000
7.200	0.372	1.710	211.8	0.000	0.000	0.000	0.000
7.300	0.375	1.747	219.8	0.000	0.000	0.000	0.000
7.400	0.379	1.785	227.9	0.000	0.000	0.000	0.000
7.500	0.382	1.823	236.1	0.000	0.000	0.000	0.000
7.600	0.386	1.862	244.4	0.000	0.000	0.000	0.000
7.700	0.390	1.901	252.8	0.000	0.000	0.000	0.000
7.800	0.393	1.940	261.2	0.000	0.000	0.000	0.000
7.900	0.397	1.980	269.8	0.000	0.000	0.000	0.000
8.000	0.401	2.020	278.5	0.000	0.000	0.000	0.000
8.100	0.600	3.300	999.0	0.000	0.000	0.000	0.000

DRAFT

POC 22

Bottom Length: 2058.00 ft.
Bottom Width: 7.00 ft.
Manning's n: 0.035
Channel bottom slope 1: 0.0087 To 1
Channel Left side slope 0: 0.5 To 1
Channel right side slope 2: 0.5 To 1
Discharge Structure
Riser Height: 0 ft.
Riser Diameter: 0 in.
Element Flows To:
Outlet 1 Outlet 2
DB 7 (was 8)

Channel Hydraulic Table

Stage(ft)	Area(ac)	Volume(ac-ft)	Discharge(cfs)	Infilt(cfs)
0.0000	0.330	0.000	0.000	0.000
0.2222	0.341	0.074	2.222	0.000
0.4444	0.351	0.151	6.937	0.000
0.6667	0.362	0.231	13.43	0.000
0.8889	0.372	0.312	21.42	0.000
1.1111	0.383	0.396	30.73	0.000
1.3333	0.393	0.483	41.24	0.000
1.5556	0.404	0.571	52.87	0.000
1.7778	0.414	0.662	65.57	0.000
2.0000	0.425	0.755	79.30	0.000
2.2222	0.435	0.851	94.03	0.000
2.4444	0.446	0.949	109.7	0.000
2.6667	0.456	1.049	126.3	0.000
2.8889	0.467	1.152	144.0	0.000
3.1111	0.477	1.257	162.5	0.000
3.3333	0.488	1.364	182.0	0.000
3.5556	0.498	1.474	202.4	0.000
3.7778	0.509	1.586	223.7	0.000
4.0000	0.519	1.700	246.0	0.000
4.2222	0.530	1.817	269.2	0.000
4.4444	0.540	1.936	293.3	0.000
4.6667	0.551	2.057	318.4	0.000
4.8889	0.561	2.181	344.4	0.000
5.1111	0.572	2.307	371.3	0.000
5.3333	0.582	2.435	399.3	0.000
5.5556	0.593	2.566	428.1	0.000
5.7778	0.603	2.699	458.0	0.000
6.0000	0.614	2.834	488.8	0.000
6.2222	0.624	2.972	520.6	0.000
6.4444	0.635	3.112	553.3	0.000
6.6667	0.645	3.254	587.1	0.000
6.8889	0.656	3.399	621.9	0.000
7.1111	0.666	3.546	657.6	0.000
7.3333	0.677	3.695	694.4	0.000
7.5556	0.687	3.847	732.2	0.000
7.7778	0.698	4.001	771.1	0.000
8.0000	0.708	4.157	810.9	0.000
8.2222	0.719	4.316	851.9	0.000
8.4444	0.729	4.477	893.9	0.000
8.6667	0.740	4.640	936.9	0.000

DRAFT

8.8889	0.750	4.806	981.0	0.000
9.1111	0.761	4.974	1026.	0.000
9.3333	0.771	5.144	1072.	0.000
9.5556	0.782	5.317	1119.	0.000
9.7778	0.792	5.492	1168.	0.000
10.000	0.803	5.669	1218.	0.000
10.222	0.813	5.849	1268.	0.000
10.444	0.824	6.031	1320.	0.000
10.667	0.834	6.215	1373.	0.000
10.889	0.845	6.402	1427.	0.000
11.111	0.855	6.591	1483.	0.000
11.333	0.866	6.782	1539.	0.000
11.556	0.876	6.976	1597.	0.000
11.778	0.887	7.172	1656.	0.000
12.000	0.897	7.370	1716.	0.000
12.222	0.908	7.571	1777.	0.000
12.444	0.918	7.774	1839.	0.000
12.667	0.929	7.979	1903.	0.000
12.889	0.939	8.187	1968.	0.000
13.111	0.950	8.397	2034.	0.000
13.333	0.960	8.609	2101.	0.000
13.556	0.971	8.824	2170.	0.000
13.778	0.981	9.041	2239.	0.000
14.000	0.992	9.260	2311.	0.000
14.222	1.002	9.482	2383.	0.000
14.444	1.013	9.706	2457.	0.000
14.667	1.023	9.932	2531.	0.000
14.889	1.034	10.16	2608.	0.000
15.111	1.044	10.39	2685.	0.000
15.333	1.055	10.62	2764.	0.000
15.556	1.065	10.86	2844.	0.000
15.778	1.076	11.09	2926.	0.000
16.000	1.086	11.34	3009.	0.000
16.222	1.097	11.58	3093.	0.000
16.444	1.107	11.82	3178.	0.000
16.667	1.118	12.07	3265.	0.000
16.889	1.128	12.32	3353.	0.000
17.111	1.139	12.57	3443.	0.000
17.333	1.149	12.83	3534.	0.000
17.556	1.160	13.08	3626.	0.000
17.778	1.170	13.34	3720.	0.000
18.000	1.181	13.60	3815.	0.000
18.222	1.191	13.87	3912.	0.000
18.444	1.202	14.13	4010.	0.000
18.667	1.212	14.40	4110.	0.000
18.889	1.223	14.67	4211.	0.000
19.111	1.233	14.95	4313.	0.000
19.333	1.244	15.22	4417.	0.000
19.556	1.254	15.50	4522.	0.000
19.778	1.265	15.78	4629.	0.000
20.000	1.275	16.06	4737.	0.000
20.222	1.286	16.35	4847.	0.000

DRAFT

HMB 20 (was 22)

Depth: 10.1 ft.
Element Flows To:
Outlet 1 Outlet 2
DB 7 (was 8)

SSD Table Hydraulic Table

Stage (ft)	Area (ac)	Volume (ac-ft)	Manual	NotUsed	NotUsed	NotUsed	NotUsed
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.010	0.180	0.002	0.001	0.000	0.000	0.000	0.000
0.200	0.195	0.035	0.124	0.000	0.000	0.000	0.000
0.300	0.202	0.055	0.228	0.000	0.000	0.000	0.000
0.400	0.209	0.075	0.323	0.000	0.000	0.000	0.000
0.500	0.216	0.096	0.386	0.000	0.000	0.000	0.000
0.600	0.223	0.118	0.440	0.000	0.000	0.000	0.000
0.700	0.230	0.140	0.488	0.000	0.000	0.000	0.000
0.800	0.236	0.164	0.532	0.000	0.000	0.000	0.000
0.900	0.243	0.187	0.573	0.000	0.000	0.000	0.000
1.000	0.250	0.212	0.610	0.000	0.000	0.000	0.000
1.100	0.257	0.237	0.646	0.000	0.000	0.000	0.000
1.200	0.264	0.263	0.680	0.000	0.000	0.000	0.000
1.300	0.271	0.290	0.712	0.000	0.000	0.000	0.000
1.400	0.278	0.317	0.743	0.000	0.000	0.000	0.000
1.500	0.284	0.345	0.772	0.000	0.000	0.000	0.000
1.600	0.291	0.374	0.801	0.000	0.000	0.000	0.000
1.700	0.298	0.403	0.828	0.000	0.000	0.000	0.000
1.800	0.305	0.433	0.855	0.000	0.000	0.000	0.000
1.900	0.312	0.464	0.880	0.000	0.000	0.000	0.000
2.000	0.319	0.495	0.905	0.000	0.000	0.000	0.000
2.100	0.326	0.527	0.930	0.000	0.000	0.000	0.000
2.200	0.333	0.560	0.954	0.000	0.000	0.000	0.000
2.300	0.339	0.594	0.977	0.000	0.000	0.000	0.000
2.400	0.346	0.628	0.999	0.000	0.000	0.000	0.000
2.500	0.353	0.663	1.022	0.000	0.000	0.000	0.000
2.600	0.360	0.698	1.043	0.000	0.000	0.000	0.000
2.700	0.367	0.735	1.064	0.000	0.000	0.000	0.000
2.800	0.374	0.772	1.085	0.000	0.000	0.000	0.000
2.900	0.381	0.809	1.106	0.000	0.000	0.000	0.000
3.000	0.388	0.848	1.126	0.000	0.000	0.000	0.000
3.100	0.394	0.887	1.145	0.000	0.000	0.000	0.000
3.200	0.401	0.926	1.165	0.000	0.000	0.000	0.000
3.300	0.408	0.967	1.184	0.000	0.000	0.000	0.000
3.400	0.415	1.008	1.203	0.000	0.000	0.000	0.000
3.500	0.422	1.049	1.221	0.000	0.000	0.000	0.000
3.600	0.429	1.092	1.239	0.000	0.000	0.000	0.000
3.700	0.436	1.135	1.257	0.000	0.000	0.000	0.000
3.800	0.443	1.179	1.275	0.000	0.000	0.000	0.000
3.900	0.449	1.223	1.292	0.000	0.000	0.000	0.000
4.000	0.456	1.269	1.309	0.000	0.000	0.000	0.000
4.100	0.463	1.314	1.326	0.000	0.000	0.000	0.000
4.200	0.470	1.361	1.343	0.000	0.000	0.000	0.000
4.300	0.477	1.408	1.360	0.000	0.000	0.000	0.000
4.400	0.484	1.456	1.376	0.000	0.000	0.000	0.000
4.500	0.491	1.505	1.392	0.000	0.000	0.000	0.000
4.600	0.498	1.554	1.408	0.000	0.000	0.000	0.000

DRAFT

4.700	0.504	1.604	1.424	0.000	0.000	0.000	0.000
4.800	0.511	1.655	1.439	0.000	0.000	0.000	0.000
4.900	0.518	1.706	1.455	0.000	0.000	0.000	0.000
5.000	0.525	1.758	1.470	0.000	0.000	0.000	0.000
5.100	0.532	1.811	1.485	0.000	0.000	0.000	0.000
5.200	0.539	1.865	1.500	0.000	0.000	0.000	0.000
5.300	0.546	1.919	1.515	0.000	0.000	0.000	0.000
5.400	0.552	1.974	1.530	0.000	0.000	0.000	0.000
5.500	0.559	2.029	1.544	0.000	0.000	0.000	0.000
5.600	0.566	2.085	1.559	0.000	0.000	0.000	0.000
5.700	0.573	2.142	1.573	0.000	0.000	0.000	0.000
5.800	0.580	2.200	1.587	0.000	0.000	0.000	0.000
5.900	0.587	2.258	1.601	0.000	0.000	0.000	0.000
6.000	0.594	2.317	1.615	0.000	0.000	0.000	0.000
6.100	0.601	2.377	1.629	0.000	0.000	0.000	0.000
6.200	0.607	2.437	1.643	0.000	0.000	0.000	0.000
6.300	0.614	2.498	1.656	0.000	0.000	0.000	0.000
6.400	0.621	2.560	1.670	0.000	0.000	0.000	0.000
6.500	0.628	2.622	1.683	0.000	0.000	0.000	0.000
6.600	0.635	2.685	1.696	0.000	0.000	0.000	0.000
6.700	0.642	2.749	1.709	0.000	0.000	0.000	0.000
6.800	0.649	2.814	1.722	0.000	0.000	0.000	0.000
6.900	0.656	2.879	1.735	0.000	0.000	0.000	0.000
7.000	0.662	2.945	1.748	0.000	0.000	0.000	0.000
7.100	0.669	3.011	1.761	0.000	0.000	0.000	0.000
7.200	0.676	3.078	1.774	0.000	0.000	0.000	0.000
7.300	0.683	3.146	1.786	0.000	0.000	0.000	0.000
7.400	0.690	3.215	1.799	0.000	0.000	0.000	0.000
7.500	0.697	3.284	1.811	0.000	0.000	0.000	0.000
7.600	0.704	3.354	1.823	0.000	0.000	0.000	0.000
7.700	0.711	3.425	1.836	0.000	0.000	0.000	0.000
7.800	0.717	3.496	1.848	0.000	0.000	0.000	0.000
7.900	0.724	3.568	1.860	0.000	0.000	0.000	0.000
8.000	0.731	3.641	1.872	0.000	0.000	0.000	0.000
8.100	0.738	3.714	1.884	0.000	0.000	0.000	0.000
8.200	0.745	3.789	1.895	0.000	0.000	0.000	0.000
8.300	0.752	3.863	1.907	0.000	0.000	0.000	0.000
8.400	0.759	3.939	1.919	0.000	0.000	0.000	0.000
8.500	0.765	4.015	1.931	0.000	0.000	0.000	0.000
8.600	0.772	4.092	1.942	0.000	0.000	0.000	0.000
8.700	0.779	4.169	1.954	0.000	0.000	0.000	0.000
8.800	0.786	4.248	1.965	0.000	0.000	0.000	0.000
8.900	0.793	4.327	1.976	0.000	0.000	0.000	0.000
9.000	0.800	4.406	1.988	0.000	0.000	0.000	0.000
9.200	0.814	4.568	2.010	0.000	0.000	0.000	0.000
9.400	0.827	4.732	2.032	0.000	0.000	0.000	0.000
9.600	0.841	4.898	2.054	0.000	0.000	0.000	0.000
9.800	0.855	5.068	2.076	0.000	0.000	0.000	0.000
10.000	0.869	5.240	2.097	0.000	0.000	0.000	0.000
10.10	0.882	5.415	999.0	0.000	0.000	0.000	0.000

DRAFT

POC 28

Bottom Length: 1673.00 ft.
Bottom Width: 8.00 ft.
Manning's n: 0.035
Channel bottom slope 1: 0.0442 To 1
Channel Left side slope 0: 0.5 To 1
Channel right side slope 2: 0.5 To 1
Discharge Structure
Riser Height: 0 ft.
Riser Diameter: 0 in.
Element Flows To:
Outlet 1 Outlet 2
POC 21 SF

Channel Hydraulic Table

Stage(ft)	Area(ac)	Volume(ac-ft)	Discharge(cfs)	Infilt(cfs)
0.0000	0.307	0.000	0.000	0.000
0.0222	0.308	0.006	0.125	0.000
0.0444	0.309	0.013	0.397	0.000
0.0667	0.309	0.020	0.780	0.000
0.0889	0.310	0.027	1.258	0.000
0.1111	0.311	0.034	1.822	0.000
0.1333	0.312	0.041	2.465	0.000
0.1556	0.313	0.048	3.182	0.000
0.1778	0.314	0.055	3.968	0.000
0.2000	0.314	0.062	4.821	0.000
0.2222	0.315	0.069	5.738	0.000
0.2444	0.316	0.076	6.715	0.000
0.2667	0.317	0.083	7.750	0.000
0.2889	0.318	0.090	8.843	0.000
0.3111	0.319	0.097	9.990	0.000
0.3333	0.320	0.104	11.19	0.000
0.3556	0.320	0.111	12.44	0.000
0.3778	0.321	0.118	13.74	0.000
0.4000	0.322	0.126	15.09	0.000
0.4222	0.323	0.133	16.49	0.000
0.4444	0.324	0.140	17.94	0.000
0.4667	0.325	0.147	19.43	0.000
0.4889	0.326	0.154	20.97	0.000
0.5111	0.326	0.162	22.55	0.000
0.5333	0.327	0.169	24.17	0.000
0.5556	0.328	0.176	25.84	0.000
0.5778	0.329	0.183	27.55	0.000
0.6000	0.330	0.191	29.30	0.000
0.6222	0.331	0.198	31.09	0.000
0.6444	0.332	0.206	32.92	0.000
0.6667	0.332	0.213	34.79	0.000
0.6889	0.333	0.220	36.70	0.000
0.7111	0.334	0.228	38.64	0.000
0.7333	0.335	0.235	40.63	0.000
0.7556	0.336	0.243	42.65	0.000
0.7778	0.337	0.250	44.71	0.000
0.8000	0.338	0.258	46.80	0.000
0.8222	0.338	0.265	48.93	0.000
0.8444	0.339	0.273	51.09	0.000
0.8667	0.340	0.280	53.29	0.000

DRAFT

0.8889	0.341	0.288	55.53	0.000
0.9111	0.342	0.295	57.80	0.000
0.9333	0.343	0.303	60.10	0.000
0.9556	0.344	0.311	62.44	0.000
0.9778	0.344	0.318	64.80	0.000
1.0000	0.345	0.326	67.21	0.000
1.0222	0.346	0.334	69.64	0.000
1.0444	0.347	0.341	72.11	0.000
1.0667	0.348	0.349	74.61	0.000
1.0889	0.349	0.357	77.14	0.000
1.1111	0.349	0.365	79.70	0.000
1.1333	0.350	0.372	82.29	0.000
1.1556	0.351	0.380	84.92	0.000
1.1778	0.352	0.388	87.57	0.000
1.2000	0.353	0.396	90.25	0.000
1.2222	0.354	0.404	92.97	0.000
1.2444	0.355	0.412	95.72	0.000
1.2667	0.355	0.420	98.49	0.000
1.2889	0.356	0.427	101.3	0.000
1.3111	0.357	0.435	104.1	0.000
1.3333	0.358	0.443	107.0	0.000
1.3556	0.359	0.451	109.8	0.000
1.3778	0.360	0.459	112.8	0.000
1.4000	0.361	0.467	115.7	0.000
1.4222	0.361	0.475	118.7	0.000
1.4444	0.362	0.483	121.7	0.000
1.4667	0.363	0.492	124.7	0.000
1.4889	0.364	0.500	127.8	0.000
1.5111	0.365	0.508	130.9	0.000
1.5333	0.366	0.516	134.0	0.000
1.5556	0.367	0.524	137.2	0.000
1.5778	0.367	0.532	140.3	0.000
1.6000	0.368	0.540	143.5	0.000
1.6222	0.369	0.549	146.8	0.000
1.6444	0.370	0.557	150.0	0.000
1.6667	0.371	0.565	153.3	0.000
1.6889	0.372	0.573	156.6	0.000
1.7111	0.373	0.582	159.9	0.000
1.7333	0.373	0.590	163.3	0.000
1.7556	0.374	0.598	166.7	0.000
1.7778	0.375	0.607	170.1	0.000
1.8000	0.376	0.615	173.6	0.000
1.8222	0.377	0.623	177.0	0.000
1.8444	0.378	0.632	180.5	0.000
1.8667	0.379	0.640	184.0	0.000
1.8889	0.379	0.648	187.6	0.000
1.9111	0.380	0.657	191.2	0.000
1.9333	0.381	0.665	194.8	0.000
1.9556	0.382	0.674	198.4	0.000
1.9778	0.383	0.682	202.0	0.000
2.0000	0.384	0.691	205.7	0.000
2.0222	0.385	0.699	209.4	0.000

DRAFT

HMB 26 (was 28)

Depth: 18.7 ft.
Element Flows To:
Outlet 1 Outlet 2
POC 28

SSD Table Hydraulic Table

Stage (ft)	Area (ac)	Volume (ac-ft)	Manual	NotUsed	NotUsed	NotUsed	NotUsed
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.010	0.320	0.003	0.001	0.000	0.000	0.000	0.000
0.100	0.323	0.035	0.026	0.000	0.000	0.000	0.000
0.300	0.332	0.100	0.126	0.000	0.000	0.000	0.000
0.500	0.341	0.167	0.184	0.000	0.000	0.000	0.000
0.700	0.350	0.236	0.228	0.000	0.000	0.000	0.000
0.900	0.359	0.306	0.265	0.000	0.000	0.000	0.000
1.100	0.369	0.379	0.297	0.000	0.000	0.000	0.000
1.300	0.378	0.453	0.326	0.000	0.000	0.000	0.000
1.500	0.387	0.529	0.353	0.000	0.000	0.000	0.000
1.700	0.396	0.607	0.378	0.000	0.000	0.000	0.000
1.900	0.405	0.687	0.401	0.000	0.000	0.000	0.000
2.100	0.414	0.769	0.423	0.000	0.000	0.000	0.000
2.300	0.423	0.852	0.444	0.000	0.000	0.000	0.000
2.500	0.433	0.938	0.464	0.000	0.000	0.000	0.000
2.700	0.442	1.025	0.483	0.000	0.000	0.000	0.000
2.900	0.451	1.114	0.501	0.000	0.000	0.000	0.000
3.100	0.460	1.205	0.519	0.000	0.000	0.000	0.000
3.300	0.469	1.297	0.536	0.000	0.000	0.000	0.000
3.500	0.478	1.392	0.553	0.000	0.000	0.000	0.000
3.700	0.487	1.488	0.668	0.000	0.000	0.000	0.000
3.900	0.497	1.586	0.866	0.000	0.000	0.000	0.000
4.100	0.506	1.686	1.116	0.000	0.000	0.000	0.000
4.300	0.515	1.788	1.409	0.000	0.000	0.000	0.000
4.500	0.524	1.892	1.739	0.000	0.000	0.000	0.000
4.700	0.533	1.998	2.103	0.000	0.000	0.000	0.000
4.900	0.542	2.105	2.496	0.000	0.000	0.000	0.000
5.100	0.552	2.214	2.918	0.000	0.000	0.000	0.000
5.300	0.561	2.325	3.365	0.000	0.000	0.000	0.000
5.500	0.570	2.438	3.837	0.000	0.000	0.000	0.000
5.700	0.579	2.553	4.227	0.000	0.000	0.000	0.000
5.900	0.588	2.670	4.521	0.000	0.000	0.000	0.000
6.100	0.597	2.788	4.901	0.000	0.000	0.000	0.000
6.300	0.606	2.908	5.602	0.000	0.000	0.000	0.000
6.500	0.616	3.030	6.477	0.000	0.000	0.000	0.000
6.700	0.625	3.154	7.483	0.000	0.000	0.000	0.000
6.900	0.634	3.280	8.599	0.000	0.000	0.000	0.000
7.100	0.643	3.408	9.813	0.000	0.000	0.000	0.000
7.300	0.652	3.537	11.11	0.000	0.000	0.000	0.000
7.500	0.661	3.669	12.50	0.000	0.000	0.000	0.000
7.700	0.671	3.802	13.95	0.000	0.000	0.000	0.000
7.900	0.680	3.937	15.48	0.000	0.000	0.000	0.000
8.100	0.689	4.073	17.07	0.000	0.000	0.000	0.000
8.300	0.698	4.212	18.73	0.000	0.000	0.000	0.000
8.500	0.707	4.353	20.45	0.000	0.000	0.000	0.000
8.700	0.716	4.495	22.23	0.000	0.000	0.000	0.000
8.900	0.725	4.639	24.07	0.000	0.000	0.000	0.000

DRAFT

9.100	0.735	4.785	25.96	0.000	0.000	0.000	0.000
9.300	0.744	4.933	27.91	0.000	0.000	0.000	0.000
9.500	0.753	5.083	29.90	0.000	0.000	0.000	0.000
9.700	0.762	5.234	31.95	0.000	0.000	0.000	0.000
9.900	0.771	5.387	34.05	0.000	0.000	0.000	0.000
10.10	0.780	5.543	36.19	0.000	0.000	0.000	0.000
10.30	0.789	5.700	38.38	0.000	0.000	0.000	0.000
10.50	0.799	5.859	40.62	0.000	0.000	0.000	0.000
10.70	0.808	6.019	42.90	0.000	0.000	0.000	0.000
10.90	0.817	6.182	45.23	0.000	0.000	0.000	0.000
11.10	0.826	6.346	47.60	0.000	0.000	0.000	0.000
11.30	0.835	6.512	53.67	0.000	0.000	0.000	0.000
11.50	0.844	6.680	61.79	0.000	0.000	0.000	0.000
11.70	0.854	6.850	71.79	0.000	0.000	0.000	0.000
11.90	0.863	7.022	83.30	0.000	0.000	0.000	0.000
12.10	0.872	7.196	96.12	0.000	0.000	0.000	0.000
12.30	0.881	7.371	110.1	0.000	0.000	0.000	0.000
12.50	0.890	7.548	125.1	0.000	0.000	0.000	0.000
12.70	0.899	7.727	141.2	0.000	0.000	0.000	0.000
12.90	0.908	7.908	158.1	0.000	0.000	0.000	0.000
13.10	0.918	8.091	175.9	0.000	0.000	0.000	0.000
13.30	0.927	8.276	194.5	0.000	0.000	0.000	0.000
13.50	0.936	8.462	213.9	0.000	0.000	0.000	0.000
13.70	0.945	8.650	234.1	0.000	0.000	0.000	0.000
13.90	0.954	8.840	255.0	0.000	0.000	0.000	0.000
14.10	0.963	9.032	276.6	0.000	0.000	0.000	0.000
14.30	0.973	9.226	298.8	0.000	0.000	0.000	0.000
14.50	0.982	9.422	321.7	0.000	0.000	0.000	0.000
14.70	0.991	9.619	345.2	0.000	0.000	0.000	0.000
14.90	1.000	9.819	369.4	0.000	0.000	0.000	0.000
15.10	1.009	10.02	394.1	0.000	0.000	0.000	0.000
15.30	1.018	10.22	419.5	0.000	0.000	0.000	0.000
15.50	1.027	10.43	445.4	0.000	0.000	0.000	0.000
15.70	1.037	10.63	471.8	0.000	0.000	0.000	0.000
15.90	1.046	10.84	498.8	0.000	0.000	0.000	0.000
16.10	1.055	11.05	526.4	0.000	0.000	0.000	0.000
16.30	1.064	11.27	554.4	0.000	0.000	0.000	0.000
16.50	1.073	11.48	583.0	0.000	0.000	0.000	0.000
16.70	1.082	11.70	612.1	0.000	0.000	0.000	0.000
16.90	1.091	11.91	641.7	0.000	0.000	0.000	0.000
17.10	1.101	12.13	671.7	0.000	0.000	0.000	0.000
17.30	1.110	12.35	702.3	0.000	0.000	0.000	0.000
17.50	1.119	12.58	733.3	0.000	0.000	0.000	0.000
17.70	1.128	12.80	764.8	0.000	0.000	0.000	0.000
17.90	1.137	13.03	796.7	0.000	0.000	0.000	0.000
18.10	1.146	13.26	829.1	0.000	0.000	0.000	0.000
18.30	1.156	13.49	861.9	0.000	0.000	0.000	0.000
18.50	1.165	13.72	895.2	0.000	0.000	0.000	0.000
18.70	1.174	13.95	9999	0.000	0.000	0.000	0.000

DRAFT

HMB 25 (was 27)

Depth: 8 ft.
Element Flows To:
Outlet 1 Outlet 2
DB 9 (was 10)

SSD Table Hydraulic Table

Stage (ft)	Area (ac)	Volume (ac-ft)	Manual	NotUsed	NotUsed	NotUsed	NotUsed
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.100	0.350	0.035	0.035	0.000	0.000	0.000	0.000
0.200	0.360	0.070	0.099	0.000	0.000	0.000	0.000
0.300	0.364	0.107	0.182	0.000	0.000	0.000	0.000
0.400	0.369	0.144	0.258	0.000	0.000	0.000	0.000
0.500	0.373	0.181	0.309	0.000	0.000	0.000	0.000
0.600	0.377	0.219	0.352	0.000	0.000	0.000	0.000
0.700	0.382	0.257	0.391	0.000	0.000	0.000	0.000
0.800	0.386	0.296	0.426	0.000	0.000	0.000	0.000
0.900	0.391	0.335	0.458	0.000	0.000	0.000	0.000
1.000	0.395	0.374	0.488	0.000	0.000	0.000	0.000
1.100	0.400	0.414	0.517	0.000	0.000	0.000	0.000
1.200	0.404	0.454	0.544	0.000	0.000	0.000	0.000
1.300	0.409	0.495	0.570	0.000	0.000	0.000	0.000
1.400	0.413	0.536	0.594	0.000	0.000	0.000	0.000
1.500	0.418	0.578	0.618	0.000	0.000	0.000	0.000
1.600	0.422	0.620	0.641	0.000	0.000	0.000	0.000
1.700	0.426	0.662	0.662	0.000	0.000	0.000	0.000
1.800	0.431	0.705	0.684	0.000	0.000	0.000	0.000
1.900	0.435	0.749	0.704	0.000	0.000	0.000	0.000
2.000	0.440	0.793	0.724	0.000	0.000	0.000	0.000
2.100	0.444	0.837	0.744	0.000	0.000	0.000	0.000
2.200	0.449	0.881	0.763	0.000	0.000	0.000	0.000
2.300	0.453	0.927	0.781	0.000	0.000	0.000	0.000
2.400	0.457	0.972	0.800	0.000	0.000	0.000	0.000
2.500	0.462	1.018	0.817	0.000	0.000	0.000	0.000
2.600	0.466	1.064	0.835	0.000	0.000	0.000	0.000
2.700	0.471	1.111	0.852	0.000	0.000	0.000	0.000
2.800	0.475	1.158	0.868	0.000	0.000	0.000	0.000
2.900	0.479	1.206	0.885	0.000	0.000	0.000	0.000
3.000	0.484	1.254	0.901	0.000	0.000	0.000	0.000
3.100	0.488	1.303	0.916	0.000	0.000	0.000	0.000
3.200	0.493	1.352	0.932	0.000	0.000	0.000	0.000
3.300	0.497	1.401	0.947	0.000	0.000	0.000	0.000
3.400	0.501	1.451	0.962	0.000	0.000	0.000	0.000
3.500	0.506	1.501	0.977	0.000	0.000	0.000	0.000
3.600	0.510	1.552	0.991	0.000	0.000	0.000	0.000
3.700	0.514	1.603	1.006	0.000	0.000	0.000	0.000
3.800	0.519	1.655	1.020	0.000	0.000	0.000	0.000
3.900	0.523	1.707	1.034	0.000	0.000	0.000	0.000
4.000	0.527	1.759	1.047	0.000	0.000	0.000	0.000
4.100	0.532	1.812	1.061	0.000	0.000	0.000	0.000
4.200	0.536	1.865	1.074	0.000	0.000	0.000	0.000
4.300	0.540	1.919	1.088	0.000	0.000	0.000	0.000
4.400	0.545	1.973	1.101	0.000	0.000	0.000	0.000
4.500	0.549	2.028	1.114	0.000	0.000	0.000	0.000
4.600	0.553	2.083	1.126	0.000	0.000	0.000	0.000

DRAFT

4.700	0.558	2.138	1.139	0.000	0.000	0.000	0.000
4.800	0.562	2.194	1.152	0.000	0.000	0.000	0.000
4.900	0.566	2.250	1.164	0.000	0.000	0.000	0.000
5.000	0.571	2.307	1.176	0.000	0.000	0.000	0.000
5.100	0.575	2.364	1.188	0.000	0.000	0.000	0.000
5.200	0.579	2.422	1.200	0.000	0.000	0.000	0.000
5.300	0.584	2.480	1.212	0.000	0.000	0.000	0.000
5.400	0.588	2.539	1.224	0.000	0.000	0.000	0.000
5.500	0.592	2.598	1.236	0.000	0.000	0.000	0.000
5.600	0.597	2.657	1.247	0.000	0.000	0.000	0.000
5.700	0.601	2.717	1.258	0.000	0.000	0.000	0.000
5.800	0.605	2.777	1.270	0.000	0.000	0.000	0.000
5.900	0.609	2.837	1.281	0.000	0.000	0.000	0.000
6.000	0.614	2.899	1.292	0.000	0.000	0.000	0.000
6.100	0.618	2.960	1.303	0.000	0.000	0.000	0.000
6.200	0.622	3.022	1.314	0.000	0.000	0.000	0.000
6.300	0.627	3.084	1.325	0.000	0.000	0.000	0.000
6.400	0.631	3.147	1.336	0.000	0.000	0.000	0.000
6.500	0.635	3.210	1.346	0.000	0.000	0.000	0.000
6.600	0.639	3.274	1.357	0.000	0.000	0.000	0.000
6.700	0.644	3.338	1.367	0.000	0.000	0.000	0.000
6.800	0.648	3.403	1.378	0.000	0.000	0.000	0.000
6.900	0.652	3.468	1.388	0.000	0.000	0.000	0.000
7.000	0.656	3.533	1.399	0.000	0.000	0.000	0.000
7.100	0.661	3.599	1.409	0.000	0.000	0.000	0.000
7.200	0.665	3.665	1.419	0.000	0.000	0.000	0.000
7.300	0.669	3.732	1.429	0.000	0.000	0.000	0.000
7.400	0.673	3.799	1.439	0.000	0.000	0.000	0.000
7.500	0.677	3.867	1.449	0.000	0.000	0.000	0.000
7.600	0.682	3.935	1.459	0.000	0.000	0.000	0.000
7.700	0.686	4.003	1.679	0.000	0.000	0.000	0.000
7.800	0.690	4.072	2.074	0.000	0.000	0.000	0.000
7.900	0.694	4.141	2.582	0.000	0.000	0.000	0.000
8.000	0.699	4.211	999.0	0.000	0.000	0.000	0.000

DRAFT

POC 25

Bottom Length: 2050.00 ft.
Bottom Width: 5.00 ft.
Manning's n: 0.035
Channel bottom slope 1: 0.0224 To 1
Channel Left side slope 0: 0.5 To 1
Channel right side slope 2: 0.5 To 1
Discharge Structure
Riser Height: 0 ft.
Riser Diameter: 0 in.
Element Flows To:
Outlet 1 Outlet 2
POC 21

Channel Hydraulic Table

Stage(ft)	Area(ac)	Volume(ac-ft)	Discharge(cfs)	Infilt(cfs)
0.0000	0.235	0.000	0.000	0.000
0.1111	0.240	0.026	0.806	0.000
0.2222	0.245	0.053	2.529	0.000
0.3333	0.251	0.081	4.914	0.000
0.4444	0.256	0.109	7.856	0.000
0.5556	0.261	0.138	11.28	0.000
0.6667	0.266	0.167	15.16	0.000
0.7778	0.271	0.197	19.45	0.000
0.8889	0.277	0.227	24.13	0.000
1.0000	0.282	0.258	29.18	0.000
1.1111	0.287	0.290	34.58	0.000
1.2222	0.292	0.322	40.33	0.000
1.3333	0.298	0.355	46.41	0.000
1.4444	0.303	0.389	52.81	0.000
1.5556	0.308	0.423	59.53	0.000
1.6667	0.313	0.457	66.57	0.000
1.7778	0.319	0.492	73.91	0.000
1.8889	0.324	0.528	81.56	0.000
2.0000	0.329	0.564	89.51	0.000
2.1111	0.334	0.601	97.77	0.000
2.2222	0.339	0.639	106.3	0.000
2.3333	0.345	0.677	115.1	0.000
2.4444	0.350	0.715	124.3	0.000
2.5556	0.355	0.755	133.7	0.000
2.6667	0.360	0.794	143.5	0.000
2.7778	0.366	0.835	153.5	0.000
2.8889	0.371	0.876	163.9	0.000
3.0000	0.376	0.917	174.5	0.000
3.1111	0.381	0.959	185.5	0.000
3.2222	0.387	1.002	196.7	0.000
3.3333	0.392	1.045	208.3	0.000
3.4444	0.397	1.089	220.1	0.000
3.5556	0.402	1.134	232.3	0.000
3.6667	0.407	1.179	244.7	0.000
3.7778	0.413	1.224	257.5	0.000
3.8889	0.418	1.271	270.5	0.000
4.0000	0.423	1.317	283.9	0.000
4.1111	0.428	1.365	297.6	0.000
4.2222	0.434	1.413	311.6	0.000
4.3333	0.439	1.461	325.9	0.000

DRAFT

4.4444	0.444	1.510	340.5	0.000
4.5556	0.449	1.560	355.5	0.000
4.6667	0.455	1.610	370.7	0.000
4.7778	0.460	1.661	386.3	0.000
4.8889	0.465	1.712	402.2	0.000
5.0000	0.470	1.764	418.4	0.000
5.1111	0.475	1.817	434.9	0.000
5.2222	0.481	1.870	451.8	0.000
5.3333	0.486	1.924	469.0	0.000
5.4444	0.491	1.978	486.5	0.000
5.5556	0.496	2.033	504.4	0.000
5.6667	0.502	2.089	522.6	0.000
5.7778	0.507	2.145	541.1	0.000
5.8889	0.512	2.201	560.0	0.000
6.0000	0.517	2.259	579.2	0.000
6.1111	0.523	2.316	598.7	0.000
6.2222	0.528	2.375	618.6	0.000
6.3333	0.533	2.434	638.8	0.000
6.4444	0.538	2.493	659.4	0.000
6.5556	0.543	2.554	680.3	0.000
6.6667	0.549	2.614	701.6	0.000
6.7778	0.554	2.676	723.2	0.000
6.8889	0.559	2.737	745.2	0.000
7.0000	0.564	2.800	767.5	0.000
7.1111	0.570	2.863	790.2	0.000
7.2222	0.575	2.927	813.3	0.000
7.3333	0.580	2.991	836.7	0.000
7.4444	0.585	3.056	860.5	0.000
7.5556	0.591	3.121	884.6	0.000
7.6667	0.596	3.187	909.1	0.000
7.7778	0.601	3.254	934.0	0.000
7.8889	0.606	3.321	959.2	0.000
8.0000	0.611	3.388	984.8	0.000
8.1111	0.617	3.457	1010.	0.000
8.2222	0.622	3.525	1037.	0.000
8.3333	0.627	3.595	1063.	0.000
8.4444	0.632	3.665	1091.	0.000
8.5556	0.638	3.736	1118.	0.000
8.6667	0.643	3.807	1146.	0.000
8.7778	0.648	3.878	1174.	0.000
8.8889	0.653	3.951	1203.	0.000
9.0000	0.659	4.024	1232.	0.000
9.1111	0.664	4.097	1261.	0.000
9.2222	0.669	4.171	1291.	0.000
9.3333	0.674	4.246	1322.	0.000
9.4444	0.679	4.321	1352.	0.000
9.5556	0.685	4.397	1383.	0.000
9.6667	0.690	4.474	1415.	0.000
9.7778	0.695	4.551	1446.	0.000
9.8889	0.700	4.628	1479.	0.000
10.000	0.706	4.706	1511.	0.000
10.111	0.711	4.785	1544.	0.000

DRAFT

HMB 23 (was 25)

Depth: 9 ft.
Element Flows To:
Outlet 1 Outlet 2
POC 25

SSD Table Hydraulic Table

Stage (ft)	Area (ac)	Volume (ac-ft)	Manual	NotUsed	NotUsed	NotUsed	NotUsed
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.010	0.590	0.006	0.001	0.000	0.000	0.000	0.000
0.100	0.602	0.057	0.026	0.000	0.000	0.000	0.000
0.200	0.613	0.118	0.074	0.000	0.000	0.000	0.000
0.300	0.624	0.180	0.126	0.000	0.000	0.000	0.000
0.400	0.635	0.242	0.158	0.000	0.000	0.000	0.000
0.500	0.645	0.306	0.184	0.000	0.000	0.000	0.000
0.600	0.656	0.371	0.207	0.000	0.000	0.000	0.000
0.700	0.667	0.437	0.228	0.000	0.000	0.000	0.000
0.800	0.678	0.504	0.247	0.000	0.000	0.000	0.000
0.900	0.689	0.573	0.265	0.000	0.000	0.000	0.000
1.000	0.700	0.642	0.281	0.000	0.000	0.000	0.000
1.100	0.711	0.712	0.297	0.000	0.000	0.000	0.000
1.200	0.722	0.784	0.347	0.000	0.000	0.000	0.000
1.300	0.733	0.856	0.425	0.000	0.000	0.000	0.000
1.400	0.744	0.930	0.522	0.000	0.000	0.000	0.000
1.500	0.755	1.005	0.634	0.000	0.000	0.000	0.000
1.600	0.766	1.081	0.758	0.000	0.000	0.000	0.000
1.700	0.777	1.158	0.894	0.000	0.000	0.000	0.000
1.800	0.788	1.236	1.037	0.000	0.000	0.000	0.000
1.900	0.799	1.315	1.132	0.000	0.000	0.000	0.000
2.000	0.810	1.395	1.218	0.000	0.000	0.000	0.000
2.100	0.821	1.476	1.297	0.000	0.000	0.000	0.000
2.200	0.832	1.559	1.370	0.000	0.000	0.000	0.000
2.300	0.842	1.642	1.440	0.000	0.000	0.000	0.000
2.400	0.853	1.727	1.506	0.000	0.000	0.000	0.000
2.500	0.864	1.813	1.569	0.000	0.000	0.000	0.000
2.600	0.875	1.899	1.629	0.000	0.000	0.000	0.000
2.700	0.886	1.987	1.687	0.000	0.000	0.000	0.000
2.800	0.897	2.076	1.743	0.000	0.000	0.000	0.000
2.900	0.908	2.166	1.797	0.000	0.000	0.000	0.000
3.000	0.919	2.257	1.850	0.000	0.000	0.000	0.000
3.100	0.930	2.349	1.900	0.000	0.000	0.000	0.000
3.200	0.941	2.443	1.950	0.000	0.000	0.000	0.000
3.300	0.951	2.537	1.998	0.000	0.000	0.000	0.000
3.400	0.962	2.633	2.045	0.000	0.000	0.000	0.000
3.500	0.973	2.729	2.091	0.000	0.000	0.000	0.000
3.600	0.984	2.827	2.136	0.000	0.000	0.000	0.000
3.700	0.995	2.926	2.180	0.000	0.000	0.000	0.000
3.800	1.006	3.025	2.223	0.000	0.000	0.000	0.000
3.900	1.017	3.126	2.265	0.000	0.000	0.000	0.000
4.000	1.027	3.228	2.307	0.000	0.000	0.000	0.000
4.100	1.038	3.331	2.347	0.000	0.000	0.000	0.000
4.200	1.049	3.436	2.387	0.000	0.000	0.000	0.000
4.300	1.060	3.541	2.427	0.000	0.000	0.000	0.000
4.400	1.071	3.647	2.465	0.000	0.000	0.000	0.000
4.500	1.082	3.755	2.503	0.000	0.000	0.000	0.000

DRAFT

4.600	1.092	3.863	2.541	0.000	0.000	0.000	0.000
4.700	1.103	3.973	2.578	0.000	0.000	0.000	0.000
4.800	1.114	4.084	2.614	0.000	0.000	0.000	0.000
4.900	1.125	4.195	2.650	0.000	0.000	0.000	0.000
5.000	1.136	4.308	2.685	0.000	0.000	0.000	0.000
5.100	1.147	4.422	2.720	0.000	0.000	0.000	0.000
5.200	1.157	4.537	2.755	0.000	0.000	0.000	0.000
5.300	1.168	4.653	2.789	0.000	0.000	0.000	0.000
5.400	1.179	4.771	2.822	0.000	0.000	0.000	0.000
5.500	1.190	4.889	2.855	0.000	0.000	0.000	0.000
5.600	1.201	5.009	2.888	0.000	0.000	0.000	0.000
5.700	1.211	5.129	2.921	0.000	0.000	0.000	0.000
5.800	1.222	5.251	2.953	0.000	0.000	0.000	0.000
5.900	1.233	5.373	2.985	0.000	0.000	0.000	0.000
6.000	1.244	5.497	3.016	0.000	0.000	0.000	0.000
6.100	1.254	5.622	3.047	0.000	0.000	0.000	0.000
6.200	1.265	5.748	3.078	0.000	0.000	0.000	0.000
6.300	1.276	5.875	3.108	0.000	0.000	0.000	0.000
6.400	1.287	6.003	3.138	0.000	0.000	0.000	0.000
6.500	1.298	6.132	3.168	0.000	0.000	0.000	0.000
6.600	1.308	6.263	3.198	0.000	0.000	0.000	0.000
6.700	1.319	6.394	3.227	0.000	0.000	0.000	0.000
6.800	1.330	6.527	3.256	0.000	0.000	0.000	0.000
6.900	1.341	6.660	3.285	0.000	0.000	0.000	0.000
7.000	1.351	6.795	3.314	0.000	0.000	0.000	0.000
7.200	1.373	7.068	3.370	0.000	0.000	0.000	0.000
7.400	1.394	7.345	3.425	0.000	0.000	0.000	0.000
7.600	1.416	7.626	3.480	0.000	0.000	0.000	0.000
7.800	1.437	7.912	3.534	0.000	0.000	0.000	0.000
8.000	1.459	8.202	3.586	0.000	0.000	0.000	0.000
8.200	1.480	8.496	3.639	0.000	0.000	0.000	0.000
8.400	1.501	8.795	3.690	0.000	0.000	0.000	0.000
8.600	1.523	9.098	3.741	0.000	0.000	0.000	0.000
8.800	1.544	9.406	3.790	0.000	0.000	0.000	0.000

DRAFT

POC 21

Bottom Length: 3338.00 ft.
Bottom Width: 10.00 ft.
Manning's n: 0.035
Channel bottom slope 1: 0.0162 To 1
Channel Left side slope 0: 0.5 To 1
Channel right side slope 2: 0.5 To 1
Discharge Structure
Riser Height: 0 ft.
Riser Diameter: 0 in.
Element Flows To:
Outlet 1 Outlet 2
DB 6 (was 7)

Channel Hydraulic Table

Stage(ft)	Area(ac)	Volume(ac-ft)	Discharge(cfs)	Infilt(cfs)
0.0000	0.766	0.000	0.000	0.000
0.0444	0.769	0.034	0.301	0.000
0.0889	0.773	0.068	0.953	0.000
0.1333	0.776	0.102	1.869	0.000
0.1778	0.779	0.137	3.011	0.000
0.2222	0.783	0.172	4.356	0.000
0.2667	0.786	0.207	5.888	0.000
0.3111	0.790	0.242	7.593	0.000
0.3556	0.793	0.277	9.462	0.000
0.4000	0.797	0.312	11.48	0.000
0.4444	0.800	0.348	13.65	0.000
0.4889	0.803	0.383	15.97	0.000
0.5333	0.807	0.419	18.42	0.000
0.5778	0.810	0.455	21.00	0.000
0.6222	0.814	0.491	23.70	0.000
0.6667	0.817	0.527	26.54	0.000
0.7111	0.820	0.564	29.49	0.000
0.7556	0.824	0.600	32.55	0.000
0.8000	0.827	0.637	35.73	0.000
0.8444	0.831	0.674	39.02	0.000
0.8889	0.834	0.711	42.42	0.000
0.9333	0.837	0.748	45.92	0.000
0.9778	0.841	0.785	49.53	0.000
1.0222	0.844	0.823	53.24	0.000
1.0667	0.848	0.861	57.05	0.000
1.1111	0.851	0.898	60.95	0.000
1.1556	0.854	0.936	64.95	0.000
1.2000	0.858	0.974	69.05	0.000
1.2444	0.861	1.013	73.24	0.000
1.2889	0.865	1.051	77.52	0.000
1.3333	0.868	1.089	81.89	0.000
1.3778	0.871	1.128	86.35	0.000
1.4222	0.875	1.167	90.90	0.000
1.4667	0.878	1.206	95.54	0.000
1.5111	0.882	1.245	100.2	0.000
1.5556	0.885	1.284	105.0	0.000
1.6000	0.888	1.324	109.9	0.000
1.6444	0.892	1.363	114.9	0.000
1.6889	0.895	1.403	119.9	0.000
1.7333	0.899	1.443	125.1	0.000

DRAFT

1.7778	0.902	1.483	130.3	0.000
1.8222	0.906	1.523	135.6	0.000
1.8667	0.909	1.563	141.0	0.000
1.9111	0.912	1.604	146.4	0.000
1.9556	0.916	1.645	151.9	0.000
2.0000	0.919	1.685	157.6	0.000
2.0444	0.923	1.726	163.2	0.000
2.0889	0.926	1.767	169.0	0.000
2.1333	0.929	1.809	174.8	0.000
2.1778	0.933	1.850	180.7	0.000
2.2222	0.936	1.892	186.7	0.000
2.2667	0.940	1.933	192.8	0.000
2.3111	0.943	1.975	198.9	0.000
2.3556	0.946	2.017	205.1	0.000
2.4000	0.950	2.059	211.4	0.000
2.4444	0.953	2.102	217.8	0.000
2.4889	0.957	2.144	224.2	0.000
2.5333	0.960	2.187	230.7	0.000
2.5778	0.963	2.230	237.2	0.000
2.6222	0.967	2.272	243.9	0.000
2.6667	0.970	2.316	250.6	0.000
2.7111	0.974	2.359	257.3	0.000
2.7556	0.977	2.402	264.2	0.000
2.8000	0.980	2.446	271.1	0.000
2.8444	0.984	2.489	278.1	0.000
2.8889	0.987	2.533	285.1	0.000
2.9333	0.991	2.577	292.3	0.000
2.9778	0.994	2.621	299.5	0.000
3.0222	0.997	2.665	306.7	0.000
3.0667	1.001	2.710	314.0	0.000
3.1111	1.004	2.754	321.4	0.000
3.1556	1.008	2.799	328.9	0.000
3.2000	1.011	2.844	336.4	0.000
3.2444	1.015	2.889	344.0	0.000
3.2889	1.018	2.934	351.7	0.000
3.3333	1.021	2.980	359.4	0.000
3.3778	1.025	3.025	367.2	0.000
3.4222	1.028	3.071	375.1	0.000
3.4667	1.032	3.117	383.0	0.000
3.5111	1.035	3.163	391.0	0.000
3.5556	1.038	3.209	399.1	0.000
3.6000	1.042	3.255	407.2	0.000
3.6444	1.045	3.301	415.4	0.000
3.6889	1.049	3.348	423.7	0.000
3.7333	1.052	3.394	432.0	0.000
3.7778	1.055	3.441	440.4	0.000
3.8222	1.059	3.488	448.8	0.000
3.8667	1.062	3.535	457.4	0.000
3.9111	1.066	3.583	466.0	0.000
3.9556	1.069	3.630	474.6	0.000
4.0000	1.072	3.678	483.3	0.000
4.0444	1.076	3.726	492.1	0.000

DRAFT

POC 21 SF

Bottom Length: 2488.00 ft.
Bottom Width: 6.00 ft.
Manning's n: 0.035
Channel bottom slope 1: 0.0257 To 1
Channel Left side slope 0: 0.5 To 1
Channel right side slope 2: 0.5 To 1
Discharge Structure
Riser Height: 0 ft.
Riser Diameter: 0 in.
Element Flows To:
Outlet 1 Outlet 2
POC 21

Channel Hydraulic Table

Stage(ft)	Area(ac)	Volume(ac-ft)	Discharge(cfs)	Infilt(cfs)
0.0000	0.342	0.000	0.000	0.000
0.0444	0.345	0.015	0.227	0.000
0.0889	0.347	0.030	0.718	0.000
0.1333	0.350	0.046	1.405	0.000
0.1778	0.352	0.061	2.260	0.000
0.2222	0.355	0.077	3.264	0.000
0.2667	0.357	0.093	4.405	0.000
0.3111	0.360	0.109	5.673	0.000
0.3556	0.363	0.125	7.060	0.000
0.4000	0.365	0.141	8.560	0.000
0.4444	0.368	0.158	10.16	0.000
0.4889	0.370	0.174	11.87	0.000
0.5333	0.373	0.190	13.68	0.000
0.5778	0.375	0.207	15.58	0.000
0.6222	0.378	0.224	17.58	0.000
0.6667	0.380	0.241	19.66	0.000
0.7111	0.383	0.258	21.83	0.000
0.7556	0.385	0.275	24.08	0.000
0.8000	0.388	0.292	26.41	0.000
0.8444	0.390	0.309	28.83	0.000
0.8889	0.393	0.327	31.32	0.000
0.9333	0.396	0.344	33.89	0.000
0.9778	0.398	0.362	36.53	0.000
1.0222	0.401	0.380	39.25	0.000
1.0667	0.403	0.398	42.04	0.000
1.1111	0.406	0.416	44.90	0.000
1.1556	0.408	0.434	47.83	0.000
1.2000	0.411	0.452	50.83	0.000
1.2444	0.413	0.470	53.90	0.000
1.2889	0.416	0.489	57.04	0.000
1.3333	0.418	0.507	60.24	0.000
1.3778	0.421	0.526	63.51	0.000
1.4222	0.423	0.545	66.85	0.000
1.4667	0.426	0.564	70.25	0.000
1.5111	0.429	0.583	73.71	0.000
1.5556	0.431	0.602	77.24	0.000
1.6000	0.434	0.621	80.84	0.000
1.6444	0.436	0.640	84.49	0.000
1.6889	0.439	0.660	88.21	0.000
1.7333	0.441	0.679	91.99	0.000

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1.7778	0.444	0.699	95.83	0.000
1.8222	0.446	0.719	99.73	0.000
1.8667	0.449	0.739	103.7	0.000
1.9111	0.451	0.759	107.7	0.000
1.9556	0.454	0.779	111.8	0.000
2.0000	0.457	0.799	115.9	0.000
2.0444	0.459	0.820	120.1	0.000
2.0889	0.462	0.840	124.4	0.000
2.1333	0.464	0.861	128.7	0.000
2.1778	0.467	0.881	133.1	0.000
2.2222	0.469	0.902	137.5	0.000
2.2667	0.472	0.923	142.0	0.000
2.3111	0.474	0.944	146.6	0.000
2.3556	0.477	0.965	151.2	0.000
2.4000	0.479	0.987	155.9	0.000
2.4444	0.482	1.008	160.6	0.000
2.4889	0.484	1.029	165.4	0.000
2.5333	0.487	1.051	170.3	0.000
2.5778	0.490	1.073	175.2	0.000
2.6222	0.492	1.095	180.1	0.000
2.6667	0.495	1.117	185.2	0.000
2.7111	0.497	1.139	190.2	0.000
2.7556	0.500	1.161	195.4	0.000
2.8000	0.502	1.183	200.6	0.000
2.8444	0.505	1.205	205.8	0.000
2.8889	0.507	1.228	211.2	0.000
2.9333	0.510	1.251	216.5	0.000
2.9778	0.512	1.273	222.0	0.000
3.0222	0.515	1.296	227.4	0.000
3.0667	0.517	1.319	233.0	0.000
3.1111	0.520	1.342	238.6	0.000
3.1556	0.523	1.365	244.2	0.000
3.2000	0.525	1.389	250.0	0.000
3.2444	0.528	1.412	255.7	0.000
3.2889	0.530	1.436	261.6	0.000
3.3333	0.533	1.459	267.5	0.000
3.3778	0.535	1.483	273.4	0.000
3.4222	0.538	1.507	279.4	0.000
3.4667	0.540	1.531	285.5	0.000
3.5111	0.543	1.555	291.6	0.000
3.5556	0.545	1.579	297.8	0.000
3.6000	0.548	1.603	304.0	0.000
3.6444	0.550	1.628	310.3	0.000
3.6889	0.553	1.652	316.7	0.000
3.7333	0.556	1.677	323.1	0.000
3.7778	0.558	1.702	329.5	0.000
3.8222	0.561	1.727	336.1	0.000
3.8667	0.563	1.752	342.7	0.000
3.9111	0.566	1.777	349.3	0.000
3.9556	0.568	1.802	356.0	0.000
4.0000	0.571	1.827	362.8	0.000
4.0444	0.573	1.853	369.6	0.000

DRAFT

POC 20 SF

Bottom Length: 2805.00 ft.
Bottom Width: 8.00 ft.
Manning's n: 0.035
Channel bottom slope 1: 0.0064 To 1
Channel Left side slope 0: 0.5 To 1
Channel right side slope 2: 0.5 To 1
Discharge Structure
Riser Height: 0 ft.
Riser Diameter: 0 in.
Element Flows To:
Outlet 1 Outlet 2
POC 20

Channel Hydraulic Table

Stage(ft)	Area(ac)	Volume(ac-ft)	Discharge(cfs)	Infilt(cfs)
0.0000	0.515	0.000	0.000	0.000
0.2222	0.529	0.116	2.183	0.000
0.4444	0.543	0.235	6.827	0.000
0.6667	0.558	0.357	13.24	0.000
0.8889	0.572	0.483	21.13	0.000
1.1111	0.586	0.612	30.32	0.000
1.3333	0.601	0.744	40.71	0.000
1.5556	0.615	0.879	52.20	0.000
1.7778	0.629	1.017	64.74	0.000
2.0000	0.643	1.159	78.28	0.000
2.2222	0.658	1.303	92.79	0.000
2.4444	0.672	1.451	108.2	0.000
2.6667	0.686	1.602	124.6	0.000
2.8889	0.701	1.756	141.8	0.000
3.1111	0.715	1.914	160.0	0.000
3.3333	0.729	2.074	179.1	0.000
3.5556	0.744	2.238	199.0	0.000
3.7778	0.758	2.405	219.8	0.000
4.0000	0.772	2.575	241.5	0.000
4.2222	0.787	2.749	264.0	0.000
4.4444	0.801	2.925	287.4	0.000
4.6667	0.815	3.105	311.7	0.000
4.8889	0.830	3.288	336.9	0.000
5.1111	0.844	3.474	363.0	0.000
5.3333	0.858	3.663	389.9	0.000
5.5556	0.872	3.855	417.7	0.000
5.7778	0.887	4.051	446.4	0.000
6.0000	0.901	4.250	476.0	0.000
6.2222	0.915	4.452	506.4	0.000
6.4444	0.930	4.657	537.8	0.000
6.6667	0.944	4.865	570.1	0.000
6.8889	0.958	5.076	603.3	0.000
7.1111	0.973	5.291	637.5	0.000
7.3333	0.987	5.509	672.5	0.000
7.5556	1.001	5.730	708.5	0.000
7.7778	1.016	5.954	745.4	0.000
8.0000	1.030	6.181	783.2	0.000
8.2222	1.044	6.412	822.0	0.000
8.4444	1.059	6.646	861.8	0.000
8.6667	1.073	6.883	902.5	0.000

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8.8889	1.087	7.123	944.2	0.000
9.1111	1.101	7.366	986.9	0.000
9.3333	1.116	7.613	1030.	0.000
9.5556	1.130	7.862	1075.	0.000
9.7778	1.144	8.115	1120.	0.000
10.000	1.159	8.371	1167.	0.000
10.222	1.173	8.630	1215.	0.000
10.444	1.187	8.893	1263.	0.000
10.667	1.202	9.158	1313.	0.000
10.889	1.216	9.427	1364.	0.000
11.111	1.230	9.699	1415.	0.000
11.333	1.245	9.974	1468.	0.000
11.556	1.259	10.25	1522.	0.000
11.778	1.273	10.53	1577.	0.000
12.000	1.287	10.81	1633.	0.000
12.222	1.302	11.10	1690.	0.000
12.444	1.316	11.39	1748.	0.000
12.667	1.330	11.69	1807.	0.000
12.889	1.345	11.98	1867.	0.000
13.111	1.359	12.28	1929.	0.000
13.333	1.373	12.59	1991.	0.000
13.556	1.388	12.90	2055.	0.000
13.778	1.402	13.21	2119.	0.000
14.000	1.416	13.52	2185.	0.000
14.222	1.431	13.84	2252.	0.000
14.444	1.445	14.15	2320.	0.000
14.667	1.459	14.48	2390.	0.000
14.889	1.474	14.80	2460.	0.000
15.111	1.488	15.13	2532.	0.000
15.333	1.502	15.46	2604.	0.000
15.556	1.516	15.80	2678.	0.000
15.778	1.531	16.14	2753.	0.000
16.000	1.545	16.48	2829.	0.000
16.222	1.559	16.83	2907.	0.000
16.444	1.574	17.17	2986.	0.000
16.667	1.588	17.53	3065.	0.000
16.889	1.602	17.88	3146.	0.000
17.111	1.617	18.24	3229.	0.000
17.333	1.631	18.60	3312.	0.000
17.556	1.645	18.96	3397.	0.000
17.778	1.660	19.33	3483.	0.000
18.000	1.674	19.70	3570.	0.000
18.222	1.688	20.07	3659.	0.000
18.444	1.703	20.45	3748.	0.000
18.667	1.717	20.83	3839.	0.000
18.889	1.731	21.21	3932.	0.000
19.111	1.745	21.60	4025.	0.000
19.333	1.760	21.99	4120.	0.000
19.556	1.774	22.38	4216.	0.000
19.778	1.788	22.78	4314.	0.000
20.000	1.803	23.18	4412.	0.000
20.222	1.817	23.58	4512.	0.000

DRAFT

POC 20 NF2

Bottom Length: 2395.00 ft.
Bottom Width: 10.00 ft.
Manning's n: 0.035
Channel bottom slope 1: 0.0128 To 1
Channel Left side slope 0: 0.5 To 1
Channel right side slope 2: 0.5 To 1
Discharge Structure
Riser Height: 0 ft.
Riser Diameter: 0 in.
Element Flows To:
Outlet 1 Outlet 2
POC 20

Channel Hydraulic Table

Stage(ft)	Area(ac)	Volume(ac-ft)	Discharge(cfs)	Infilt(cfs)
0.0000	0.549	0.000	0.000	0.000
0.0667	0.553	0.036	0.525	0.000
0.1333	0.557	0.073	1.661	0.000
0.2000	0.560	0.111	3.253	0.000
0.2667	0.564	0.148	5.233	0.000
0.3333	0.568	0.186	7.562	0.000
0.4000	0.571	0.224	10.21	0.000
0.4667	0.575	0.262	13.15	0.000
0.5333	0.579	0.301	16.37	0.000
0.6000	0.582	0.339	19.85	0.000
0.6667	0.586	0.378	23.59	0.000
0.7333	0.590	0.418	27.56	0.000
0.8000	0.593	0.457	31.76	0.000
0.8667	0.597	0.497	36.18	0.000
0.9333	0.601	0.537	40.82	0.000
1.0000	0.604	0.577	45.66	0.000
1.0667	0.608	0.617	50.71	0.000
1.1333	0.612	0.658	55.95	0.000
1.2000	0.615	0.699	61.38	0.000
1.2667	0.619	0.740	67.00	0.000
1.3333	0.623	0.782	72.79	0.000
1.4000	0.626	0.823	78.77	0.000
1.4667	0.630	0.865	84.92	0.000
1.5333	0.634	0.907	91.25	0.000
1.6000	0.637	0.950	97.74	0.000
1.6667	0.641	0.992	104.4	0.000
1.7333	0.645	1.035	111.2	0.000
1.8000	0.648	1.078	118.2	0.000
1.8667	0.652	1.122	125.3	0.000
1.9333	0.656	1.165	132.6	0.000
2.0000	0.659	1.209	140.0	0.000
2.0667	0.663	1.253	147.6	0.000
2.1333	0.667	1.298	155.4	0.000
2.2000	0.670	1.342	163.3	0.000
2.2667	0.674	1.387	171.4	0.000
2.3333	0.678	1.432	179.6	0.000
2.4000	0.681	1.477	187.9	0.000
2.4667	0.685	1.523	196.4	0.000
2.5333	0.689	1.569	205.0	0.000
2.6000	0.692	1.615	213.8	0.000

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2.6667	0.696	1.661	222.7	0.000
2.7333	0.700	1.708	231.8	0.000
2.8000	0.703	1.755	241.0	0.000
2.8667	0.707	1.802	250.3	0.000
2.9333	0.711	1.849	259.8	0.000
3.0000	0.714	1.896	269.4	0.000
3.0667	0.718	1.944	279.1	0.000
3.1333	0.722	1.992	289.0	0.000
3.2000	0.725	2.041	299.0	0.000
3.2667	0.729	2.089	309.2	0.000
3.3333	0.733	2.138	319.5	0.000
3.4000	0.736	2.187	329.9	0.000
3.4667	0.740	2.236	340.5	0.000
3.5333	0.744	2.285	351.1	0.000
3.6000	0.747	2.335	362.0	0.000
3.6667	0.751	2.385	372.9	0.000
3.7333	0.755	2.435	384.0	0.000
3.8000	0.758	2.486	395.2	0.000
3.8667	0.762	2.537	406.5	0.000
3.9333	0.766	2.588	418.0	0.000
4.0000	0.769	2.639	429.6	0.000
4.0667	0.773	2.690	441.4	0.000
4.1333	0.777	2.742	453.2	0.000
4.2000	0.780	2.794	465.2	0.000
4.2667	0.784	2.846	477.4	0.000
4.3333	0.788	2.898	489.6	0.000
4.4000	0.791	2.951	502.0	0.000
4.4667	0.795	3.004	514.5	0.000
4.5333	0.799	3.057	527.1	0.000
4.6000	0.802	3.110	539.9	0.000
4.6667	0.806	3.164	552.8	0.000
4.7333	0.810	3.218	565.8	0.000
4.8000	0.813	3.272	579.0	0.000
4.8667	0.817	3.327	592.3	0.000
4.9333	0.821	3.381	605.7	0.000
5.0000	0.824	3.436	619.3	0.000
5.0667	0.828	3.491	632.9	0.000
5.1333	0.832	3.546	646.7	0.000
5.2000	0.835	3.602	660.7	0.000
5.2667	0.839	3.658	674.7	0.000
5.3333	0.843	3.714	688.9	0.000
5.4000	0.846	3.770	703.2	0.000
5.4667	0.850	3.827	717.7	0.000
5.5333	0.854	3.884	732.2	0.000
5.6000	0.857	3.941	746.9	0.000
5.6667	0.861	3.998	761.8	0.000
5.7333	0.865	4.056	776.7	0.000
5.8000	0.868	4.113	791.8	0.000
5.8667	0.872	4.171	807.0	0.000
5.9333	0.876	4.230	822.4	0.000
6.0000	0.879	4.288	837.9	0.000
6.0667	0.883	4.347	853.5	0.000

DRAFT

POC 20

Bottom Length: 1714.00 ft.
Bottom Width: 15.00 ft.
Manning's n: 0.035
Channel bottom slope 1: 0.0047 To 1
Channel Left side slope 0: 0.5 To 1
Channel right side slope 2: 0.5 To 1
Discharge Structure
Riser Height: 0 ft.
Riser Diameter: 0 in.
Element Flows To:
Outlet 1 Outlet 2
POC 17/18

Channel Hydraulic Table

Stage(ft)	Area(ac)	Volume(ac-ft)	Discharge(cfs)	Infilt(cfs)
0.0000	0.590	0.000	0.000	0.000
0.0667	0.592	0.039	0.478	0.000
0.1333	0.595	0.079	1.514	0.000
0.2000	0.598	0.118	2.969	0.000
0.2667	0.600	0.158	4.782	0.000
0.3333	0.603	0.198	6.918	0.000
0.4000	0.606	0.239	9.350	0.000
0.4667	0.608	0.279	12.05	0.000
0.5333	0.611	0.320	15.02	0.000
0.6000	0.613	0.361	18.24	0.000
0.6667	0.616	0.402	21.69	0.000
0.7333	0.619	0.443	25.36	0.000
0.8000	0.621	0.484	29.25	0.000
0.8667	0.624	0.526	33.35	0.000
0.9333	0.626	0.568	37.65	0.000
1.0000	0.629	0.609	42.14	0.000
1.0667	0.632	0.652	46.83	0.000
1.1333	0.634	0.694	51.70	0.000
1.2000	0.637	0.736	56.75	0.000
1.2667	0.640	0.779	61.97	0.000
1.3333	0.642	0.821	67.37	0.000
1.4000	0.645	0.864	72.93	0.000
1.4667	0.647	0.908	78.66	0.000
1.5333	0.650	0.951	84.55	0.000
1.6000	0.653	0.994	90.60	0.000
1.6667	0.655	1.038	96.80	0.000
1.7333	0.658	1.082	103.1	0.000
1.8000	0.661	1.126	109.6	0.000
1.8667	0.663	1.170	116.3	0.000
1.9333	0.666	1.214	123.1	0.000
2.0000	0.668	1.259	130.0	0.000
2.0667	0.671	1.303	137.1	0.000
2.1333	0.674	1.348	144.3	0.000
2.2000	0.676	1.393	151.7	0.000
2.2667	0.679	1.438	159.2	0.000
2.3333	0.682	1.484	166.8	0.000
2.4000	0.684	1.529	174.6	0.000
2.4667	0.687	1.575	182.5	0.000
2.5333	0.689	1.621	190.5	0.000
2.6000	0.692	1.667	198.7	0.000

DRAFT

2.6667	0.695	1.713	206.9	0.000
2.7333	0.697	1.760	215.4	0.000
2.8000	0.700	1.806	223.9	0.000
2.8667	0.703	1.853	232.5	0.000
2.9333	0.705	1.900	241.3	0.000
3.0000	0.708	1.947	250.2	0.000
3.0667	0.710	1.995	259.3	0.000
3.1333	0.713	2.042	268.4	0.000
3.2000	0.716	2.090	277.7	0.000
3.2667	0.718	2.138	287.1	0.000
3.3333	0.721	2.186	296.6	0.000
3.4000	0.724	2.234	306.2	0.000
3.4667	0.726	2.282	315.9	0.000
3.5333	0.729	2.331	325.8	0.000
3.6000	0.731	2.379	335.8	0.000
3.6667	0.734	2.428	345.8	0.000
3.7333	0.737	2.477	356.0	0.000
3.8000	0.739	2.527	366.3	0.000
3.8667	0.742	2.576	376.8	0.000
3.9333	0.745	2.625	387.3	0.000
4.0000	0.747	2.675	398.0	0.000
4.0667	0.750	2.725	408.7	0.000
4.1333	0.752	2.775	419.6	0.000
4.2000	0.755	2.826	430.6	0.000
4.2667	0.758	2.876	441.7	0.000
4.3333	0.760	2.927	452.9	0.000
4.4000	0.763	2.977	464.2	0.000
4.4667	0.766	3.028	475.6	0.000
4.5333	0.768	3.080	487.1	0.000
4.6000	0.771	3.131	498.7	0.000
4.6667	0.773	3.182	510.5	0.000
4.7333	0.776	3.234	522.3	0.000
4.8000	0.779	3.286	534.3	0.000
4.8667	0.781	3.338	546.4	0.000
4.9333	0.784	3.390	558.5	0.000
5.0000	0.787	3.443	570.8	0.000
5.0667	0.789	3.495	583.2	0.000
5.1333	0.792	3.548	595.7	0.000
5.2000	0.794	3.601	608.3	0.000
5.2667	0.797	3.654	621.0	0.000
5.3333	0.800	3.707	633.8	0.000
5.4000	0.802	3.760	646.7	0.000
5.4667	0.805	3.814	659.7	0.000
5.5333	0.808	3.868	672.8	0.000
5.6000	0.810	3.922	686.1	0.000
5.6667	0.813	3.976	699.4	0.000
5.7333	0.815	4.030	712.8	0.000
5.8000	0.818	4.085	726.4	0.000
5.8667	0.821	4.139	740.0	0.000
5.9333	0.823	4.194	753.8	0.000
6.0000	0.826	4.249	767.6	0.000
6.0667	0.829	4.304	781.6	0.000

DRAFT

HMB 18 (was 19 and 20)

Depth: 7.4 ft.
Element Flows To:
Outlet 1 Outlet 2
POC 20

SSD Table Hydraulic Table

Stage (ft)	Area (ac)	Volume (ac-ft)	Manual	NotUsed	NotUsed	NotUsed	NotUsed
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.010	0.600	0.006	0.001	0.000	0.000	0.000	0.000
0.100	0.611	0.069	0.035	0.000	0.000	0.000	0.000
0.200	0.620	0.129	0.099	0.000	0.000	0.000	0.000
0.300	0.630	0.191	0.182	0.000	0.000	0.000	0.000
0.400	0.640	0.253	0.258	0.000	0.000	0.000	0.000
0.500	0.650	0.316	0.309	0.000	0.000	0.000	0.000
0.600	0.660	0.380	0.352	0.000	0.000	0.000	0.000
0.700	0.669	0.445	0.391	0.000	0.000	0.000	0.000
0.800	0.679	0.511	0.426	0.000	0.000	0.000	0.000
0.900	0.689	0.579	0.458	0.000	0.000	0.000	0.000
1.000	0.699	0.647	0.488	0.000	0.000	0.000	0.000
1.100	0.709	0.716	0.517	0.000	0.000	0.000	0.000
1.200	0.719	0.786	0.544	0.000	0.000	0.000	0.000
1.300	0.728	0.858	0.570	0.000	0.000	0.000	0.000
1.400	0.738	0.930	0.594	0.000	0.000	0.000	0.000
1.500	0.748	1.003	0.618	0.000	0.000	0.000	0.000
1.600	0.758	1.078	0.641	0.000	0.000	0.000	0.000
1.700	0.768	1.153	0.662	0.000	0.000	0.000	0.000
1.800	0.777	1.229	0.684	0.000	0.000	0.000	0.000
1.900	0.787	1.307	0.704	0.000	0.000	0.000	0.000
2.000	0.797	1.385	0.724	0.000	0.000	0.000	0.000
2.100	0.807	1.464	0.744	0.000	0.000	0.000	0.000
2.200	0.817	1.545	0.763	0.000	0.000	0.000	0.000
2.300	0.827	1.626	0.781	0.000	0.000	0.000	0.000
2.400	0.836	1.709	0.800	0.000	0.000	0.000	0.000
2.500	0.846	1.792	0.817	0.000	0.000	0.000	0.000
2.600	0.856	1.877	0.835	0.000	0.000	0.000	0.000
2.700	0.866	1.962	0.852	0.000	0.000	0.000	0.000
2.800	0.876	2.049	0.868	0.000	0.000	0.000	0.000
2.900	0.886	2.136	0.885	0.000	0.000	0.000	0.000
3.000	0.895	2.225	0.901	0.000	0.000	0.000	0.000
3.100	0.905	2.314	0.954	0.000	0.000	0.000	0.000
3.200	0.915	2.405	1.125	0.000	0.000	0.000	0.000
3.300	0.925	2.496	1.363	0.000	0.000	0.000	0.000
3.400	0.935	2.589	1.652	0.000	0.000	0.000	0.000
3.500	0.944	2.682	1.982	0.000	0.000	0.000	0.000
3.600	0.954	2.777	2.310	0.000	0.000	0.000	0.000
3.700	0.964	2.873	2.528	0.000	0.000	0.000	0.000
3.800	0.974	2.969	2.722	0.000	0.000	0.000	0.000
3.900	0.984	3.067	2.899	0.000	0.000	0.000	0.000
4.000	0.994	3.166	3.062	0.000	0.000	0.000	0.000
4.100	1.003	3.265	3.214	0.000	0.000	0.000	0.000
4.200	1.013	3.366	3.358	0.000	0.000	0.000	0.000
4.300	1.023	3.468	3.495	0.000	0.000	0.000	0.000
4.400	1.033	3.571	3.626	0.000	0.000	0.000	0.000
4.500	1.043	3.674	3.751	0.000	0.000	0.000	0.000

DRAFT

4.600	1.052	3.779	3.871	0.000	0.000	0.000	0.000
4.700	1.062	3.885	3.988	0.000	0.000	0.000	0.000
4.800	1.072	3.992	4.495	0.000	0.000	0.000	0.000
4.900	1.082	4.099	5.326	0.000	0.000	0.000	0.000
5.000	1.092	4.208	6.367	0.000	0.000	0.000	0.000
5.100	1.102	4.318	7.577	0.000	0.000	0.000	0.000
5.200	1.111	4.429	8.934	0.000	0.000	0.000	0.000
5.300	1.121	4.541	10.42	0.000	0.000	0.000	0.000
5.400	1.131	4.654	12.03	0.000	0.000	0.000	0.000
5.500	1.141	4.768	13.74	0.000	0.000	0.000	0.000
5.600	1.151	4.883	15.56	0.000	0.000	0.000	0.000
5.700	1.161	4.999	17.48	0.000	0.000	0.000	0.000
5.800	1.170	5.115	19.48	0.000	0.000	0.000	0.000
5.900	1.180	5.233	21.58	0.000	0.000	0.000	0.000
6.000	1.190	5.352	23.76	0.000	0.000	0.000	0.000
6.100	1.200	5.472	26.02	0.000	0.000	0.000	0.000
6.200	1.210	5.593	28.36	0.000	0.000	0.000	0.000
6.300	1.219	5.715	30.77	0.000	0.000	0.000	0.000
6.400	1.229	5.838	33.25	0.000	0.000	0.000	0.000
6.500	1.239	5.962	35.81	0.000	0.000	0.000	0.000
6.600	1.249	6.088	38.44	0.000	0.000	0.000	0.000
6.700	1.259	6.214	40.96	0.000	0.000	0.000	0.000
6.800	1.269	6.341	42.67	0.000	0.000	0.000	0.000
6.900	1.278	6.469	44.31	0.000	0.000	0.000	0.000
7.000	1.288	6.598	45.89	0.000	0.000	0.000	0.000
7.200	1.308	6.859	48.89	0.000	0.000	0.000	0.000
7.400	1.327	7.125	999.0	0.000	0.000	0.000	0.000

DRAFT

POC 17/18

Bottom Length: 1331.00 ft.
Bottom Width: 15.00 ft.
Manning's n: 0.035
Channel bottom slope 1: 0.0075 To 1
Channel Left side slope 0: 0.5 To 1
Channel right side slope 2: 0.5 To 1
Discharge Structure
Riser Height: 0 ft.
Riser Diameter: 0 in.
Element Flows To:
Outlet 1 Outlet 2
SF

Channel Hydraulic Table

Stage(ft)	Area(ac)	Volume(ac-ft)	Discharge(cfs)	Infilt(cfs)
0.0000	0.458	0.000	0.000	0.000
0.1111	0.461	0.051	1.413	0.000
0.2222	0.465	0.102	4.466	0.000
0.3333	0.468	0.154	8.739	0.000
0.4444	0.471	0.206	14.05	0.000
0.5556	0.475	0.259	20.30	0.000
0.6667	0.478	0.312	27.39	0.000
0.7778	0.482	0.365	35.28	0.000
0.8889	0.485	0.419	43.91	0.000
1.0000	0.488	0.473	53.24	0.000
1.1111	0.492	0.528	63.23	0.000
1.2222	0.495	0.583	73.86	0.000
1.3333	0.499	0.638	85.10	0.000
1.4444	0.502	0.693	96.93	0.000
1.5556	0.505	0.749	109.3	0.000
1.6667	0.509	0.806	122.2	0.000
1.7778	0.512	0.863	135.7	0.000
1.8889	0.516	0.920	149.7	0.000
2.0000	0.519	0.977	164.2	0.000
2.1111	0.522	1.035	179.3	0.000
2.2222	0.526	1.094	194.8	0.000
2.3333	0.529	1.152	210.7	0.000
2.4444	0.533	1.211	227.2	0.000
2.5556	0.536	1.271	244.1	0.000
2.6667	0.539	1.330	261.4	0.000
2.7778	0.543	1.391	279.2	0.000
2.8889	0.546	1.451	297.5	0.000
3.0000	0.550	1.512	316.1	0.000
3.1111	0.553	1.573	335.2	0.000
3.2222	0.556	1.635	354.7	0.000
3.3333	0.560	1.697	374.6	0.000
3.4444	0.563	1.760	395.0	0.000
3.5556	0.567	1.822	415.7	0.000
3.6667	0.570	1.886	436.9	0.000
3.7778	0.573	1.949	458.4	0.000
3.8889	0.577	2.013	480.4	0.000
4.0000	0.580	2.077	502.7	0.000
4.1111	0.584	2.142	525.4	0.000
4.2222	0.587	2.207	548.6	0.000
4.3333	0.590	2.273	572.1	0.000

DRAFT

4.4444	0.594	2.338	596.0	0.000
4.5556	0.597	2.405	620.2	0.000
4.6667	0.601	2.471	644.9	0.000
4.7778	0.604	2.538	669.9	0.000
4.8889	0.607	2.606	695.3	0.000
5.0000	0.611	2.673	721.1	0.000
5.1111	0.614	2.741	747.2	0.000
5.2222	0.617	2.810	773.7	0.000
5.3333	0.621	2.879	800.6	0.000
5.4444	0.624	2.948	827.9	0.000
5.5556	0.628	3.017	855.5	0.000
5.6667	0.631	3.087	883.5	0.000
5.7778	0.634	3.158	911.9	0.000
5.8889	0.638	3.229	940.6	0.000
6.0000	0.641	3.300	969.7	0.000
6.1111	0.645	3.371	999.1	0.000
6.2222	0.648	3.443	1028.	0.000
6.3333	0.651	3.515	1059.	0.000
6.4444	0.655	3.588	1089.	0.000
6.5556	0.658	3.661	1120.	0.000
6.6667	0.662	3.734	1151.	0.000
6.7778	0.665	3.808	1183.	0.000
6.8889	0.668	3.882	1215.	0.000
7.0000	0.672	3.957	1247.	0.000
7.1111	0.675	4.032	1280.	0.000
7.2222	0.679	4.107	1313.	0.000
7.3333	0.682	4.182	1346.	0.000
7.4444	0.685	4.258	1380.	0.000
7.5556	0.689	4.335	1414.	0.000
7.6667	0.692	4.412	1449.	0.000
7.7778	0.696	4.489	1484.	0.000
7.8889	0.699	4.566	1519.	0.000
8.0000	0.702	4.644	1554.	0.000
8.1111	0.706	4.723	1590.	0.000
8.2222	0.709	4.801	1627.	0.000
8.3333	0.713	4.880	1663.	0.000
8.4444	0.716	4.960	1700.	0.000
8.5556	0.719	5.039	1738.	0.000
8.6667	0.723	5.120	1775.	0.000
8.7778	0.726	5.200	1813.	0.000
8.8889	0.730	5.281	1852.	0.000
9.0000	0.733	5.362	1891.	0.000
9.1111	0.736	5.444	1930.	0.000
9.2222	0.740	5.526	1969.	0.000
9.3333	0.743	5.609	2009.	0.000
9.4444	0.747	5.691	2049.	0.000
9.5556	0.750	5.775	2090.	0.000
9.6667	0.753	5.858	2131.	0.000
9.7778	0.757	5.942	2172.	0.000
9.8889	0.760	6.026	2214.	0.000
10.000	0.764	6.111	2256.	0.000
10.111	0.767	6.196	2298.	0.000

DRAFT

SB 18 SF

Bottom Length: 3376.00 ft.
Bottom Width: 6.00 ft.
Manning's n: 0.035
Channel bottom slope 1: 0.0059 To 1
Channel Left side slope 0: 0.5 To 1
Channel right side slope 2: 0.5 To 1
Discharge Structure
Riser Height: 0 ft.
Riser Diameter: 0 in.
Element Flows To:
Outlet 1 Outlet 2
POC 17/18

Channel Hydraulic Table

Stage(ft)	Area(ac)	Volume(ac-ft)	Discharge(cfs)	Infilt(cfs)
0.0000	0.465	0.000	0.000	0.000
0.0889	0.471	0.041	0.344	0.000
0.1778	0.478	0.083	1.082	0.000
0.2667	0.485	0.126	2.110	0.000
0.3556	0.492	0.170	3.383	0.000
0.4444	0.499	0.214	4.871	0.000
0.5333	0.506	0.259	6.556	0.000
0.6222	0.513	0.304	8.423	0.000
0.7111	0.520	0.350	10.46	0.000
0.8000	0.527	0.396	12.65	0.000
0.8889	0.533	0.444	15.00	0.000
0.9778	0.540	0.491	17.50	0.000
1.0667	0.547	0.540	20.14	0.000
1.1556	0.554	0.589	22.91	0.000
1.2444	0.561	0.638	25.82	0.000
1.3333	0.568	0.688	28.86	0.000
1.4222	0.575	0.739	32.03	0.000
1.5111	0.582	0.791	35.32	0.000
1.6000	0.589	0.843	38.73	0.000
1.6889	0.595	0.895	42.26	0.000
1.7778	0.602	0.949	45.91	0.000
1.8667	0.609	1.003	49.68	0.000
1.9556	0.616	1.057	53.57	0.000
2.0444	0.623	1.112	57.57	0.000
2.1333	0.630	1.168	61.68	0.000
2.2222	0.637	1.224	65.91	0.000
2.3111	0.644	1.281	70.25	0.000
2.4000	0.651	1.339	74.70	0.000
2.4889	0.657	1.397	79.27	0.000
2.5778	0.664	1.456	83.94	0.000
2.6667	0.671	1.515	88.73	0.000
2.7556	0.678	1.575	93.63	0.000
2.8444	0.685	1.636	98.64	0.000
2.9333	0.692	1.697	103.7	0.000
3.0222	0.699	1.759	109.0	0.000
3.1111	0.706	1.821	114.3	0.000
3.2000	0.713	1.884	119.7	0.000
3.2889	0.719	1.948	125.3	0.000
3.3778	0.726	2.012	131.0	0.000
3.4667	0.733	2.077	136.8	0.000

DRAFT

3.5556	0.740	2.143	142.7	0.000
3.6444	0.747	2.209	148.7	0.000
3.7333	0.754	2.276	154.8	0.000
3.8222	0.761	2.343	161.0	0.000
3.9111	0.768	2.411	167.3	0.000
4.0000	0.775	2.480	173.8	0.000
4.0889	0.781	2.549	180.4	0.000
4.1778	0.788	2.619	187.0	0.000
4.2667	0.795	2.689	193.8	0.000
4.3556	0.802	2.760	200.7	0.000
4.4444	0.809	2.832	207.7	0.000
4.5333	0.816	2.904	214.9	0.000
4.6222	0.823	2.977	222.1	0.000
4.7111	0.830	3.050	229.5	0.000
4.8000	0.837	3.124	236.9	0.000
4.8889	0.843	3.199	244.5	0.000
4.9778	0.850	3.275	252.2	0.000
5.0667	0.857	3.350	260.0	0.000
5.1556	0.864	3.427	268.0	0.000
5.2444	0.871	3.504	276.0	0.000
5.3333	0.878	3.582	284.2	0.000
5.4222	0.885	3.660	292.5	0.000
5.5111	0.892	3.739	300.8	0.000
5.6000	0.899	3.819	309.4	0.000
5.6889	0.905	3.899	318.0	0.000
5.7778	0.912	3.980	326.8	0.000
5.8667	0.919	4.061	335.6	0.000
5.9556	0.926	4.143	344.6	0.000
6.0444	0.933	4.226	353.7	0.000
6.1333	0.940	4.309	363.0	0.000
6.2222	0.947	4.393	372.3	0.000
6.3111	0.954	4.478	381.8	0.000
6.4000	0.961	4.563	391.4	0.000
6.4889	0.967	4.649	401.1	0.000
6.5778	0.974	4.735	411.0	0.000
6.6667	0.981	4.822	420.9	0.000
6.7556	0.988	4.910	431.0	0.000
6.8444	0.995	4.998	441.2	0.000
6.9333	1.002	5.087	451.6	0.000
7.0222	1.009	5.176	462.0	0.000
7.1111	1.016	5.266	472.6	0.000
7.2000	1.023	5.357	483.3	0.000
7.2889	1.029	5.448	494.2	0.000
7.3778	1.036	5.540	505.1	0.000
7.4667	1.043	5.632	516.2	0.000
7.5556	1.050	5.725	527.5	0.000
7.6444	1.057	5.819	538.8	0.000
7.7333	1.064	5.913	550.3	0.000
7.8222	1.071	6.008	561.9	0.000
7.9111	1.078	6.104	573.6	0.000
8.0000	1.085	6.200	585.5	0.000
8.0889	1.092	6.297	597.5	0.000

DRAFT

Offsite 97

Bottom Length: 5539.00 ft.
Bottom Width: 6.00 ft.
Manning's n: 0.035
Channel bottom slope 1: 0.0078 To 1
Channel Left side slope 0: 0.5 To 1
Channel right side slope 2: 0.5 To 1
Discharge Structure
Riser Height: 0 ft.
Riser Diameter: 0 in.
Element Flows To:
Outlet 1 Outlet 2
SB 18 SF

Channel Hydraulic Table

Stage(ft)	Area(ac)	Volume(ac-ft)	Discharge(cfs)	Infilt(cfs)
0.0000	0.762	0.000	0.000	0.000
0.0889	0.774	0.068	0.395	0.000
0.1778	0.785	0.137	1.245	0.000
0.2667	0.796	0.208	2.427	0.000
0.3556	0.808	0.279	3.889	0.000
0.4444	0.819	0.351	5.601	0.000
0.5333	0.830	0.425	7.538	0.000
0.6222	0.842	0.499	9.685	0.000
0.7111	0.853	0.574	12.02	0.000
0.8000	0.864	0.651	14.55	0.000
0.8889	0.876	0.728	17.25	0.000
0.9778	0.887	0.806	20.12	0.000
1.0667	0.898	0.886	23.16	0.000
1.1556	0.909	0.966	26.35	0.000
1.2444	0.921	1.047	29.69	0.000
1.3333	0.932	1.130	33.19	0.000
1.4222	0.943	1.213	36.83	0.000
1.5111	0.955	1.298	40.61	0.000
1.6000	0.966	1.383	44.53	0.000
1.6889	0.977	1.469	48.59	0.000
1.7778	0.989	1.557	52.79	0.000
1.8667	1.000	1.645	57.12	0.000
1.9556	1.011	1.735	61.59	0.000
2.0444	1.022	1.825	66.19	0.000
2.1333	1.034	1.917	70.92	0.000
2.2222	1.045	2.009	75.78	0.000
2.3111	1.056	2.102	80.77	0.000
2.4000	1.068	2.197	85.89	0.000
2.4889	1.079	2.292	91.14	0.000
2.5778	1.090	2.389	96.52	0.000
2.6667	1.102	2.486	102.0	0.000
2.7556	1.113	2.585	107.6	0.000
2.8444	1.124	2.684	113.4	0.000
2.9333	1.136	2.785	119.3	0.000
3.0222	1.147	2.886	125.3	0.000
3.1111	1.158	2.989	131.4	0.000
3.2000	1.169	3.092	137.7	0.000
3.2889	1.181	3.197	144.1	0.000
3.3778	1.192	3.302	150.6	0.000
3.4667	1.203	3.409	157.3	0.000

DRAFT

3.5556	1.215	3.516	164.0	0.000
3.6444	1.226	3.625	170.9	0.000
3.7333	1.237	3.734	178.0	0.000
3.8222	1.249	3.845	185.1	0.000
3.9111	1.260	3.956	192.4	0.000
4.0000	1.271	4.069	199.8	0.000
4.0889	1.282	4.182	207.4	0.000
4.1778	1.294	4.297	215.1	0.000
4.2667	1.305	4.412	222.9	0.000
4.3556	1.316	4.529	230.8	0.000
4.4444	1.328	4.646	238.9	0.000
4.5333	1.339	4.765	247.1	0.000
4.6222	1.350	4.884	255.4	0.000
4.7111	1.362	5.005	263.8	0.000
4.8000	1.373	5.127	272.4	0.000
4.8889	1.384	5.249	281.1	0.000
4.9778	1.395	5.373	290.0	0.000
5.0667	1.407	5.497	299.0	0.000
5.1556	1.418	5.623	308.1	0.000
5.2444	1.429	5.750	317.4	0.000
5.3333	1.441	5.877	326.7	0.000
5.4222	1.452	6.006	336.3	0.000
5.5111	1.463	6.135	345.9	0.000
5.6000	1.475	6.266	355.7	0.000
5.6889	1.486	6.398	365.6	0.000
5.7778	1.497	6.530	375.7	0.000
5.8667	1.509	6.664	385.9	0.000
5.9556	1.520	6.798	396.3	0.000
6.0444	1.531	6.934	406.7	0.000
6.1333	1.542	7.071	417.4	0.000
6.2222	1.554	7.208	428.1	0.000
6.3111	1.565	7.347	439.0	0.000
6.4000	1.576	7.487	450.0	0.000
6.4889	1.588	7.627	461.2	0.000
6.5778	1.599	7.769	472.5	0.000
6.6667	1.610	7.912	484.0	0.000
6.7556	1.622	8.055	495.6	0.000
6.8444	1.633	8.200	507.3	0.000
6.9333	1.644	8.346	519.2	0.000
7.0222	1.655	8.492	531.3	0.000
7.1111	1.667	8.640	543.4	0.000
7.2000	1.678	8.789	555.7	0.000
7.2889	1.689	8.939	568.2	0.000
7.3778	1.701	9.089	580.8	0.000
7.4667	1.712	9.241	593.6	0.000
7.5556	1.723	9.394	606.5	0.000
7.6444	1.735	9.547	619.5	0.000
7.7333	1.746	9.702	632.7	0.000
7.8222	1.757	9.858	646.1	0.000
7.9111	1.768	10.01	659.6	0.000
8.0000	1.780	10.17	673.2	0.000
8.0889	1.791	10.33	687.0	0.000

DRAFT

SB 17 SF

Bottom Length: 1491.00 ft.
Bottom Width: 4.00 ft.
Manning's n: 0.035
Channel bottom slope 1: 0.0148 To 1
Channel Left side slope 0: 0.5 To 1
Channel right side slope 2: 0.5 To 1
Discharge Structure
Riser Height: 0 ft.
Riser Diameter: 0 in.
Element Flows To:
Outlet 1 Outlet 2
POC 17/18

Channel Hydraulic Table

Stage(ft)	Area(ac)	Volume(ac-ft)	Discharge(cfs)	Infilt(cfs)
0.0000	0.136	0.000	0.000	0.000
0.0667	0.139	0.009	0.224	0.000
0.1333	0.141	0.018	0.706	0.000
0.2000	0.143	0.028	1.375	0.000
0.2667	0.146	0.037	2.203	0.000
0.3333	0.148	0.047	3.170	0.000
0.4000	0.150	0.057	4.265	0.000
0.4667	0.152	0.067	5.477	0.000
0.5333	0.155	0.077	6.799	0.000
0.6000	0.157	0.088	8.225	0.000
0.6667	0.159	0.098	9.751	0.000
0.7333	0.162	0.109	11.37	0.000
0.8000	0.164	0.120	13.08	0.000
0.8667	0.166	0.131	14.88	0.000
0.9333	0.168	0.142	16.77	0.000
1.0000	0.171	0.154	18.75	0.000
1.0667	0.173	0.165	20.80	0.000
1.1333	0.175	0.177	22.94	0.000
1.2000	0.178	0.188	25.16	0.000
1.2667	0.180	0.200	27.46	0.000
1.3333	0.182	0.213	29.84	0.000
1.4000	0.184	0.225	32.30	0.000
1.4667	0.187	0.237	34.83	0.000
1.5333	0.189	0.250	37.44	0.000
1.6000	0.191	0.262	40.13	0.000
1.6667	0.194	0.275	42.89	0.000
1.7333	0.196	0.288	45.73	0.000
1.8000	0.198	0.301	48.64	0.000
1.8667	0.200	0.315	51.63	0.000
1.9333	0.203	0.328	54.70	0.000
2.0000	0.205	0.342	57.84	0.000
2.0667	0.207	0.356	61.05	0.000
2.1333	0.209	0.370	64.34	0.000
2.2000	0.212	0.384	67.71	0.000
2.2667	0.214	0.398	71.15	0.000
2.3333	0.216	0.412	74.67	0.000
2.4000	0.219	0.427	78.26	0.000
2.4667	0.221	0.441	81.92	0.000
2.5333	0.223	0.456	85.67	0.000
2.6000	0.225	0.471	89.49	0.000

DRAFT

2.6667	0.228	0.486	93.38	0.000
2.7333	0.230	0.502	97.35	0.000
2.8000	0.232	0.517	101.4	0.000
2.8667	0.235	0.533	105.5	0.000
2.9333	0.237	0.548	109.7	0.000
3.0000	0.239	0.564	114.0	0.000
3.0667	0.241	0.580	118.3	0.000
3.1333	0.244	0.597	122.7	0.000
3.2000	0.246	0.613	127.3	0.000
3.2667	0.248	0.629	131.8	0.000
3.3333	0.251	0.646	136.5	0.000
3.4000	0.253	0.663	141.3	0.000
3.4667	0.255	0.680	146.1	0.000
3.5333	0.257	0.697	151.0	0.000
3.6000	0.260	0.714	156.0	0.000
3.6667	0.262	0.732	161.0	0.000
3.7333	0.264	0.749	166.2	0.000
3.8000	0.267	0.767	171.4	0.000
3.8667	0.269	0.785	176.7	0.000
3.9333	0.271	0.803	182.1	0.000
4.0000	0.273	0.821	187.5	0.000
4.0667	0.276	0.839	193.1	0.000
4.1333	0.278	0.858	198.7	0.000
4.2000	0.280	0.877	204.4	0.000
4.2667	0.283	0.895	210.2	0.000
4.3333	0.285	0.914	216.1	0.000
4.4000	0.287	0.933	222.1	0.000
4.4667	0.289	0.953	228.1	0.000
4.5333	0.292	0.972	234.3	0.000
4.6000	0.294	0.992	240.5	0.000
4.6667	0.296	1.011	246.8	0.000
4.7333	0.299	1.031	253.2	0.000
4.8000	0.301	1.051	259.6	0.000
4.8667	0.303	1.071	266.2	0.000
4.9333	0.305	1.092	272.8	0.000
5.0000	0.308	1.112	279.6	0.000
5.0667	0.310	1.133	286.4	0.000
5.1333	0.312	1.153	293.3	0.000
5.2000	0.314	1.174	300.3	0.000
5.2667	0.317	1.195	307.3	0.000
5.3333	0.319	1.217	314.5	0.000
5.4000	0.321	1.238	321.8	0.000
5.4667	0.324	1.260	329.1	0.000
5.5333	0.326	1.281	336.5	0.000
5.6000	0.328	1.303	344.1	0.000
5.6667	0.330	1.325	351.7	0.000
5.7333	0.333	1.347	359.4	0.000
5.8000	0.335	1.369	367.2	0.000
5.8667	0.337	1.392	375.1	0.000
5.9333	0.340	1.415	383.0	0.000
6.0000	0.342	1.437	391.1	0.000
6.0667	0.344	1.460	399.3	0.000

DRAFT

HMB 17 (was 18)

Depth: 8.1 ft.
Element Flows To:
Outlet 1 Outlet 2
POC 17/18

SSD Table Hydraulic Table

Stage (ft)	Area (ac)	Volume (ac-ft)	Manual	NotUsed	NotUsed	NotUsed	NotUsed
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.010	0.680	0.007	0.001	0.000	0.000	0.000	0.000
0.200	0.701	0.139	0.112	0.000	0.000	0.000	0.000
0.300	0.712	0.209	0.205	0.000	0.000	0.000	0.000
0.400	0.722	0.281	0.291	0.000	0.000	0.000	0.000
0.500	0.732	0.354	0.347	0.000	0.000	0.000	0.000
0.600	0.743	0.428	0.396	0.000	0.000	0.000	0.000
0.700	0.753	0.503	0.440	0.000	0.000	0.000	0.000
0.800	0.764	0.579	0.479	0.000	0.000	0.000	0.000
0.900	0.774	0.656	0.515	0.000	0.000	0.000	0.000
1.000	0.784	0.734	0.549	0.000	0.000	0.000	0.000
1.100	0.795	0.813	0.581	0.000	0.000	0.000	0.000
1.200	0.805	0.893	0.612	0.000	0.000	0.000	0.000
1.300	0.815	0.974	0.641	0.000	0.000	0.000	0.000
1.400	0.826	1.056	0.668	0.000	0.000	0.000	0.000
1.500	0.836	1.139	0.695	0.000	0.000	0.000	0.000
1.600	0.846	1.223	0.721	0.000	0.000	0.000	0.000
1.700	0.857	1.308	0.745	0.000	0.000	0.000	0.000
1.800	0.867	1.395	0.769	0.000	0.000	0.000	0.000
1.900	0.877	1.482	0.792	0.000	0.000	0.000	0.000
2.000	0.888	1.570	0.815	0.000	0.000	0.000	0.000
2.100	0.898	1.659	0.837	0.000	0.000	0.000	0.000
2.200	0.908	1.750	0.858	0.000	0.000	0.000	0.000
2.300	0.919	1.841	0.879	0.000	0.000	0.000	0.000
2.400	0.929	1.933	0.899	0.000	0.000	0.000	0.000
2.500	0.939	2.027	0.919	0.000	0.000	0.000	0.000
2.600	0.950	2.121	0.939	0.000	0.000	0.000	0.000
2.700	0.960	2.216	0.958	0.000	0.000	0.000	0.000
2.800	0.970	2.313	0.977	0.000	0.000	0.000	0.000
2.900	0.980	2.410	0.995	0.000	0.000	0.000	0.000
3.000	0.991	2.509	1.013	0.000	0.000	0.000	0.000
3.100	1.001	2.608	1.031	0.000	0.000	0.000	0.000
3.200	1.011	2.709	1.048	0.000	0.000	0.000	0.000
3.300	1.022	2.810	1.173	0.000	0.000	0.000	0.000
3.400	1.032	2.913	1.413	0.000	0.000	0.000	0.000
3.500	1.042	3.017	1.723	0.000	0.000	0.000	0.000
3.600	1.052	3.121	2.088	0.000	0.000	0.000	0.000
3.700	1.063	3.227	2.502	0.000	0.000	0.000	0.000
3.800	1.073	3.334	2.832	0.000	0.000	0.000	0.000
3.900	1.083	3.441	3.079	0.000	0.000	0.000	0.000
4.000	1.093	3.550	3.301	0.000	0.000	0.000	0.000
4.100	1.104	3.660	3.505	0.000	0.000	0.000	0.000
4.200	1.114	3.771	3.694	0.000	0.000	0.000	0.000
4.300	1.124	3.882	3.871	0.000	0.000	0.000	0.000
4.400	1.134	3.995	4.039	0.000	0.000	0.000	0.000
4.500	1.145	4.109	4.199	0.000	0.000	0.000	0.000
4.600	1.155	4.224	4.352	0.000	0.000	0.000	0.000

DRAFT

4.700	1.165	4.340	4.499	0.000	0.000	0.000	0.000
4.800	1.175	4.457	4.640	0.000	0.000	0.000	0.000
4.900	1.186	4.575	4.776	0.000	0.000	0.000	0.000
5.000	1.196	4.694	4.908	0.000	0.000	0.000	0.000
5.100	1.206	4.814	5.037	0.000	0.000	0.000	0.000
5.200	1.216	4.935	5.161	0.000	0.000	0.000	0.000
5.300	1.226	5.057	5.394	0.000	0.000	0.000	0.000
5.400	1.237	5.180	5.981	0.000	0.000	0.000	0.000
5.500	1.247	5.304	6.765	0.000	0.000	0.000	0.000
5.600	1.257	5.429	7.698	0.000	0.000	0.000	0.000
5.700	1.267	5.555	8.755	0.000	0.000	0.000	0.000
5.800	1.277	5.683	9.923	0.000	0.000	0.000	0.000
5.900	1.288	5.811	11.19	0.000	0.000	0.000	0.000
6.000	1.298	5.940	12.55	0.000	0.000	0.000	0.000
6.100	1.308	6.070	13.99	0.000	0.000	0.000	0.000
6.200	1.318	6.202	15.51	0.000	0.000	0.000	0.000
6.300	1.328	6.334	17.11	0.000	0.000	0.000	0.000
6.400	1.338	6.467	18.78	0.000	0.000	0.000	0.000
6.500	1.349	6.602	20.51	0.000	0.000	0.000	0.000
6.600	1.359	6.737	22.32	0.000	0.000	0.000	0.000
6.700	1.369	6.873	24.18	0.000	0.000	0.000	0.000
6.800	1.379	7.011	26.11	0.000	0.000	0.000	0.000
6.900	1.389	7.149	28.09	0.000	0.000	0.000	0.000
7.000	1.399	7.289	30.14	0.000	0.000	0.000	0.000
7.100	1.409	7.429	32.23	0.000	0.000	0.000	0.000
7.200	1.420	7.571	34.39	0.000	0.000	0.000	0.000
7.300	1.430	7.713	36.59	0.000	0.000	0.000	0.000
7.400	1.440	7.857	38.85	0.000	0.000	0.000	0.000
7.500	1.450	8.002	41.15	0.000	0.000	0.000	0.000
7.600	1.460	8.147	43.51	0.000	0.000	0.000	0.000
7.700	1.470	8.294	45.91	0.000	0.000	0.000	0.000
7.800	1.480	8.442	48.36	0.000	0.000	0.000	0.000
7.900	1.490	8.590	50.86	0.000	0.000	0.000	0.000
8.000	1.501	8.740	53.40	0.000	0.000	0.000	0.000
8.100	1.511	8.891	999.0	0.000	0.000	0.000	0.000

DRAFT

HMB 16 (was 17)

Depth: 10.1 ft.
Element Flows To:
Outlet 1 Outlet 2
POC 17/18

SSD Table Hydraulic Table

Stage (ft)	Area (ac)	Volume (ac-ft)	Manual	NotUsed	NotUsed	NotUsed	NotUsed
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.010	1.560	0.016	0.002	0.000	0.000	0.000	0.000
0.100	1.570	0.158	0.053	0.000	0.000	0.000	0.000
0.200	1.581	0.316	0.149	0.000	0.000	0.000	0.000
0.300	1.592	0.474	0.274	0.000	0.000	0.000	0.000
0.400	1.603	0.633	0.421	0.000	0.000	0.000	0.000
0.500	1.614	0.794	0.542	0.000	0.000	0.000	0.000
0.600	1.625	0.956	0.628	0.000	0.000	0.000	0.000
0.700	1.636	1.118	0.703	0.000	0.000	0.000	0.000
0.800	1.648	1.282	0.772	0.000	0.000	0.000	0.000
0.900	1.659	1.447	0.834	0.000	0.000	0.000	0.000
1.000	1.670	1.614	0.893	0.000	0.000	0.000	0.000
1.100	1.681	1.781	0.947	0.000	0.000	0.000	0.000
1.200	1.692	1.949	0.999	0.000	0.000	0.000	0.000
1.300	1.703	2.119	1.048	0.000	0.000	0.000	0.000
1.400	1.714	2.289	1.095	0.000	0.000	0.000	0.000
1.500	1.725	2.461	1.140	0.000	0.000	0.000	0.000
1.600	1.737	2.634	1.183	0.000	0.000	0.000	0.000
1.700	1.748	2.808	1.225	0.000	0.000	0.000	0.000
1.800	1.759	2.983	1.266	0.000	0.000	0.000	0.000
1.900	1.770	3.159	1.305	0.000	0.000	0.000	0.000
2.000	1.781	3.337	1.343	0.000	0.000	0.000	0.000
2.100	1.792	3.515	1.485	0.000	0.000	0.000	0.000
2.200	1.803	3.695	1.714	0.000	0.000	0.000	0.000
2.300	1.815	3.875	1.998	0.000	0.000	0.000	0.000
2.400	1.826	4.057	2.327	0.000	0.000	0.000	0.000
2.500	1.837	4.240	2.696	0.000	0.000	0.000	0.000
2.600	1.848	4.424	3.099	0.000	0.000	0.000	0.000
2.700	1.859	4.609	3.534	0.000	0.000	0.000	0.000
2.800	1.870	4.796	3.998	0.000	0.000	0.000	0.000
2.900	1.881	4.983	4.489	0.000	0.000	0.000	0.000
3.000	1.892	5.171	5.006	0.000	0.000	0.000	0.000
3.100	1.904	5.361	5.435	0.000	0.000	0.000	0.000
3.200	1.915	5.552	5.764	0.000	0.000	0.000	0.000
3.300	1.926	5.744	6.070	0.000	0.000	0.000	0.000
3.400	1.937	5.937	6.623	0.000	0.000	0.000	0.000
3.500	1.948	6.131	7.380	0.000	0.000	0.000	0.000
3.600	1.959	6.326	8.265	0.000	0.000	0.000	0.000
3.700	1.970	6.522	9.255	0.000	0.000	0.000	0.000
3.800	1.981	6.720	10.33	0.000	0.000	0.000	0.000
3.900	1.993	6.918	11.49	0.000	0.000	0.000	0.000
4.000	2.004	7.118	12.73	0.000	0.000	0.000	0.000
4.100	2.015	7.318	14.03	0.000	0.000	0.000	0.000
4.200	2.026	7.520	15.39	0.000	0.000	0.000	0.000
4.300	2.037	7.723	16.81	0.000	0.000	0.000	0.000
4.400	2.048	7.927	18.30	0.000	0.000	0.000	0.000
4.500	2.059	8.133	19.83	0.000	0.000	0.000	0.000

DRAFT

4.600	2.070	8.339	21.42	0.000	0.000	0.000	0.000
4.700	2.082	8.547	23.06	0.000	0.000	0.000	0.000
4.800	2.093	8.755	24.75	0.000	0.000	0.000	0.000
4.900	2.104	8.965	26.48	0.000	0.000	0.000	0.000
5.000	2.115	9.176	28.26	0.000	0.000	0.000	0.000
5.100	2.126	9.388	30.09	0.000	0.000	0.000	0.000
5.200	2.137	9.601	31.96	0.000	0.000	0.000	0.000
5.300	2.148	9.815	33.76	0.000	0.000	0.000	0.000
5.400	2.160	10.03	35.01	0.000	0.000	0.000	0.000
5.500	2.171	10.25	36.22	0.000	0.000	0.000	0.000
5.600	2.182	10.46	37.38	0.000	0.000	0.000	0.000
5.700	2.193	10.68	38.51	0.000	0.000	0.000	0.000
5.800	2.204	10.90	39.59	0.000	0.000	0.000	0.000
5.900	2.215	11.12	40.65	0.000	0.000	0.000	0.000
6.000	2.226	11.35	41.68	0.000	0.000	0.000	0.000
6.100	2.237	11.57	42.68	0.000	0.000	0.000	0.000
6.200	2.249	11.79	43.66	0.000	0.000	0.000	0.000
6.300	2.260	12.02	44.61	0.000	0.000	0.000	0.000
6.400	2.271	12.24	45.54	0.000	0.000	0.000	0.000
6.500	2.282	12.47	46.45	0.000	0.000	0.000	0.000
6.600	2.293	12.70	47.35	0.000	0.000	0.000	0.000
6.700	2.304	12.93	48.22	0.000	0.000	0.000	0.000
6.800	2.315	13.16	49.08	0.000	0.000	0.000	0.000
6.900	2.326	13.39	49.93	0.000	0.000	0.000	0.000
7.000	2.338	13.63	50.76	0.000	0.000	0.000	0.000
7.100	2.349	13.86	51.57	0.000	0.000	0.000	0.000
7.200	2.360	14.10	52.37	0.000	0.000	0.000	0.000
7.300	2.371	14.33	53.16	0.000	0.000	0.000	0.000
7.400	2.382	14.57	53.94	0.000	0.000	0.000	0.000
7.500	2.393	14.81	54.71	0.000	0.000	0.000	0.000
7.600	2.404	15.05	55.46	0.000	0.000	0.000	0.000
7.700	2.415	15.29	56.21	0.000	0.000	0.000	0.000
7.800	2.427	15.53	56.94	0.000	0.000	0.000	0.000
7.900	2.438	15.78	57.67	0.000	0.000	0.000	0.000
8.000	2.449	16.02	58.38	0.000	0.000	0.000	0.000
8.200	2.471	16.51	59.79	0.000	0.000	0.000	0.000
8.400	2.493	17.01	61.16	0.000	0.000	0.000	0.000
8.600	2.516	17.51	62.50	0.000	0.000	0.000	0.000
8.800	2.538	18.01	63.81	0.000	0.000	0.000	0.000
9.000	2.560	18.52	65.10	0.000	0.000	0.000	0.000
9.200	2.582	19.04	66.36	0.000	0.000	0.000	0.000
9.400	2.605	19.56	68.49	0.000	0.000	0.000	0.000
9.600	2.627	20.08	71.33	0.000	0.000	0.000	0.000
9.800	2.649	20.61	74.64	0.000	0.000	0.000	0.000
10.000	2.671	21.14	78.32	0.000	0.000	0.000	0.000
10.10	2.683	21.41	999.0	0.000	0.000	0.000	0.000

DRAFT

POC 6

Bottom Length: 1704.00 ft.
Bottom Width: 20.00 ft.
Manning's n: 0.035
Channel bottom slope 1: 0.0088 To 1
Channel Left side slope 0: 0.25 To 1
Channel right side slope 2: 0.25 To 1
Discharge Structure
Riser Height: 0 ft.
Riser Diameter: 0 in.
Element Flows To:
Outlet 1 Outlet 2
Upstream POC 5

Channel Hydraulic Table

Stage(ft)	Area(ac)	Volume(ac-ft)	Discharge(cfs)	Infilt(cfs)
0.0000	0.782	0.000	0.000	0.000
0.1111	0.784	0.087	2.380	0.000
0.2222	0.786	0.174	7.518	0.000
0.3333	0.788	0.261	14.70	0.000
0.4444	0.791	0.349	23.62	0.000
0.5556	0.793	0.437	34.10	0.000
0.6667	0.795	0.525	45.98	0.000
0.7778	0.797	0.614	59.17	0.000
0.8889	0.799	0.703	73.57	0.000
1.0000	0.801	0.792	89.11	0.000
1.1111	0.804	0.881	105.7	0.000
1.2222	0.806	0.970	123.3	0.000
1.3333	0.808	1.060	141.9	0.000
1.4444	0.810	1.150	161.5	0.000
1.5556	0.812	1.240	181.9	0.000
1.6667	0.815	1.331	203.2	0.000
1.7778	0.817	1.421	225.4	0.000
1.8889	0.819	1.512	248.3	0.000
2.0000	0.821	1.603	272.0	0.000
2.1111	0.823	1.695	296.5	0.000
2.2222	0.825	1.786	321.6	0.000
2.3333	0.828	1.878	347.5	0.000
2.4444	0.830	1.970	374.1	0.000
2.5556	0.832	2.063	401.3	0.000
2.6667	0.834	2.155	429.2	0.000
2.7778	0.836	2.248	457.7	0.000
2.8889	0.838	2.341	486.8	0.000
3.0000	0.841	2.435	516.6	0.000
3.1111	0.843	2.528	546.9	0.000
3.2222	0.845	2.622	577.8	0.000
3.3333	0.847	2.716	609.3	0.000
3.4444	0.849	2.810	641.3	0.000
3.5556	0.851	2.905	673.8	0.000
3.6667	0.854	3.000	706.9	0.000
3.7778	0.856	3.095	740.5	0.000
3.8889	0.858	3.190	774.7	0.000
4.0000	0.860	3.286	809.3	0.000
4.1111	0.862	3.381	844.4	0.000
4.2222	0.865	3.477	880.0	0.000
4.3333	0.867	3.574	916.1	0.000

DRAFT

4.4444	0.869	3.670	952.7	0.000
4.5556	0.871	3.767	989.7	0.000
4.6667	0.873	3.864	1027.	0.000
4.7778	0.875	3.961	1065.	0.000
4.8889	0.878	4.058	1103.	0.000
5.0000	0.880	4.156	1142.	0.000
5.1111	0.882	4.254	1181.	0.000
5.2222	0.884	4.352	1221.	0.000
5.3333	0.886	4.450	1261.	0.000
5.4444	0.888	4.549	1301.	0.000
5.5556	0.891	4.648	1342.	0.000
5.6667	0.893	4.747	1384.	0.000
5.7778	0.895	4.847	1426.	0.000
5.8889	0.897	4.946	1468.	0.000
6.0000	0.899	5.046	1510.	0.000
6.1111	0.902	5.146	1553.	0.000
6.2222	0.904	5.246	1597.	0.000
6.3333	0.906	5.347	1640.	0.000
6.4444	0.908	5.448	1684.	0.000
6.5556	0.910	5.549	1729.	0.000
6.6667	0.912	5.650	1774.	0.000
6.7778	0.915	5.752	1819.	0.000
6.8889	0.917	5.854	1865.	0.000
7.0000	0.919	5.956	1911.	0.000
7.1111	0.921	6.058	1957.	0.000
7.2222	0.923	6.160	2004.	0.000
7.3333	0.925	6.263	2051.	0.000
7.4444	0.928	6.366	2098.	0.000
7.5556	0.930	6.469	2146.	0.000
7.6667	0.932	6.573	2194.	0.000
7.7778	0.934	6.677	2242.	0.000
7.8889	0.936	6.780	2291.	0.000
8.0000	0.938	6.885	2340.	0.000
8.1111	0.941	6.989	2390.	0.000
8.2222	0.943	7.094	2440.	0.000
8.3333	0.945	7.199	2490.	0.000
8.4444	0.947	7.304	2540.	0.000
8.5556	0.949	7.409	2591.	0.000
8.6667	0.952	7.515	2642.	0.000
8.7778	0.954	7.621	2694.	0.000
8.8889	0.956	7.727	2746.	0.000
9.0000	0.958	7.833	2798.	0.000
9.1111	0.960	7.940	2850.	0.000
9.2222	0.962	8.047	2903.	0.000
9.3333	0.965	8.154	2956.	0.000
9.4444	0.967	8.261	3010.	0.000
9.5556	0.969	8.369	3063.	0.000
9.6667	0.971	8.477	3117.	0.000
9.7778	0.973	8.585	3172.	0.000
9.8889	0.975	8.693	3227.	0.000
10.000	0.978	8.802	3282.	0.000
10.111	0.980	8.910	3337.	0.000

DRAFT

SF

Bottom Length: 4611.00 ft.
Bottom Width: 15.00 ft.
Manning's n: 0.035
Channel bottom slope 1: 0.0078 To 1
Channel Left side slope 0: 0.25 To 1
Channel right side slope 2: 0.25 To 1
Discharge Structure
Riser Height: 0 ft.
Riser Diameter: 0 in.
Element Flows To:
Outlet 1 Outlet 2
POC 6

Channel Hydraulic Table

Stage(ft)	Area(ac)	Volume(ac-ft)	Discharge(cfs)	Infilt(cfs)
0.0000	1.587	0.000	0.000	0.000
0.0889	1.592	0.141	0.992	0.000
0.1778	1.597	0.283	3.134	0.000
0.2667	1.601	0.425	6.128	0.000
0.3556	1.606	0.567	9.845	0.000
0.4444	1.611	0.710	14.20	0.000
0.5333	1.616	0.854	19.15	0.000
0.6222	1.620	0.998	24.63	0.000
0.7111	1.625	1.142	30.62	0.000
0.8000	1.630	1.287	37.07	0.000
0.8889	1.634	1.432	43.98	0.000
0.9778	1.639	1.577	51.30	0.000
1.0667	1.644	1.723	59.03	0.000
1.1556	1.649	1.870	67.14	0.000
1.2444	1.653	2.016	75.63	0.000
1.3333	1.658	2.164	84.46	0.000
1.4222	1.663	2.311	93.64	0.000
1.5111	1.667	2.459	103.1	0.000
1.6000	1.672	2.608	112.9	0.000
1.6889	1.677	2.757	123.1	0.000
1.7778	1.681	2.906	133.5	0.000
1.8667	1.686	3.056	144.2	0.000
1.9556	1.691	3.206	155.2	0.000
2.0444	1.696	3.356	166.5	0.000
2.1333	1.700	3.507	178.0	0.000
2.2222	1.705	3.659	189.8	0.000
2.3111	1.710	3.811	201.8	0.000
2.4000	1.714	3.963	214.1	0.000
2.4889	1.719	4.115	226.7	0.000
2.5778	1.724	4.268	239.5	0.000
2.6667	1.729	4.422	252.5	0.000
2.7556	1.733	4.576	265.7	0.000
2.8444	1.738	4.730	279.2	0.000
2.9333	1.743	4.885	292.8	0.000
3.0222	1.747	5.040	306.7	0.000
3.1111	1.752	5.196	320.8	0.000
3.2000	1.757	5.352	335.1	0.000
3.2889	1.761	5.508	349.6	0.000
3.3778	1.766	5.665	364.3	0.000
3.4667	1.771	5.822	379.2	0.000

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3.5556	1.776	5.980	394.3	0.000
3.6444	1.780	6.138	409.6	0.000
3.7333	1.785	6.296	425.1	0.000
3.8222	1.790	6.455	440.8	0.000
3.9111	1.794	6.615	456.6	0.000
4.0000	1.799	6.774	472.6	0.000
4.0889	1.804	6.934	488.8	0.000
4.1778	1.809	7.095	505.2	0.000
4.2667	1.813	7.256	521.8	0.000
4.3556	1.818	7.417	538.5	0.000
4.4444	1.823	7.579	555.4	0.000
4.5333	1.827	7.742	572.5	0.000
4.6222	1.832	7.904	589.7	0.000
4.7111	1.837	8.067	607.1	0.000
4.8000	1.841	8.231	624.7	0.000
4.8889	1.846	8.395	642.4	0.000
4.9778	1.851	8.559	660.3	0.000
5.0667	1.856	8.724	678.3	0.000
5.1556	1.860	8.889	696.5	0.000
5.2444	1.865	9.055	714.9	0.000
5.3333	1.870	9.221	733.4	0.000
5.4222	1.874	9.387	752.1	0.000
5.5111	1.879	9.554	770.9	0.000
5.6000	1.884	9.721	789.8	0.000
5.6889	1.888	9.889	809.0	0.000
5.7778	1.893	10.05	828.2	0.000
5.8667	1.898	10.22	847.7	0.000
5.9556	1.903	10.39	867.2	0.000
6.0444	1.907	10.56	886.9	0.000
6.1333	1.912	10.73	906.8	0.000
6.2222	1.917	10.90	926.8	0.000
6.3111	1.921	11.07	946.9	0.000
6.4000	1.926	11.24	967.2	0.000
6.4889	1.931	11.41	987.6	0.000
6.5778	1.936	11.58	1008.	0.000
6.6667	1.940	11.76	1028.	0.000
6.7556	1.945	11.93	1049.	0.000
6.8444	1.950	12.10	1070.	0.000
6.9333	1.954	12.28	1091.	0.000
7.0222	1.959	12.45	1113.	0.000
7.1111	1.964	12.62	1134.	0.000
7.2000	1.968	12.80	1156.	0.000
7.2889	1.973	12.97	1177.	0.000
7.3778	1.978	13.15	1199.	0.000
7.4667	1.983	13.33	1221.	0.000
7.5556	1.987	13.50	1243.	0.000
7.6444	1.992	13.68	1265.	0.000
7.7333	1.997	13.86	1288.	0.000
7.8222	2.001	14.04	1310.	0.000
7.9111	2.006	14.21	1333.	0.000
8.0000	2.011	14.39	1355.	0.000
8.0889	2.016	14.57	1378.	0.000

DRAFT

POC 7

Bottom Length: 227.00 ft.
Bottom Width: 7.00 ft.
Manning's n: 0.035
Channel bottom slope 1: 0.0264 To 1
Channel Left side slope 0: 0.5 To 1
Channel right side slope 2: 0.5 To 1
Discharge Structure
Riser Height: 0 ft.
Riser Diameter: 0 in.
Element Flows To:
Outlet 1 Outlet 2
NF

Channel Hydraulic Table

Stage(ft)	Area(ac)	Volume(ac-ft)	Discharge(cfs)	Infilt(cfs)
0.0000	0.036	0.000	0.000	0.000
0.0889	0.036	0.003	0.850	0.000
0.1778	0.037	0.006	2.678	0.000
0.2667	0.037	0.009	5.227	0.000
0.3556	0.038	0.013	8.385	0.000
0.4444	0.038	0.016	12.08	0.000
0.5333	0.039	0.020	16.27	0.000
0.6222	0.039	0.023	20.92	0.000
0.7111	0.040	0.027	25.99	0.000
0.8000	0.040	0.030	31.46	0.000
0.8889	0.041	0.034	37.32	0.000
0.9778	0.041	0.038	43.54	0.000
1.0667	0.042	0.041	50.11	0.000
1.1556	0.042	0.045	57.03	0.000
1.2444	0.043	0.049	64.27	0.000
1.3333	0.043	0.053	71.84	0.000
1.4222	0.043	0.057	79.71	0.000
1.5111	0.044	0.061	87.90	0.000
1.6000	0.044	0.065	96.38	0.000
1.6889	0.045	0.069	105.1	0.000
1.7778	0.045	0.073	114.2	0.000
1.8667	0.046	0.077	123.5	0.000
1.9556	0.046	0.081	133.2	0.000
2.0444	0.047	0.085	143.1	0.000
2.1333	0.047	0.089	153.3	0.000
2.2222	0.048	0.094	163.8	0.000
2.3111	0.048	0.098	174.5	0.000
2.4000	0.049	0.102	185.5	0.000
2.4889	0.049	0.107	196.8	0.000
2.5778	0.049	0.111	208.3	0.000
2.6667	0.050	0.115	220.1	0.000
2.7556	0.050	0.120	232.2	0.000
2.8444	0.051	0.124	244.5	0.000
2.9333	0.051	0.129	257.1	0.000
3.0222	0.052	0.134	270.0	0.000
3.1111	0.052	0.138	283.1	0.000
3.2000	0.053	0.143	296.5	0.000
3.2889	0.053	0.148	310.1	0.000
3.3778	0.054	0.153	324.0	0.000
3.4667	0.054	0.157	338.2	0.000

DRAFT

3.5556	0.055	0.162	352.6	0.000
3.6444	0.055	0.167	367.2	0.000
3.7333	0.056	0.172	382.2	0.000
3.8222	0.056	0.177	397.4	0.000
3.9111	0.056	0.182	412.8	0.000
4.0000	0.057	0.187	428.5	0.000
4.0889	0.057	0.192	444.5	0.000
4.1778	0.058	0.198	460.7	0.000
4.2667	0.058	0.203	477.2	0.000
4.3556	0.059	0.208	494.0	0.000
4.4444	0.059	0.213	511.0	0.000
4.5333	0.060	0.219	528.2	0.000
4.6222	0.060	0.224	545.8	0.000
4.7111	0.061	0.229	563.6	0.000
4.8000	0.061	0.235	581.6	0.000
4.8889	0.062	0.240	599.9	0.000
4.9778	0.062	0.246	618.5	0.000
5.0667	0.063	0.251	637.4	0.000
5.1556	0.063	0.257	656.5	0.000
5.2444	0.063	0.263	675.9	0.000
5.3333	0.064	0.268	695.5	0.000
5.4222	0.064	0.274	715.4	0.000
5.5111	0.065	0.280	735.6	0.000
5.6000	0.065	0.286	756.1	0.000
5.6889	0.066	0.292	776.8	0.000
5.7778	0.066	0.298	797.8	0.000
5.8667	0.067	0.303	819.1	0.000
5.9556	0.067	0.309	840.6	0.000
6.0444	0.068	0.315	862.4	0.000
6.1333	0.068	0.322	884.5	0.000
6.2222	0.069	0.328	906.8	0.000
6.3111	0.069	0.334	929.5	0.000
6.4000	0.069	0.340	952.4	0.000
6.4889	0.070	0.346	975.5	0.000
6.5778	0.070	0.353	999.0	0.000
6.6667	0.071	0.359	1022.	0.000
6.7556	0.071	0.365	1046.	0.000
6.8444	0.072	0.372	1071.	0.000
6.9333	0.072	0.378	1095.	0.000
7.0222	0.073	0.385	1120.	0.000
7.1111	0.073	0.391	1145.	0.000
7.2000	0.074	0.398	1171.	0.000
7.2889	0.074	0.404	1196.	0.000
7.3778	0.075	0.411	1222.	0.000
7.4667	0.075	0.418	1249.	0.000
7.5556	0.076	0.424	1275.	0.000
7.6444	0.076	0.431	1302.	0.000
7.7333	0.076	0.438	1329.	0.000
7.8222	0.077	0.445	1357.	0.000
7.9111	0.077	0.452	1384.	0.000
8.0000	0.078	0.459	1412.	0.000
8.0889	0.078	0.466	1441.	0.000

DRAFT

NF

Bottom Length: 759.00 ft.
Bottom Width: 10.00 ft.
Manning's n: 0.035
Channel bottom slope 1: 0.0264 To 1
Channel Left side slope 0: 0.5 To 1
Channel right side slope 2: 0.5 To 1
Discharge Structure
Riser Height: 0 ft.
Riser Diameter: 0 in.
Element Flows To:
Outlet 1 Outlet 2
POC 6

Channel Hydraulic Table

Stage(ft)	Area(ac)	Volume(ac-ft)	Discharge(cfs)	Infilt(cfs)
0.0000	0.174	0.000	0.000	0.000
0.0889	0.175	0.015	1.420	0.000
0.1778	0.177	0.031	4.485	0.000
0.2667	0.178	0.047	8.769	0.000
0.3556	0.180	0.063	14.09	0.000
0.4444	0.182	0.079	20.34	0.000
0.5333	0.183	0.095	27.43	0.000
0.6222	0.185	0.111	35.31	0.000
0.7111	0.186	0.128	43.92	0.000
0.8000	0.188	0.145	53.22	0.000
0.8889	0.189	0.161	63.18	0.000
0.9778	0.191	0.178	73.77	0.000
1.0667	0.192	0.195	84.96	0.000
1.1556	0.194	0.213	96.74	0.000
1.2444	0.195	0.230	109.0	0.000
1.3333	0.197	0.247	121.9	0.000
1.4222	0.199	0.265	135.3	0.000
1.5111	0.200	0.283	149.3	0.000
1.6000	0.202	0.301	163.7	0.000
1.6889	0.203	0.319	178.7	0.000
1.7778	0.205	0.337	194.1	0.000
1.8667	0.206	0.355	210.0	0.000
1.9556	0.208	0.374	226.3	0.000
2.0444	0.209	0.392	243.1	0.000
2.1333	0.211	0.411	260.4	0.000
2.2222	0.213	0.430	278.1	0.000
2.3111	0.214	0.449	296.3	0.000
2.4000	0.216	0.468	314.9	0.000
2.4889	0.217	0.487	333.9	0.000
2.5778	0.219	0.507	353.3	0.000
2.6667	0.220	0.526	373.2	0.000
2.7556	0.222	0.546	393.5	0.000
2.8444	0.223	0.566	414.2	0.000
2.9333	0.225	0.586	435.3	0.000
3.0222	0.227	0.606	456.8	0.000
3.1111	0.228	0.626	478.8	0.000
3.2000	0.230	0.646	501.1	0.000
3.2889	0.231	0.667	523.8	0.000
3.3778	0.233	0.688	546.9	0.000
3.4667	0.234	0.708	570.5	0.000

DRAFT

3.5556	0.236	0.729	594.4	0.000
3.6444	0.237	0.750	618.7	0.000
3.7333	0.239	0.772	643.4	0.000
3.8222	0.240	0.793	668.5	0.000
3.9111	0.242	0.814	694.0	0.000
4.0000	0.244	0.836	719.9	0.000
4.0889	0.245	0.858	746.1	0.000
4.1778	0.247	0.880	772.8	0.000
4.2667	0.248	0.902	799.8	0.000
4.3556	0.250	0.924	827.3	0.000
4.4444	0.251	0.946	855.1	0.000
4.5333	0.253	0.969	883.3	0.000
4.6222	0.254	0.991	911.8	0.000
4.7111	0.256	1.014	940.8	0.000
4.8000	0.258	1.037	970.2	0.000
4.8889	0.259	1.060	999.9	0.000
4.9778	0.261	1.083	1030.	0.000
5.0667	0.262	1.106	1060.	0.000
5.1556	0.264	1.130	1091.	0.000
5.2444	0.265	1.153	1122.	0.000
5.3333	0.267	1.177	1154.	0.000
5.4222	0.268	1.201	1186.	0.000
5.5111	0.270	1.225	1218.	0.000
5.6000	0.271	1.249	1251.	0.000
5.6889	0.273	1.273	1284.	0.000
5.7778	0.275	1.297	1318.	0.000
5.8667	0.276	1.322	1352.	0.000
5.9556	0.278	1.347	1386.	0.000
6.0444	0.279	1.371	1421.	0.000
6.1333	0.281	1.396	1456.	0.000
6.2222	0.282	1.421	1491.	0.000
6.3111	0.284	1.447	1527.	0.000
6.4000	0.285	1.472	1564.	0.000
6.4889	0.287	1.497	1600.	0.000
6.5778	0.289	1.523	1637.	0.000
6.6667	0.290	1.549	1675.	0.000
6.7556	0.292	1.575	1713.	0.000
6.8444	0.293	1.601	1751.	0.000
6.9333	0.295	1.627	1789.	0.000
7.0222	0.296	1.653	1828.	0.000
7.1111	0.298	1.680	1868.	0.000
7.2000	0.299	1.706	1907.	0.000
7.2889	0.301	1.733	1948.	0.000
7.3778	0.303	1.760	1988.	0.000
7.4667	0.304	1.787	2029.	0.000
7.5556	0.306	1.814	2070.	0.000
7.6444	0.307	1.841	2112.	0.000
7.7333	0.309	1.869	2154.	0.000
7.8222	0.310	1.896	2197.	0.000
7.9111	0.312	1.924	2240.	0.000
8.0000	0.313	1.952	2283.	0.000
8.0889	0.315	1.980	2327.	0.000

DRAFT

HMB 8b

Depth: 20.1 ft.
Element Flows To:
Outlet 1 Outlet 2
Channel 8

SSD Table Hydraulic Table

Stage (ft)	Area (ac)	Volume (ac-ft)	Manual	NotUsed	NotUsed	NotUsed	NotUsed
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.010	1.500	0.015	0.002	0.000	0.000	0.000	0.000
0.250	1.522	0.375	0.278	0.000	0.000	0.000	0.000
0.500	1.545	0.758	0.785	0.000	0.000	0.000	0.000
0.750	1.568	1.148	1.381	0.000	0.000	0.000	0.000
1.000	1.591	1.543	1.747	0.000	0.000	0.000	0.000
1.250	1.614	1.944	2.049	0.000	0.000	0.000	0.000
1.500	1.637	2.351	2.311	0.000	0.000	0.000	0.000
1.750	1.660	2.764	2.547	0.000	0.000	0.000	0.000
2.000	1.683	3.182	2.763	0.000	0.000	0.000	0.000
2.250	1.706	3.606	2.963	0.000	0.000	0.000	0.000
2.500	1.729	4.035	3.150	0.000	0.000	0.000	0.000
2.750	1.752	4.471	3.327	0.000	0.000	0.000	0.000
3.000	1.775	4.912	3.495	0.000	0.000	0.000	0.000
3.250	1.798	5.358	3.655	0.000	0.000	0.000	0.000
3.500	1.821	5.811	3.808	0.000	0.000	0.000	0.000
3.750	1.844	6.269	3.956	0.000	0.000	0.000	0.000
4.000	1.867	6.733	4.098	0.000	0.000	0.000	0.000
4.250	1.890	7.203	4.235	0.000	0.000	0.000	0.000
4.500	1.912	7.678	4.368	0.000	0.000	0.000	0.000
4.750	1.935	8.159	4.497	0.000	0.000	0.000	0.000
5.000	1.958	8.646	4.623	0.000	0.000	0.000	0.000
5.250	1.981	9.138	4.745	0.000	0.000	0.000	0.000
5.500	2.004	9.636	4.864	0.000	0.000	0.000	0.000
5.750	2.027	10.14	4.981	0.000	0.000	0.000	0.000
6.000	2.050	10.65	5.094	0.000	0.000	0.000	0.000
6.250	2.073	11.17	5.205	0.000	0.000	0.000	0.000
6.500	2.096	11.69	5.314	0.000	0.000	0.000	0.000
6.750	2.119	12.21	5.421	0.000	0.000	0.000	0.000
7.000	2.142	12.75	5.525	0.000	0.000	0.000	0.000
7.250	2.164	13.28	5.628	0.000	0.000	0.000	0.000
7.500	2.187	13.83	5.729	0.000	0.000	0.000	0.000
7.750	2.210	14.38	5.828	0.000	0.000	0.000	0.000
8.000	2.233	14.93	5.925	0.000	0.000	0.000	0.000
8.250	2.256	15.49	6.021	0.000	0.000	0.000	0.000
8.500	2.279	16.06	6.116	0.000	0.000	0.000	0.000
8.750	2.302	16.63	6.208	0.000	0.000	0.000	0.000
9.000	2.325	17.21	6.300	0.000	0.000	0.000	0.000
9.250	2.348	17.80	6.390	0.000	0.000	0.000	0.000
9.500	2.370	18.39	6.479	0.000	0.000	0.000	0.000
9.750	2.393	18.98	6.567	0.000	0.000	0.000	0.000
10.000	2.416	19.58	6.653	0.000	0.000	0.000	0.000
10.25	2.439	20.19	6.739	0.000	0.000	0.000	0.000
10.50	2.462	20.80	7.172	0.000	0.000	0.000	0.000
10.75	2.485	21.42	8.423	0.000	0.000	0.000	0.000
11.00	2.508	22.04	10.13	0.000	0.000	0.000	0.000
11.25	2.530	22.67	12.19	0.000	0.000	0.000	0.000

DRAFT

11.50	2.553	23.31	14.54	0.000	0.000	0.000	0.000
11.75	2.576	23.95	17.16	0.000	0.000	0.000	0.000
12.00	2.599	24.60	20.01	0.000	0.000	0.000	0.000
12.25	2.622	25.25	22.99	0.000	0.000	0.000	0.000
12.50	2.645	25.91	24.91	0.000	0.000	0.000	0.000
12.75	2.668	26.57	26.65	0.000	0.000	0.000	0.000
13.00	2.690	27.24	29.33	0.000	0.000	0.000	0.000
13.25	2.713	27.92	33.37	0.000	0.000	0.000	0.000
13.50	2.736	28.60	38.19	0.000	0.000	0.000	0.000
13.75	2.759	29.28	43.61	0.000	0.000	0.000	0.000
14.00	2.782	29.98	49.54	0.000	0.000	0.000	0.000
14.25	2.805	30.67	55.94	0.000	0.000	0.000	0.000
14.50	2.827	31.38	62.75	0.000	0.000	0.000	0.000
14.75	2.850	32.09	69.96	0.000	0.000	0.000	0.000
15.00	2.873	32.80	77.52	0.000	0.000	0.000	0.000
15.25	2.896	33.52	85.44	0.000	0.000	0.000	0.000
15.50	2.919	34.25	93.68	0.000	0.000	0.000	0.000
15.75	2.941	34.98	102.2	0.000	0.000	0.000	0.000
16.00	2.964	35.72	111.1	0.000	0.000	0.000	0.000
16.25	2.987	36.47	120.2	0.000	0.000	0.000	0.000
16.50	3.010	37.22	129.7	0.000	0.000	0.000	0.000
16.75	3.033	37.97	139.4	0.000	0.000	0.000	0.000
17.00	3.056	38.73	149.3	0.000	0.000	0.000	0.000
17.25	3.078	39.50	159.6	0.000	0.000	0.000	0.000
17.50	3.101	40.27	170.0	0.000	0.000	0.000	0.000
17.75	3.124	41.05	180.7	0.000	0.000	0.000	0.000
18.00	3.147	41.83	191.7	0.000	0.000	0.000	0.000
18.25	3.170	42.62	202.9	0.000	0.000	0.000	0.000
18.50	3.192	43.42	214.3	0.000	0.000	0.000	0.000
18.75	3.215	44.22	225.9	0.000	0.000	0.000	0.000
19.00	3.238	45.03	237.7	0.000	0.000	0.000	0.000
19.25	3.261	45.84	249.8	0.000	0.000	0.000	0.000
19.50	3.283	46.66	262.1	0.000	0.000	0.000	0.000
19.75	3.306	47.48	274.6	0.000	0.000	0.000	0.000
20.00	3.329	48.31	290.8	0.000	0.000	0.000	0.000
20.10	3.400	48.40	999.0	0.000	0.000	0.000	0.000

DRAFT

HMB 7

Depth: 8.1 ft.
Element Flows To:
Outlet 1 Outlet 2
POC 7

SSD Table Hydraulic Table

Stage (ft)	Area (ac)	Volume (ac-ft)	Manual	NotUsed	NotUsed	NotUsed	NotUsed
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.010	0.100	0.001	0.000	0.000	0.000	0.000	0.000
0.100	0.104	0.010	0.009	0.000	0.000	0.000	0.000
0.200	0.108	0.021	0.023	0.000	0.000	0.000	0.000
0.300	0.112	0.032	0.031	0.000	0.000	0.000	0.000
0.400	0.116	0.044	0.038	0.000	0.000	0.000	0.000
0.500	0.120	0.056	0.043	0.000	0.000	0.000	0.000
0.600	0.124	0.068	0.048	0.000	0.000	0.000	0.000
0.700	0.128	0.081	0.053	0.000	0.000	0.000	0.000
0.800	0.132	0.094	0.057	0.000	0.000	0.000	0.000
0.900	0.135	0.107	0.060	0.000	0.000	0.000	0.000
1.000	0.139	0.121	0.064	0.000	0.000	0.000	0.000
1.100	0.143	0.135	0.067	0.000	0.000	0.000	0.000
1.200	0.147	0.150	0.071	0.000	0.000	0.000	0.000
1.300	0.151	0.165	0.074	0.000	0.000	0.000	0.000
1.400	0.155	0.180	0.077	0.000	0.000	0.000	0.000
1.500	0.159	0.196	0.080	0.000	0.000	0.000	0.000
1.600	0.162	0.212	0.109	0.000	0.000	0.000	0.000
1.700	0.166	0.228	0.159	0.000	0.000	0.000	0.000
1.800	0.170	0.245	0.224	0.000	0.000	0.000	0.000
1.900	0.174	0.262	0.301	0.000	0.000	0.000	0.000
2.000	0.178	0.280	0.387	0.000	0.000	0.000	0.000
2.100	0.182	0.298	0.451	0.000	0.000	0.000	0.000
2.200	0.185	0.316	0.501	0.000	0.000	0.000	0.000
2.300	0.189	0.335	0.546	0.000	0.000	0.000	0.000
2.400	0.193	0.354	0.587	0.000	0.000	0.000	0.000
2.500	0.197	0.373	0.625	0.000	0.000	0.000	0.000
2.600	0.201	0.393	0.766	0.000	0.000	0.000	0.000
2.700	0.204	0.413	0.993	0.000	0.000	0.000	0.000
2.800	0.208	0.434	1.274	0.000	0.000	0.000	0.000
2.900	0.212	0.455	1.600	0.000	0.000	0.000	0.000
3.000	0.216	0.476	1.964	0.000	0.000	0.000	0.000
3.100	0.220	0.498	2.363	0.000	0.000	0.000	0.000
3.200	0.223	0.520	2.793	0.000	0.000	0.000	0.000
3.300	0.227	0.542	3.252	0.000	0.000	0.000	0.000
3.400	0.231	0.565	3.738	0.000	0.000	0.000	0.000
3.500	0.235	0.588	4.250	0.000	0.000	0.000	0.000
3.600	0.238	0.612	4.786	0.000	0.000	0.000	0.000
3.700	0.242	0.636	5.345	0.000	0.000	0.000	0.000
3.800	0.246	0.660	5.926	0.000	0.000	0.000	0.000
3.900	0.250	0.685	6.529	0.000	0.000	0.000	0.000
4.000	0.253	0.710	7.153	0.000	0.000	0.000	0.000
4.100	0.257	0.735	8.558	0.000	0.000	0.000	0.000
4.200	0.261	0.761	10.50	0.000	0.000	0.000	0.000
4.300	0.265	0.787	12.88	0.000	0.000	0.000	0.000
4.400	0.268	0.814	15.60	0.000	0.000	0.000	0.000
4.500	0.272	0.841	18.63	0.000	0.000	0.000	0.000

DRAFT

4.600	0.276	0.868	21.93	0.000	0.000	0.000	0.000
4.700	0.280	0.896	25.48	0.000	0.000	0.000	0.000
4.800	0.283	0.924	29.25	0.000	0.000	0.000	0.000
4.900	0.287	0.952	33.24	0.000	0.000	0.000	0.000
5.000	0.291	0.981	37.43	0.000	0.000	0.000	0.000
5.100	0.294	1.010	41.81	0.000	0.000	0.000	0.000
5.200	0.298	1.040	46.37	0.000	0.000	0.000	0.000
5.300	0.302	1.070	51.11	0.000	0.000	0.000	0.000
5.400	0.306	1.100	56.02	0.000	0.000	0.000	0.000
5.500	0.309	1.131	61.10	0.000	0.000	0.000	0.000
5.600	0.313	1.162	66.33	0.000	0.000	0.000	0.000
5.700	0.317	1.193	71.71	0.000	0.000	0.000	0.000
5.800	0.320	1.225	77.24	0.000	0.000	0.000	0.000
5.900	0.324	1.257	82.91	0.000	0.000	0.000	0.000
6.000	0.328	1.290	88.73	0.000	0.000	0.000	0.000
6.100	0.331	1.323	94.68	0.000	0.000	0.000	0.000
6.200	0.335	1.356	100.8	0.000	0.000	0.000	0.000
6.300	0.339	1.390	107.0	0.000	0.000	0.000	0.000
6.400	0.342	1.424	113.3	0.000	0.000	0.000	0.000
6.500	0.346	1.458	119.8	0.000	0.000	0.000	0.000
6.600	0.350	1.493	126.4	0.000	0.000	0.000	0.000
6.700	0.353	1.528	133.1	0.000	0.000	0.000	0.000
6.800	0.357	1.564	140.0	0.000	0.000	0.000	0.000
6.900	0.361	1.600	146.9	0.000	0.000	0.000	0.000
7.000	0.364	1.636	154.0	0.000	0.000	0.000	0.000
7.100	0.368	1.673	161.1	0.000	0.000	0.000	0.000
7.200	0.372	1.710	168.4	0.000	0.000	0.000	0.000
7.300	0.375	1.747	175.8	0.000	0.000	0.000	0.000
7.400	0.379	1.785	183.3	0.000	0.000	0.000	0.000
7.500	0.382	1.823	191.0	0.000	0.000	0.000	0.000
7.600	0.386	1.862	198.7	0.000	0.000	0.000	0.000
7.700	0.390	1.901	206.5	0.000	0.000	0.000	0.000
7.800	0.393	1.940	214.4	0.000	0.000	0.000	0.000
7.900	0.397	1.980	222.4	0.000	0.000	0.000	0.000
8.000	0.401	2.020	230.6	0.000	0.000	0.000	0.000
8.100	0.600	2.600	999.0	0.000	0.000	0.000	0.000

DRAFT

Urban 1

Bottom Length: 2254.00 ft.
Bottom Width: 6.00 ft.
Manning's n: 0.035
Channel bottom slope 1: 0.0142 To 1
Channel Left side slope 0: 0.5 To 1
Channel right side slope 2: 0.5 To 1
Discharge Structure
Riser Height: 0 ft.
Riser Diameter: 0 in.
Element Flows To:
Outlet 1 Outlet 2
POC 7

Channel Hydraulic Table

Stage(ft)	Area(ac)	Volume(ac-ft)	Discharge(cfs)	Infilt(cfs)
0.0000	0.310	0.000	0.000	0.000
0.0889	0.315	0.027	0.533	0.000
0.1778	0.319	0.056	1.679	0.000
0.2667	0.324	0.084	3.274	0.000
0.3556	0.328	0.113	5.248	0.000
0.4444	0.333	0.143	7.557	0.000
0.5333	0.338	0.172	10.17	0.000
0.6222	0.342	0.203	13.06	0.000
0.7111	0.347	0.233	16.22	0.000
0.8000	0.351	0.264	19.63	0.000
0.8889	0.356	0.296	23.28	0.000
0.9778	0.361	0.328	27.15	0.000
1.0667	0.365	0.360	31.25	0.000
1.1556	0.370	0.393	35.55	0.000
1.2444	0.374	0.426	40.06	0.000
1.3333	0.379	0.460	44.78	0.000
1.4222	0.384	0.493	49.69	0.000
1.5111	0.388	0.528	54.79	0.000
1.6000	0.393	0.563	60.09	0.000
1.6889	0.397	0.598	65.57	0.000
1.7778	0.402	0.633	71.23	0.000
1.8667	0.407	0.669	77.08	0.000
1.9556	0.411	0.706	83.10	0.000
2.0444	0.416	0.742	89.31	0.000
2.1333	0.420	0.780	95.69	0.000
2.2222	0.425	0.817	102.2	0.000
2.3111	0.430	0.855	108.9	0.000
2.4000	0.434	0.894	115.9	0.000
2.4889	0.439	0.933	122.9	0.000
2.5778	0.443	0.972	130.2	0.000
2.6667	0.448	1.011	137.6	0.000
2.7556	0.453	1.052	145.2	0.000
2.8444	0.457	1.092	153.0	0.000
2.9333	0.462	1.133	160.9	0.000
3.0222	0.466	1.174	169.0	0.000
3.1111	0.471	1.216	177.3	0.000
3.2000	0.476	1.258	185.8	0.000
3.2889	0.480	1.301	194.4	0.000
3.3778	0.485	1.343	203.2	0.000
3.4667	0.489	1.387	212.2	0.000

DRAFT

3.5556	0.494	1.431	221.3	0.000
3.6444	0.499	1.475	230.7	0.000
3.7333	0.503	1.519	240.1	0.000
3.8222	0.508	1.564	249.8	0.000
3.9111	0.512	1.610	259.6	0.000
4.0000	0.517	1.655	269.6	0.000
4.0889	0.522	1.702	279.8	0.000
4.1778	0.526	1.748	290.2	0.000
4.2667	0.531	1.795	300.7	0.000
4.3556	0.535	1.843	311.4	0.000
4.4444	0.540	1.891	322.3	0.000
4.5333	0.545	1.939	333.4	0.000
4.6222	0.549	1.987	344.6	0.000
4.7111	0.554	2.036	356.0	0.000
4.8000	0.558	2.086	367.6	0.000
4.8889	0.563	2.136	379.4	0.000
4.9778	0.568	2.186	391.3	0.000
5.0667	0.572	2.237	403.4	0.000
5.1556	0.577	2.288	415.7	0.000
5.2444	0.581	2.339	428.2	0.000
5.3333	0.586	2.391	440.9	0.000
5.4222	0.591	2.444	453.7	0.000
5.5111	0.595	2.496	466.8	0.000
5.6000	0.600	2.550	480.0	0.000
5.6889	0.604	2.603	493.4	0.000
5.7778	0.609	2.657	506.9	0.000
5.8667	0.614	2.712	520.7	0.000
5.9556	0.618	2.766	534.7	0.000
6.0444	0.623	2.822	548.8	0.000
6.1333	0.627	2.877	563.1	0.000
6.2222	0.632	2.933	577.6	0.000
6.3111	0.637	2.990	592.3	0.000
6.4000	0.641	3.046	607.2	0.000
6.4889	0.646	3.104	622.3	0.000
6.5778	0.650	3.161	637.6	0.000
6.6667	0.655	3.219	653.0	0.000
6.7556	0.660	3.278	668.7	0.000
6.8444	0.664	3.337	684.5	0.000
6.9333	0.669	3.396	700.6	0.000
7.0222	0.673	3.456	716.8	0.000
7.1111	0.678	3.516	733.2	0.000
7.2000	0.683	3.576	749.9	0.000
7.2889	0.687	3.637	766.7	0.000
7.3778	0.692	3.699	783.7	0.000
7.4667	0.696	3.760	800.9	0.000
7.5556	0.701	3.822	818.3	0.000
7.6444	0.706	3.885	835.9	0.000
7.7333	0.710	3.948	853.7	0.000
7.8222	0.715	4.011	871.8	0.000
7.9111	0.719	4.075	890.0	0.000
8.0000	0.724	4.139	908.4	0.000
8.0889	0.729	4.204	927.0	0.000

DRAFT

Channel 13

Bottom Length: 1563.00 ft.
Bottom Width: 5.00 ft.
Manning's n: 0.035
Channel bottom slope 1: 0.0218 To 1
Channel Left side slope 0: 0.5 To 1
Channel right side slope 2: 0.5 To 1
Discharge Structure
Riser Height: 0 ft.
Riser Diameter: 0 in.
Element Flows To:
Outlet 1 Outlet 2
POC 6

Channel Hydraulic Table

Stage(ft)	Area(ac)	Volume(ac-ft)	Discharge(cfs)	Infilt(cfs)
0.0000	0.179	0.000	0.000	0.000
0.0889	0.182	0.016	0.550	0.000
0.1778	0.185	0.032	1.728	0.000
0.2667	0.189	0.049	3.365	0.000
0.3556	0.192	0.066	5.387	0.000
0.4444	0.195	0.083	7.750	0.000
0.5333	0.198	0.100	10.42	0.000
0.6222	0.201	0.118	13.38	0.000
0.7111	0.204	0.136	16.60	0.000
0.8000	0.208	0.155	20.08	0.000
0.8889	0.211	0.173	23.81	0.000
0.9778	0.214	0.192	27.76	0.000
1.0667	0.217	0.211	31.95	0.000
1.1556	0.220	0.231	36.35	0.000
1.2444	0.224	0.251	40.96	0.000
1.3333	0.227	0.271	45.78	0.000
1.4222	0.230	0.291	50.81	0.000
1.5111	0.233	0.312	56.04	0.000
1.6000	0.236	0.333	61.47	0.000
1.6889	0.240	0.354	67.09	0.000
1.7778	0.243	0.375	72.91	0.000
1.8667	0.246	0.397	78.93	0.000
1.9556	0.249	0.419	85.13	0.000
2.0444	0.252	0.441	91.53	0.000
2.1333	0.256	0.464	98.12	0.000
2.2222	0.259	0.487	104.9	0.000
2.3111	0.262	0.510	111.8	0.000
2.4000	0.265	0.533	119.0	0.000
2.4889	0.268	0.557	126.3	0.000
2.5778	0.271	0.581	133.8	0.000
2.6667	0.275	0.606	141.6	0.000
2.7556	0.278	0.630	149.5	0.000
2.8444	0.281	0.655	157.6	0.000
2.9333	0.284	0.680	165.8	0.000
3.0222	0.287	0.706	174.3	0.000
3.1111	0.291	0.731	183.0	0.000
3.2000	0.294	0.757	191.8	0.000
3.2889	0.297	0.784	200.9	0.000
3.3778	0.300	0.810	210.1	0.000
3.4667	0.303	0.837	219.5	0.000

DRAFT

3.5556	0.307	0.864	229.1	0.000
3.6444	0.310	0.892	238.9	0.000
3.7333	0.313	0.919	248.9	0.000
3.8222	0.316	0.947	259.1	0.000
3.9111	0.319	0.976	269.5	0.000
4.0000	0.323	1.004	280.1	0.000
4.0889	0.326	1.033	290.9	0.000
4.1778	0.329	1.062	301.8	0.000
4.2667	0.332	1.092	313.0	0.000
4.3556	0.335	1.121	324.4	0.000
4.4444	0.338	1.151	335.9	0.000
4.5333	0.342	1.182	347.7	0.000
4.6222	0.345	1.212	359.7	0.000
4.7111	0.348	1.243	371.8	0.000
4.8000	0.351	1.274	384.2	0.000
4.8889	0.354	1.306	396.8	0.000
4.9778	0.358	1.337	409.5	0.000
5.0667	0.361	1.369	422.5	0.000
5.1556	0.364	1.401	435.7	0.000
5.2444	0.367	1.434	449.1	0.000
5.3333	0.370	1.467	462.7	0.000
5.4222	0.374	1.500	476.5	0.000
5.5111	0.377	1.533	490.5	0.000
5.6000	0.380	1.567	504.7	0.000
5.6889	0.383	1.601	519.2	0.000
5.7778	0.386	1.635	533.8	0.000
5.8667	0.390	1.670	548.7	0.000
5.9556	0.393	1.705	563.7	0.000
6.0444	0.396	1.740	579.0	0.000
6.1333	0.399	1.775	594.5	0.000
6.2222	0.402	1.811	610.3	0.000
6.3111	0.405	1.847	626.2	0.000
6.4000	0.409	1.883	642.3	0.000
6.4889	0.412	1.919	658.7	0.000
6.5778	0.415	1.956	675.3	0.000
6.6667	0.418	1.993	692.1	0.000
6.7556	0.421	2.031	709.2	0.000
6.8444	0.425	2.068	726.4	0.000
6.9333	0.428	2.106	743.9	0.000
7.0222	0.431	2.144	761.6	0.000
7.1111	0.434	2.183	779.6	0.000
7.2000	0.437	2.222	797.7	0.000
7.2889	0.441	2.261	816.1	0.000
7.3778	0.444	2.300	834.7	0.000
7.4667	0.447	2.340	853.6	0.000
7.5556	0.450	2.380	872.7	0.000
7.6444	0.453	2.420	892.0	0.000
7.7333	0.457	2.460	911.5	0.000
7.8222	0.460	2.501	931.3	0.000
7.9111	0.463	2.542	951.3	0.000
8.0000	0.466	2.583	971.6	0.000
8.0889	0.469	2.625	992.0	0.000

DRAFT

HMB 13

Depth: 8.1 ft.
Element Flows To:
Outlet 1 Outlet 2
Channel 13

SSD Table Hydraulic Table

Stage (ft)	Area (ac)	Volume (ac-ft)	Manual	NotUsed	NotUsed	NotUsed	NotUsed
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.010	0.100	0.001	0.001	0.000	0.000	0.000	0.000
0.100	0.104	0.010	0.018	0.000	0.000	0.000	0.000
0.200	0.108	0.021	0.037	0.000	0.000	0.000	0.000
0.300	0.112	0.032	0.049	0.000	0.000	0.000	0.000
0.400	0.116	0.044	0.058	0.000	0.000	0.000	0.000
0.500	0.120	0.056	0.066	0.000	0.000	0.000	0.000
0.600	0.124	0.068	0.074	0.000	0.000	0.000	0.000
0.700	0.128	0.081	0.080	0.000	0.000	0.000	0.000
0.800	0.132	0.094	0.086	0.000	0.000	0.000	0.000
0.900	0.135	0.107	0.092	0.000	0.000	0.000	0.000
1.000	0.139	0.121	0.097	0.000	0.000	0.000	0.000
1.100	0.143	0.135	0.102	0.000	0.000	0.000	0.000
1.200	0.147	0.150	0.107	0.000	0.000	0.000	0.000
1.300	0.151	0.165	0.112	0.000	0.000	0.000	0.000
1.400	0.155	0.180	0.116	0.000	0.000	0.000	0.000
1.500	0.159	0.196	0.120	0.000	0.000	0.000	0.000
1.600	0.162	0.212	0.124	0.000	0.000	0.000	0.000
1.700	0.166	0.228	0.128	0.000	0.000	0.000	0.000
1.800	0.170	0.245	0.132	0.000	0.000	0.000	0.000
1.900	0.174	0.262	0.136	0.000	0.000	0.000	0.000
2.000	0.178	0.280	0.140	0.000	0.000	0.000	0.000
2.100	0.182	0.298	0.143	0.000	0.000	0.000	0.000
2.200	0.185	0.316	0.147	0.000	0.000	0.000	0.000
2.300	0.189	0.335	0.150	0.000	0.000	0.000	0.000
2.400	0.193	0.354	0.153	0.000	0.000	0.000	0.000
2.500	0.197	0.373	0.157	0.000	0.000	0.000	0.000
2.600	0.201	0.393	0.160	0.000	0.000	0.000	0.000
2.700	0.204	0.413	0.163	0.000	0.000	0.000	0.000
2.800	0.208	0.434	0.166	0.000	0.000	0.000	0.000
2.900	0.212	0.455	0.169	0.000	0.000	0.000	0.000
3.000	0.216	0.476	0.172	0.000	0.000	0.000	0.000
3.100	0.220	0.498	0.175	0.000	0.000	0.000	0.000
3.200	0.223	0.520	0.178	0.000	0.000	0.000	0.000
3.300	0.227	0.542	0.180	0.000	0.000	0.000	0.000
3.400	0.231	0.565	0.183	0.000	0.000	0.000	0.000
3.500	0.235	0.588	0.186	0.000	0.000	0.000	0.000
3.600	0.238	0.612	0.189	0.000	0.000	0.000	0.000
3.700	0.242	0.636	0.226	0.000	0.000	0.000	0.000
3.800	0.246	0.660	0.293	0.000	0.000	0.000	0.000
3.900	0.250	0.685	0.379	0.000	0.000	0.000	0.000
4.000	0.253	0.710	0.480	0.000	0.000	0.000	0.000
4.100	0.257	0.735	0.594	0.000	0.000	0.000	0.000
4.200	0.261	0.761	0.679	0.000	0.000	0.000	0.000
4.300	0.265	0.787	0.745	0.000	0.000	0.000	0.000
4.400	0.268	0.814	0.804	0.000	0.000	0.000	0.000
4.500	0.272	0.841	0.858	0.000	0.000	0.000	0.000

DRAFT

4.600	0.276	0.868	0.909	0.000	0.000	0.000	0.000
4.700	0.280	0.896	0.956	0.000	0.000	0.000	0.000
4.800	0.283	0.924	1.001	0.000	0.000	0.000	0.000
4.900	0.287	0.952	1.043	0.000	0.000	0.000	0.000
5.000	0.291	0.981	1.083	0.000	0.000	0.000	0.000
5.100	0.294	1.010	1.122	0.000	0.000	0.000	0.000
5.200	0.298	1.040	1.248	0.000	0.000	0.000	0.000
5.300	0.302	1.070	1.444	0.000	0.000	0.000	0.000
5.400	0.306	1.100	1.687	0.000	0.000	0.000	0.000
5.500	0.309	1.131	1.967	0.000	0.000	0.000	0.000
5.600	0.313	1.162	2.279	0.000	0.000	0.000	0.000
5.700	0.317	1.193	2.619	0.000	0.000	0.000	0.000
5.800	0.320	1.225	2.986	0.000	0.000	0.000	0.000
5.900	0.324	1.257	3.377	0.000	0.000	0.000	0.000
6.000	0.328	1.290	3.790	0.000	0.000	0.000	0.000
6.100	0.331	1.323	4.225	0.000	0.000	0.000	0.000
6.200	0.335	1.356	4.680	0.000	0.000	0.000	0.000
6.300	0.339	1.390	5.154	0.000	0.000	0.000	0.000
6.400	0.342	1.424	5.647	0.000	0.000	0.000	0.000
6.500	0.346	1.458	6.158	0.000	0.000	0.000	0.000
6.600	0.350	1.493	6.685	0.000	0.000	0.000	0.000
6.700	0.353	1.528	7.229	0.000	0.000	0.000	0.000
6.800	0.357	1.564	7.790	0.000	0.000	0.000	0.000
6.900	0.361	1.600	8.365	0.000	0.000	0.000	0.000
7.000	0.364	1.636	8.956	0.000	0.000	0.000	0.000
7.100	0.368	1.673	9.562	0.000	0.000	0.000	0.000
7.200	0.372	1.710	10.18	0.000	0.000	0.000	0.000
7.300	0.375	1.747	10.82	0.000	0.000	0.000	0.000
7.400	0.379	1.785	11.46	0.000	0.000	0.000	0.000
7.500	0.382	1.823	12.12	0.000	0.000	0.000	0.000
7.600	0.386	1.862	12.80	0.000	0.000	0.000	0.000
7.700	0.390	1.901	13.49	0.000	0.000	0.000	0.000
7.800	0.393	1.940	14.22	0.000	0.000	0.000	0.000
7.900	0.397	1.980	15.94	0.000	0.000	0.000	0.000
8.000	0.401	2.020	18.69	0.000	0.000	0.000	0.000
8.100	0.404	2.060	999.0	0.000	0.000	0.000	0.000

DRAFT

HMB 6

Depth: 8.1 ft.
Element Flows To:
Outlet 1 Outlet 2
POC 6

SSD Table Hydraulic Table

Stage (ft)	Area (ac)	Volume (ac-ft)	Manual	NotUsed	NotUsed	NotUsed	NotUsed
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.010	0.420	0.004	0.001	0.000	0.000	0.000	0.000
0.100	0.421	0.040	0.044	0.000	0.000	0.000	0.000
0.200	0.432	0.083	0.124	0.000	0.000	0.000	0.000
0.300	0.443	0.127	0.228	0.000	0.000	0.000	0.000
0.400	0.454	0.172	0.323	0.000	0.000	0.000	0.000
0.500	0.465	0.217	0.386	0.000	0.000	0.000	0.000
0.600	0.476	0.264	0.440	0.000	0.000	0.000	0.000
0.700	0.486	0.312	0.488	0.000	0.000	0.000	0.000
0.800	0.497	0.360	0.532	0.000	0.000	0.000	0.000
0.900	0.507	0.409	0.573	0.000	0.000	0.000	0.000
1.000	0.518	0.460	0.610	0.000	0.000	0.000	0.000
1.100	0.528	0.511	0.646	0.000	0.000	0.000	0.000
1.200	0.538	0.563	0.680	0.000	0.000	0.000	0.000
1.300	0.549	0.616	0.712	0.000	0.000	0.000	0.000
1.400	0.559	0.670	0.743	0.000	0.000	0.000	0.000
1.500	0.569	0.725	0.772	0.000	0.000	0.000	0.000
1.600	0.579	0.781	0.801	0.000	0.000	0.000	0.000
1.700	0.589	0.838	0.828	0.000	0.000	0.000	0.000
1.800	0.599	0.896	0.855	0.000	0.000	0.000	0.000
1.900	0.608	0.954	0.880	0.000	0.000	0.000	0.000
2.000	0.618	1.014	0.905	0.000	0.000	0.000	0.000
2.100	0.628	1.075	0.930	0.000	0.000	0.000	0.000
2.200	0.637	1.136	0.954	0.000	0.000	0.000	0.000
2.300	0.647	1.198	0.977	0.000	0.000	0.000	0.000
2.400	0.656	1.262	0.999	0.000	0.000	0.000	0.000
2.500	0.665	1.326	1.022	0.000	0.000	0.000	0.000
2.600	0.675	1.391	1.043	0.000	0.000	0.000	0.000
2.700	0.684	1.457	1.064	0.000	0.000	0.000	0.000
2.800	0.693	1.524	1.085	0.000	0.000	0.000	0.000
2.900	0.702	1.592	1.106	0.000	0.000	0.000	0.000
3.000	0.711	1.661	1.126	0.000	0.000	0.000	0.000
3.100	0.720	1.731	1.145	0.000	0.000	0.000	0.000
3.200	0.728	1.801	1.165	0.000	0.000	0.000	0.000
3.300	0.737	1.873	1.184	0.000	0.000	0.000	0.000
3.400	0.746	1.945	1.203	0.000	0.000	0.000	0.000
3.500	0.754	2.019	1.221	0.000	0.000	0.000	0.000
3.600	0.763	2.093	1.239	0.000	0.000	0.000	0.000
3.700	0.771	2.169	1.257	0.000	0.000	0.000	0.000
3.800	0.780	2.245	1.275	0.000	0.000	0.000	0.000
3.900	0.788	2.322	1.292	0.000	0.000	0.000	0.000
4.000	0.796	2.400	1.309	0.000	0.000	0.000	0.000
4.100	0.804	2.479	1.326	0.000	0.000	0.000	0.000
4.200	0.812	2.559	1.343	0.000	0.000	0.000	0.000
4.300	0.820	2.640	1.360	0.000	0.000	0.000	0.000
4.400	0.828	2.722	1.376	0.000	0.000	0.000	0.000
4.500	0.836	2.804	1.392	0.000	0.000	0.000	0.000

DRAFT

4.600	0.844	2.888	1.408	0.000	0.000	0.000	0.000
4.700	0.851	2.973	1.424	0.000	0.000	0.000	0.000
4.800	0.859	3.058	1.439	0.000	0.000	0.000	0.000
4.900	0.866	3.144	1.455	0.000	0.000	0.000	0.000
5.000	0.874	3.232	1.470	0.000	0.000	0.000	0.000
5.100	0.881	3.320	1.485	0.000	0.000	0.000	0.000
5.200	0.888	3.409	1.500	0.000	0.000	0.000	0.000
5.300	0.896	3.499	1.515	0.000	0.000	0.000	0.000
5.400	0.903	3.590	1.530	0.000	0.000	0.000	0.000
5.500	0.910	3.682	1.544	0.000	0.000	0.000	0.000
5.600	0.917	3.775	1.559	0.000	0.000	0.000	0.000
5.700	0.924	3.869	1.573	0.000	0.000	0.000	0.000
5.800	0.931	3.964	1.587	0.000	0.000	0.000	0.000
5.900	0.937	4.059	1.601	0.000	0.000	0.000	0.000
6.000	0.944	4.156	1.615	0.000	0.000	0.000	0.000
6.100	0.951	4.254	1.629	0.000	0.000	0.000	0.000
6.200	0.957	4.352	1.643	0.000	0.000	0.000	0.000
6.300	0.964	4.451	1.656	0.000	0.000	0.000	0.000
6.400	0.970	4.552	1.670	0.000	0.000	0.000	0.000
6.500	0.976	4.653	1.683	0.000	0.000	0.000	0.000
6.600	0.983	4.755	1.696	0.000	0.000	0.000	0.000
6.700	0.989	4.858	1.709	0.000	0.000	0.000	0.000
6.800	0.995	4.962	1.722	0.000	0.000	0.000	0.000
6.900	1.001	5.067	1.735	0.000	0.000	0.000	0.000
7.000	1.007	5.173	1.748	0.000	0.000	0.000	0.000
7.100	1.013	5.280	1.761	0.000	0.000	0.000	0.000
7.200	1.018	5.387	1.774	0.000	0.000	0.000	0.000
7.300	1.024	5.496	3.162	0.000	0.000	0.000	0.000
7.400	1.030	5.605	5.717	0.000	0.000	0.000	0.000
7.500	1.035	5.716	9.027	0.000	0.000	0.000	0.000
7.600	1.041	5.827	12.95	0.000	0.000	0.000	0.000
7.700	1.046	5.940	17.26	0.000	0.000	0.000	0.000
7.800	1.052	6.053	21.92	0.000	0.000	0.000	0.000
7.900	1.057	6.167	26.95	0.000	0.000	0.000	0.000
8.000	1.062	6.282	32.31	0.000	0.000	0.000	0.000
8.100	1.067	6.398	999.0	0.000	0.000	0.000	0.000

DRAFT

Channel 8

Bottom Length: 1453.00 ft.
Bottom Width: 7.00 ft.
Manning's n: 0.035
Channel bottom slope 1: 0.0138 To 1
Channel Left side slope 0: 0.5 To 1
Channel right side slope 2: 0.5 To 1
Discharge Structure
Riser Height: 0 ft.
Riser Diameter: 0 in.
Element Flows To:
Outlet 1 Outlet 2
POC 7

Channel Hydraulic Table

Stage(ft)	Area(ac)	Volume(ac-ft)	Discharge(cfs)	Infilt(cfs)
0.0000	0.233	0.000	0.000	0.000
0.0889	0.236	0.020	0.614	0.000
0.1778	0.239	0.042	1.936	0.000
0.2667	0.242	0.063	3.779	0.000
0.3556	0.245	0.085	6.062	0.000
0.4444	0.248	0.107	8.737	0.000
0.5333	0.251	0.129	11.76	0.000
0.6222	0.254	0.151	15.12	0.000
0.7111	0.257	0.174	18.79	0.000
0.8000	0.260	0.197	22.75	0.000
0.8889	0.263	0.220	26.98	0.000
0.9778	0.266	0.244	31.48	0.000
1.0667	0.269	0.268	36.23	0.000
1.1556	0.272	0.292	41.23	0.000
1.2444	0.275	0.316	46.47	0.000
1.3333	0.278	0.341	51.94	0.000
1.4222	0.280	0.365	57.63	0.000
1.5111	0.283	0.390	63.55	0.000
1.6000	0.286	0.416	69.68	0.000
1.6889	0.289	0.441	76.03	0.000
1.7778	0.292	0.467	82.59	0.000
1.8667	0.295	0.494	89.35	0.000
1.9556	0.298	0.520	96.32	0.000
2.0444	0.301	0.547	103.4	0.000
2.1333	0.304	0.574	110.8	0.000
2.2222	0.307	0.601	118.4	0.000
2.3111	0.310	0.628	126.1	0.000
2.4000	0.313	0.656	134.1	0.000
2.4889	0.316	0.684	142.3	0.000
2.5778	0.319	0.712	150.6	0.000
2.6667	0.322	0.741	159.1	0.000
2.7556	0.325	0.770	167.9	0.000
2.8444	0.328	0.799	176.8	0.000
2.9333	0.331	0.828	185.9	0.000
3.0222	0.334	0.858	195.2	0.000
3.1111	0.337	0.887	204.7	0.000
3.2000	0.340	0.918	214.3	0.000
3.2889	0.343	0.948	224.2	0.000
3.3778	0.346	0.979	234.2	0.000
3.4667	0.349	1.009	244.5	0.000

DRAFT

3.5556	0.352	1.041	254.9	0.000
3.6444	0.355	1.072	265.5	0.000
3.7333	0.358	1.104	276.3	0.000
3.8222	0.361	1.136	287.3	0.000
3.9111	0.364	1.168	298.5	0.000
4.0000	0.366	1.200	309.8	0.000
4.0889	0.369	1.233	321.4	0.000
4.1778	0.372	1.266	333.1	0.000
4.2667	0.375	1.299	345.0	0.000
4.3556	0.378	1.333	357.1	0.000
4.4444	0.381	1.367	369.4	0.000
4.5333	0.384	1.401	381.9	0.000
4.6222	0.387	1.435	394.6	0.000
4.7111	0.390	1.470	407.4	0.000
4.8000	0.393	1.505	420.5	0.000
4.8889	0.396	1.540	433.8	0.000
4.9778	0.399	1.575	447.2	0.000
5.0667	0.402	1.611	460.8	0.000
5.1556	0.405	1.647	474.6	0.000
5.2444	0.408	1.683	488.7	0.000
5.3333	0.411	1.719	502.9	0.000
5.4222	0.414	1.756	517.3	0.000
5.5111	0.417	1.793	531.8	0.000
5.6000	0.420	1.830	546.6	0.000
5.6889	0.423	1.868	561.6	0.000
5.7778	0.426	1.906	576.8	0.000
5.8667	0.429	1.944	592.2	0.000
5.9556	0.432	1.982	607.7	0.000
6.0444	0.435	2.020	623.5	0.000
6.1333	0.438	2.059	639.5	0.000
6.2222	0.441	2.098	655.6	0.000
6.3111	0.444	2.138	672.0	0.000
6.4000	0.447	2.177	688.5	0.000
6.4889	0.450	2.217	705.3	0.000
6.5778	0.453	2.257	722.3	0.000
6.6667	0.455	2.298	739.4	0.000
6.7556	0.458	2.338	756.8	0.000
6.8444	0.461	2.379	774.3	0.000
6.9333	0.464	2.420	792.1	0.000
7.0222	0.467	2.462	810.1	0.000
7.1111	0.470	2.504	828.3	0.000
7.2000	0.473	2.545	846.6	0.000
7.2889	0.476	2.588	865.2	0.000
7.3778	0.479	2.630	884.0	0.000
7.4667	0.482	2.673	903.0	0.000
7.5556	0.485	2.716	922.2	0.000
7.6444	0.488	2.759	941.6	0.000
7.7333	0.491	2.803	961.2	0.000
7.8222	0.494	2.847	981.1	0.000
7.9111	0.497	2.891	1001.	0.000
8.0000	0.500	2.935	1021.	0.000
8.0889	0.503	2.980	1041.	0.000

DRAFT

Upstream POC 5

Bottom Length: 1876.00 ft.
Bottom Width: 20.00 ft.
Manning's n: 0.035
Channel bottom slope 1: 0.0048 To 1
Channel Left side slope 0: 0.25 To 1
Channel right side slope 2: 0.25 To 1
Discharge Structure
Riser Height: 0 ft.
Riser Diameter: 0 in.
Element Flows To:
Outlet 1 Outlet 2
POC 5

Channel Hydraulic Table

Stage(ft)	Area(ac)	Volume(ac-ft)	Discharge(cfs)	Infilt(cfs)
0.0000	0.861	0.000	0.000	0.000
0.1111	0.863	0.095	1.506	0.000
0.2222	0.866	0.191	4.759	0.000
0.3333	0.868	0.288	9.306	0.000
0.4444	0.870	0.384	14.95	0.000
0.5556	0.873	0.481	21.58	0.000
0.6667	0.875	0.579	29.11	0.000
0.7778	0.878	0.676	37.45	0.000
0.8889	0.880	0.774	46.57	0.000
1.0000	0.882	0.872	56.41	0.000
1.1111	0.885	0.970	66.93	0.000
1.2222	0.887	1.068	78.09	0.000
1.3333	0.890	1.167	89.88	0.000
1.4444	0.892	1.266	102.2	0.000
1.5556	0.894	1.365	115.2	0.000
1.6667	0.897	1.465	128.6	0.000
1.7778	0.899	1.565	142.7	0.000
1.8889	0.902	1.665	157.2	0.000
2.0000	0.904	1.765	172.2	0.000
2.1111	0.906	1.866	187.7	0.000
2.2222	0.909	1.967	203.6	0.000
2.3333	0.911	2.068	220.0	0.000
2.4444	0.914	2.169	236.8	0.000
2.5556	0.916	2.271	254.0	0.000
2.6667	0.918	2.373	271.7	0.000
2.7778	0.921	2.475	289.7	0.000
2.8889	0.923	2.578	308.2	0.000
3.0000	0.926	2.680	327.0	0.000
3.1111	0.928	2.784	346.2	0.000
3.2222	0.930	2.887	365.8	0.000
3.3333	0.933	2.990	385.7	0.000
3.4444	0.935	3.094	405.9	0.000
3.5556	0.937	3.198	426.6	0.000
3.6667	0.940	3.303	447.5	0.000
3.7778	0.942	3.407	468.8	0.000
3.8889	0.945	3.512	490.4	0.000
4.0000	0.947	3.617	512.3	0.000
4.1111	0.949	3.723	534.5	0.000
4.2222	0.952	3.828	557.1	0.000
4.3333	0.954	3.934	579.9	0.000

DRAFT

4.4444	0.957	4.040	603.1	0.000
4.5556	0.959	4.147	626.5	0.000
4.6667	0.961	4.254	650.2	0.000
4.7778	0.964	4.361	674.3	0.000
4.8889	0.966	4.468	698.6	0.000
5.0000	0.969	4.575	723.1	0.000
5.1111	0.971	4.683	748.0	0.000
5.2222	0.973	4.791	773.1	0.000
5.3333	0.976	4.900	798.5	0.000
5.4444	0.978	5.008	824.2	0.000
5.5556	0.981	5.117	850.1	0.000
5.6667	0.983	5.226	876.3	0.000
5.7778	0.985	5.336	902.7	0.000
5.8889	0.988	5.445	929.4	0.000
6.0000	0.990	5.555	956.3	0.000
6.1111	0.993	5.665	983.5	0.000
6.2222	0.995	5.776	1011.	0.000
6.3333	0.997	5.887	1038.	0.000
6.4444	1.000	5.998	1066.	0.000
6.5556	1.002	6.109	1094.	0.000
6.6667	1.004	6.220	1123.	0.000
6.7778	1.007	6.332	1151.	0.000
6.8889	1.009	6.444	1180.	0.000
7.0000	1.012	6.557	1209.	0.000
7.1111	1.014	6.669	1239.	0.000
7.2222	1.016	6.782	1268.	0.000
7.3333	1.019	6.895	1298.	0.000
7.4444	1.021	7.009	1328.	0.000
7.5556	1.024	7.122	1358.	0.000
7.6667	1.026	7.236	1389.	0.000
7.7778	1.028	7.350	1419.	0.000
7.8889	1.031	7.465	1450.	0.000
8.0000	1.033	7.580	1481.	0.000
8.1111	1.036	7.694	1513.	0.000
8.2222	1.038	7.810	1544.	0.000
8.3333	1.040	7.925	1576.	0.000
8.4444	1.043	8.041	1608.	0.000
8.5556	1.045	8.157	1640.	0.000
8.6667	1.048	8.273	1672.	0.000
8.7778	1.050	8.390	1705.	0.000
8.8889	1.052	8.507	1738.	0.000
9.0000	1.055	8.624	1771.	0.000
9.1111	1.057	8.741	1804.	0.000
9.2222	1.060	8.859	1838.	0.000
9.3333	1.062	8.977	1871.	0.000
9.4444	1.064	9.095	1905.	0.000
9.5556	1.067	9.213	1939.	0.000
9.6667	1.069	9.332	1973.	0.000
9.7778	1.071	9.451	2008.	0.000
9.8889	1.074	9.570	2042.	0.000
10.000	1.076	9.690	2077.	0.000
10.111	1.079	9.810	2112.	0.000

DRAFT

HMB 5

Depth: 8.1 ft.
Element Flows To:
Outlet 1 Outlet 2
POC 5

SSD Table Hydraulic Table

Stage (ft)	Area (ac)	Volume (ac-ft)	Manual	NotUsed	NotUsed	NotUsed	NotUsed
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.010	0.100	0.001	0.001	0.000	0.000	0.000	0.000
0.100	0.104	0.010	0.018	0.000	0.000	0.000	0.000
0.200	0.108	0.021	0.046	0.000	0.000	0.000	0.000
0.300	0.112	0.032	0.062	0.000	0.000	0.000	0.000
0.400	0.116	0.044	0.075	0.000	0.000	0.000	0.000
0.500	0.120	0.056	0.086	0.000	0.000	0.000	0.000
0.600	0.124	0.068	0.096	0.000	0.000	0.000	0.000
0.700	0.128	0.081	0.105	0.000	0.000	0.000	0.000
0.800	0.132	0.094	0.113	0.000	0.000	0.000	0.000
0.900	0.135	0.107	0.121	0.000	0.000	0.000	0.000
1.000	0.139	0.121	0.128	0.000	0.000	0.000	0.000
1.100	0.143	0.135	0.135	0.000	0.000	0.000	0.000
1.200	0.147	0.150	0.141	0.000	0.000	0.000	0.000
1.300	0.151	0.165	0.148	0.000	0.000	0.000	0.000
1.400	0.155	0.180	0.153	0.000	0.000	0.000	0.000
1.500	0.159	0.196	0.159	0.000	0.000	0.000	0.000
1.600	0.162	0.212	0.165	0.000	0.000	0.000	0.000
1.700	0.166	0.228	0.170	0.000	0.000	0.000	0.000
1.800	0.170	0.245	0.175	0.000	0.000	0.000	0.000
1.900	0.174	0.262	0.180	0.000	0.000	0.000	0.000
2.000	0.178	0.280	0.185	0.000	0.000	0.000	0.000
2.100	0.182	0.298	0.190	0.000	0.000	0.000	0.000
2.200	0.185	0.316	0.195	0.000	0.000	0.000	0.000
2.300	0.189	0.335	0.199	0.000	0.000	0.000	0.000
2.400	0.193	0.354	0.204	0.000	0.000	0.000	0.000
2.500	0.197	0.373	0.208	0.000	0.000	0.000	0.000
2.600	0.201	0.393	0.212	0.000	0.000	0.000	0.000
2.700	0.204	0.413	0.216	0.000	0.000	0.000	0.000
2.800	0.208	0.434	0.220	0.000	0.000	0.000	0.000
2.900	0.212	0.455	0.224	0.000	0.000	0.000	0.000
3.000	0.216	0.476	0.228	0.000	0.000	0.000	0.000
3.100	0.220	0.498	0.232	0.000	0.000	0.000	0.000
3.200	0.223	0.520	0.236	0.000	0.000	0.000	0.000
3.300	0.227	0.542	0.240	0.000	0.000	0.000	0.000
3.400	0.231	0.565	0.244	0.000	0.000	0.000	0.000
3.500	0.235	0.588	0.247	0.000	0.000	0.000	0.000
3.600	0.238	0.612	0.251	0.000	0.000	0.000	0.000
3.700	0.242	0.636	0.254	0.000	0.000	0.000	0.000
3.800	0.246	0.660	0.258	0.000	0.000	0.000	0.000
3.900	0.250	0.685	0.261	0.000	0.000	0.000	0.000
4.000	0.253	0.710	0.265	0.000	0.000	0.000	0.000
4.100	0.257	0.735	0.268	0.000	0.000	0.000	0.000
4.200	0.261	0.761	0.271	0.000	0.000	0.000	0.000
4.300	0.265	0.787	0.275	0.000	0.000	0.000	0.000
4.400	0.268	0.814	0.331	0.000	0.000	0.000	0.000
4.500	0.272	0.841	0.430	0.000	0.000	0.000	0.000

DRAFT

4.600	0.276	0.868	0.558	0.000	0.000	0.000	0.000
4.700	0.280	0.896	0.709	0.000	0.000	0.000	0.000
4.800	0.283	0.924	0.879	0.000	0.000	0.000	0.000
4.900	0.287	0.952	1.006	0.000	0.000	0.000	0.000
5.000	0.291	0.981	1.104	0.000	0.000	0.000	0.000
5.100	0.294	1.010	1.192	0.000	0.000	0.000	0.000
5.200	0.298	1.040	1.273	0.000	0.000	0.000	0.000
5.300	0.302	1.070	1.348	0.000	0.000	0.000	0.000
5.400	0.306	1.100	1.418	0.000	0.000	0.000	0.000
5.500	0.309	1.131	1.485	0.000	0.000	0.000	0.000
5.600	0.313	1.162	1.548	0.000	0.000	0.000	0.000
5.700	0.317	1.193	1.608	0.000	0.000	0.000	0.000
5.800	0.320	1.225	1.666	0.000	0.000	0.000	0.000
5.900	0.324	1.257	1.721	0.000	0.000	0.000	0.000
6.000	0.328	1.290	1.775	0.000	0.000	0.000	0.000
6.100	0.331	1.323	1.953	0.000	0.000	0.000	0.000
6.200	0.335	1.356	2.234	0.000	0.000	0.000	0.000
6.300	0.339	1.390	2.582	0.000	0.000	0.000	0.000
6.400	0.342	1.424	2.984	0.000	0.000	0.000	0.000
6.500	0.346	1.458	3.433	0.000	0.000	0.000	0.000
6.600	0.350	1.493	3.922	0.000	0.000	0.000	0.000
6.700	0.353	1.528	4.449	0.000	0.000	0.000	0.000
6.800	0.357	1.564	5.012	0.000	0.000	0.000	0.000
6.900	0.361	1.600	5.606	0.000	0.000	0.000	0.000
7.000	0.364	1.636	6.232	0.000	0.000	0.000	0.000
7.100	0.368	1.673	6.887	0.000	0.000	0.000	0.000
7.200	0.372	1.710	7.569	0.000	0.000	0.000	0.000
7.300	0.375	1.747	8.278	0.000	0.000	0.000	0.000
7.400	0.379	1.785	9.013	0.000	0.000	0.000	0.000
7.500	0.382	1.823	9.773	0.000	0.000	0.000	0.000
7.600	0.386	1.862	10.56	0.000	0.000	0.000	0.000
7.700	0.390	1.901	11.36	0.000	0.000	0.000	0.000
7.800	0.393	1.940	12.19	0.000	0.000	0.000	0.000
7.900	0.397	1.980	13.04	0.000	0.000	0.000	0.000
8.000	0.401	2.020	13.92	0.000	0.000	0.000	0.000
8.100	0.600	2.800	999.0	0.000	0.000	0.000	0.000

DRAFT

Urban 2

Bottom Length: 585.00 ft.
Bottom Width: 8.00 ft.
Manning's n: 0.04
Channel bottom slope 1: 0.0137 To 1
Channel Left side slope 0: 0.5 To 1
Channel right side slope 2: 0.5 To 1
Discharge Structure
Riser Height: 0 ft.
Riser Diameter: 0 in.
Element Flows To:
Outlet 1 Outlet 2
POC 5

Channel Hydraulic Table

Stage(ft)	Area(ac)	Volume(ac-ft)	Discharge(cfs)	Infilt(cfs)
0.0000	0.107	0.000	0.000	0.000
0.1111	0.108	0.012	0.887	0.000
0.2222	0.110	0.024	2.795	0.000
0.3333	0.111	0.036	5.451	0.000
0.4444	0.113	0.049	8.740	0.000
0.5556	0.114	0.061	12.59	0.000
0.6667	0.116	0.074	16.95	0.000
0.7778	0.117	0.087	21.78	0.000
0.8889	0.119	0.100	27.05	0.000
1.0000	0.120	0.114	32.74	0.000
1.1111	0.122	0.127	38.82	0.000
1.2222	0.123	0.141	45.29	0.000
1.3333	0.125	0.155	52.12	0.000
1.4444	0.126	0.169	59.30	0.000
1.5556	0.128	0.183	66.83	0.000
1.6667	0.129	0.197	74.70	0.000
1.7778	0.131	0.212	82.89	0.000
1.8889	0.132	0.226	91.40	0.000
2.0000	0.134	0.241	100.2	0.000
2.1111	0.135	0.256	109.3	0.000
2.2222	0.137	0.271	118.8	0.000
2.3333	0.138	0.287	128.5	0.000
2.4444	0.140	0.302	138.5	0.000
2.5556	0.141	0.318	148.9	0.000
2.6667	0.143	0.334	159.5	0.000
2.7778	0.144	0.350	170.4	0.000
2.8889	0.146	0.366	181.6	0.000
3.0000	0.147	0.382	193.1	0.000
3.1111	0.149	0.399	204.9	0.000
3.2222	0.150	0.415	216.9	0.000
3.3333	0.152	0.432	229.2	0.000
3.4444	0.153	0.449	241.9	0.000
3.5556	0.155	0.466	254.8	0.000
3.6667	0.156	0.484	267.9	0.000
3.7778	0.158	0.501	281.4	0.000
3.8889	0.159	0.519	295.1	0.000
4.0000	0.161	0.537	309.2	0.000
4.1111	0.162	0.555	323.4	0.000
4.2222	0.164	0.573	338.0	0.000
4.3333	0.165	0.591	352.9	0.000

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4.4444	0.167	0.610	368.0	0.000
4.5556	0.168	0.628	383.4	0.000
4.6667	0.170	0.647	399.1	0.000
4.7778	0.171	0.666	415.1	0.000
4.8889	0.173	0.685	431.3	0.000
5.0000	0.174	0.705	447.9	0.000
5.1111	0.176	0.724	464.7	0.000
5.2222	0.177	0.744	481.8	0.000
5.3333	0.179	0.764	499.1	0.000
5.4444	0.180	0.784	516.8	0.000
5.5556	0.182	0.804	534.7	0.000
5.6667	0.183	0.824	553.0	0.000
5.7778	0.185	0.845	571.5	0.000
5.8889	0.186	0.865	590.3	0.000
6.0000	0.188	0.886	609.3	0.000
6.1111	0.189	0.907	628.7	0.000
6.2222	0.191	0.928	648.4	0.000
6.3333	0.192	0.949	668.3	0.000
6.4444	0.194	0.971	688.5	0.000
6.5556	0.195	0.993	709.1	0.000
6.6667	0.197	1.014	729.9	0.000
6.7778	0.198	1.036	751.0	0.000
6.8889	0.200	1.059	772.4	0.000
7.0000	0.201	1.081	794.1	0.000
7.1111	0.203	1.103	816.1	0.000
7.2222	0.204	1.126	838.4	0.000
7.3333	0.206	1.149	860.9	0.000
7.4444	0.207	1.172	883.8	0.000
7.5556	0.209	1.195	907.0	0.000
7.6667	0.210	1.218	930.5	0.000
7.7778	0.212	1.242	954.3	0.000
7.8889	0.213	1.265	978.3	0.000
8.0000	0.215	1.289	1002.	0.000
8.1111	0.216	1.313	1027.	0.000
8.2222	0.217	1.337	1052.	0.000
8.3333	0.219	1.361	1077.	0.000
8.4444	0.220	1.386	1103.	0.000
8.5556	0.222	1.411	1129.	0.000
8.6667	0.223	1.435	1155.	0.000
8.7778	0.225	1.460	1182.	0.000
8.8889	0.226	1.485	1208.	0.000
9.0000	0.228	1.511	1235.	0.000
9.1111	0.229	1.536	1263.	0.000
9.2222	0.231	1.562	1291.	0.000
9.3333	0.232	1.588	1319.	0.000
9.4444	0.234	1.614	1347.	0.000
9.5556	0.235	1.640	1376.	0.000
9.6667	0.237	1.666	1405.	0.000
9.7778	0.238	1.692	1434.	0.000
9.8889	0.240	1.719	1464.	0.000
10.000	0.241	1.746	1494.	0.000
10.111	0.243	1.773	1524.	0.000

DRAFT

POC 5

Bottom Length: 408.00 ft.
Bottom Width: 22.00 ft.
Manning's n: 0.04
Channel bottom slope 1: 0.0055 To 1
Channel Left side slope 0: 0.25 To 1
Channel right side slope 2: 0.25 To 1
Discharge Structure
Riser Height: 0 ft.
Riser Diameter: 0 in.
Element Flows To:
Outlet 1 Outlet 2
Upstream POC 3/4

Channel Hydraulic Table

Stage(ft)	Area(ac)	Volume(ac-ft)	Discharge(cfs)	Infilt(cfs)
0.0000	0.206	0.000	0.000	0.000
0.1667	0.206	0.034	3.045	0.000
0.3333	0.207	0.068	9.602	0.000
0.5000	0.208	0.103	18.74	0.000
0.6667	0.209	0.138	30.07	0.000
0.8333	0.210	0.173	43.33	0.000
1.0000	0.210	0.208	58.34	0.000
1.1667	0.211	0.243	74.95	0.000
1.3333	0.212	0.278	93.05	0.000
1.5000	0.213	0.314	112.5	0.000
1.6667	0.213	0.349	133.3	0.000
1.8333	0.214	0.385	155.4	0.000
2.0000	0.215	0.421	178.6	0.000
2.1667	0.216	0.457	202.9	0.000
2.3333	0.217	0.493	228.4	0.000
2.5000	0.217	0.529	254.8	0.000
2.6667	0.218	0.566	282.3	0.000
2.8333	0.219	0.602	310.6	0.000
3.0000	0.220	0.639	339.9	0.000
3.1667	0.220	0.676	370.1	0.000
3.3333	0.221	0.712	401.2	0.000
3.5000	0.222	0.749	433.1	0.000
3.6667	0.223	0.787	465.8	0.000
3.8333	0.224	0.824	499.3	0.000
4.0000	0.224	0.861	533.5	0.000
4.1667	0.225	0.899	568.5	0.000
4.3333	0.226	0.937	604.2	0.000
4.5000	0.227	0.974	640.6	0.000
4.6667	0.227	1.012	677.8	0.000
4.8333	0.228	1.050	715.6	0.000
5.0000	0.229	1.088	754.0	0.000
5.1667	0.230	1.127	793.2	0.000
5.3333	0.231	1.165	832.9	0.000
5.5000	0.231	1.204	873.3	0.000
5.6667	0.232	1.243	914.3	0.000
5.8333	0.233	1.281	956.0	0.000
6.0000	0.234	1.320	998.2	0.000
6.1667	0.235	1.359	1041.	0.000
6.3333	0.235	1.399	1084.	0.000
6.5000	0.236	1.438	1128.	0.000

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6.6667	0.237	1.477	1172.	0.000
6.8333	0.238	1.517	1217.	0.000
7.0000	0.238	1.557	1263.	0.000
7.1667	0.239	1.597	1309.	0.000
7.3333	0.240	1.637	1356.	0.000
7.5000	0.241	1.677	1403.	0.000
7.6667	0.242	1.717	1451.	0.000
7.8333	0.242	1.758	1499.	0.000
8.0000	0.243	1.798	1548.	0.000
8.1667	0.244	1.839	1597.	0.000
8.3333	0.245	1.880	1647.	0.000
8.5000	0.245	1.920	1697.	0.000
8.6667	0.246	1.962	1748.	0.000
8.8333	0.247	2.003	1799.	0.000
9.0000	0.248	2.044	1851.	0.000
9.1667	0.249	2.085	1903.	0.000
9.3333	0.249	2.127	1956.	0.000
9.5000	0.250	2.169	2009.	0.000
9.6667	0.251	2.211	2063.	0.000
9.8333	0.252	2.253	2117.	0.000
10.000	0.253	2.295	2172.	0.000
10.167	0.253	2.337	2227.	0.000
10.333	0.254	2.379	2282.	0.000
10.500	0.255	2.422	2338.	0.000
10.667	0.256	2.464	2394.	0.000
10.833	0.256	2.507	2451.	0.000
11.000	0.257	2.550	2509.	0.000
11.167	0.258	2.593	2566.	0.000
11.333	0.259	2.636	2625.	0.000
11.500	0.260	2.679	2683.	0.000
11.667	0.260	2.723	2742.	0.000
11.833	0.261	2.766	2802.	0.000
12.000	0.262	2.810	2862.	0.000
12.167	0.263	2.854	2922.	0.000
12.333	0.263	2.898	2983.	0.000
12.500	0.264	2.942	3044.	0.000
12.667	0.265	2.986	3106.	0.000
12.833	0.266	3.030	3168.	0.000
13.000	0.267	3.075	3231.	0.000
13.167	0.267	3.119	3294.	0.000
13.333	0.268	3.164	3357.	0.000
13.500	0.269	3.209	3421.	0.000
13.667	0.270	3.254	3485.	0.000
13.833	0.270	3.299	3550.	0.000
14.000	0.271	3.344	3615.	0.000
14.167	0.272	3.389	3680.	0.000
14.333	0.273	3.435	3746.	0.000
14.500	0.274	3.480	3813.	0.000
14.667	0.274	3.526	3879.	0.000
14.833	0.275	3.572	3947.	0.000
15.000	0.276	3.618	4014.	0.000
15.167	0.277	3.664	4082.	0.000

DRAFT

Upstream POC 3/4

Bottom Length: 1443.00 ft.
Bottom Width: 22.00 ft.
Manning's n: 0.04
Channel bottom slope 1: 0.0055 To 1
Channel Left side slope 0: 0.25 To 1
Channel right side slope 2: 0.25 To 1
Discharge Structure
Riser Height: 0 ft.
Riser Diameter: 0 in.
Element Flows To:
Outlet 1 Outlet 2
POC 3/4

Channel Hydraulic Table

Stage(ft)	Area(ac)	Volume(ac-ft)	Discharge(cfs)	Infilt(cfs)
0.0000	0.728	0.000	0.000	0.000
0.1667	0.731	0.121	3.045	0.000
0.3333	0.734	0.243	9.602	0.000
0.5000	0.737	0.366	18.74	0.000
0.6667	0.739	0.489	30.07	0.000
0.8333	0.742	0.613	43.33	0.000
1.0000	0.745	0.737	58.34	0.000
1.1667	0.748	0.861	74.95	0.000
1.3333	0.750	0.986	93.05	0.000
1.5000	0.753	1.111	112.5	0.000
1.6667	0.756	1.237	133.3	0.000
1.8333	0.759	1.364	155.4	0.000
2.0000	0.761	1.490	178.6	0.000
2.1667	0.764	1.617	202.9	0.000
2.3333	0.767	1.745	228.4	0.000
2.5000	0.770	1.873	254.8	0.000
2.6667	0.773	2.002	282.3	0.000
2.8333	0.775	2.131	310.6	0.000
3.0000	0.778	2.260	339.9	0.000
3.1667	0.781	2.390	370.1	0.000
3.3333	0.784	2.521	401.2	0.000
3.5000	0.786	2.652	433.1	0.000
3.6667	0.789	2.783	465.8	0.000
3.8333	0.792	2.915	499.3	0.000
4.0000	0.795	3.047	533.5	0.000
4.1667	0.797	3.180	568.5	0.000
4.3333	0.800	3.313	604.2	0.000
4.5000	0.803	3.447	640.6	0.000
4.6667	0.806	3.581	677.8	0.000
4.8333	0.808	3.716	715.6	0.000
5.0000	0.811	3.851	754.0	0.000
5.1667	0.814	3.986	793.2	0.000
5.3333	0.817	4.122	832.9	0.000
5.5000	0.819	4.258	873.3	0.000
5.6667	0.822	4.395	914.3	0.000
5.8333	0.825	4.533	956.0	0.000
6.0000	0.828	4.671	998.2	0.000
6.1667	0.831	4.809	1041.	0.000
6.3333	0.833	4.948	1084.	0.000
6.5000	0.836	5.087	1128.	0.000

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6.6667	0.839	5.226	1172.	0.000
6.8333	0.842	5.366	1217.	0.000
7.0000	0.844	5.507	1263.	0.000
7.1667	0.847	5.648	1309.	0.000
7.3333	0.850	5.790	1356.	0.000
7.5000	0.853	5.931	1403.	0.000
7.6667	0.855	6.074	1451.	0.000
7.8333	0.858	6.217	1499.	0.000
8.0000	0.861	6.360	1548.	0.000
8.1667	0.864	6.504	1597.	0.000
8.3333	0.866	6.648	1647.	0.000
8.5000	0.869	6.793	1697.	0.000
8.6667	0.872	6.938	1748.	0.000
8.8333	0.875	7.084	1799.	0.000
9.0000	0.877	7.230	1851.	0.000
9.1667	0.880	7.376	1903.	0.000
9.3333	0.883	7.523	1956.	0.000
9.5000	0.886	7.671	2009.	0.000
9.6667	0.889	7.819	2063.	0.000
9.8333	0.891	7.967	2117.	0.000
10.000	0.894	8.116	2172.	0.000
10.167	0.897	8.265	2227.	0.000
10.333	0.900	8.415	2282.	0.000
10.500	0.902	8.565	2338.	0.000
10.667	0.905	8.716	2394.	0.000
10.833	0.908	8.867	2451.	0.000
11.000	0.911	9.019	2509.	0.000
11.167	0.913	9.171	2566.	0.000
11.333	0.916	9.323	2625.	0.000
11.500	0.919	9.476	2683.	0.000
11.667	0.922	9.630	2742.	0.000
11.833	0.924	9.784	2802.	0.000
12.000	0.927	9.938	2862.	0.000
12.167	0.930	10.09	2922.	0.000
12.333	0.933	10.24	2983.	0.000
12.500	0.935	10.40	3044.	0.000
12.667	0.938	10.56	3106.	0.000
12.833	0.941	10.71	3168.	0.000
13.000	0.944	10.87	3231.	0.000
13.167	0.947	11.03	3294.	0.000
13.333	0.949	11.19	3357.	0.000
13.500	0.952	11.34	3421.	0.000
13.667	0.955	11.50	3485.	0.000
13.833	0.958	11.66	3550.	0.000
14.000	0.960	11.82	3615.	0.000
14.167	0.963	11.98	3680.	0.000
14.333	0.966	12.14	3746.	0.000
14.500	0.969	12.30	3813.	0.000
14.667	0.971	12.47	3879.	0.000
14.833	0.974	12.63	3947.	0.000
15.000	0.977	12.79	4014.	0.000
15.167	0.980	12.95	4082.	0.000

DRAFT

POC 3/4

Bottom Length: 244.00 ft.
Bottom Width: 22.00 ft.
Manning's n: 0.04
Channel bottom slope 1: 0.0008 To 1
Channel Left side slope 0: 0.25 To 1
Channel right side slope 2: 0.25 To 1
Discharge Structure
Riser Height: 0 ft.
Riser Diameter: 0 in.
Element Flows To:
Outlet 1 Outlet 2
upstream POC 2

Channel Hydraulic Table

Stage(ft)	Area(ac)	Volume(ac-ft)	Discharge(cfs)	Infilt(cfs)
0.0000	0.123	0.000	0.000	0.000
0.3333	0.124	0.041	4.882	0.000
0.6667	0.125	0.082	15.29	0.000
1.0000	0.126	0.124	29.66	0.000
1.3333	0.127	0.166	47.32	0.000
1.6667	0.127	0.209	67.81	0.000
2.0000	0.128	0.252	90.84	0.000
2.3333	0.129	0.295	116.1	0.000
2.6667	0.130	0.338	143.5	0.000
3.0000	0.131	0.382	172.8	0.000
3.3333	0.132	0.426	204.0	0.000
3.6667	0.133	0.470	236.8	0.000
4.0000	0.134	0.515	271.3	0.000
4.3333	0.135	0.560	307.2	0.000
4.6667	0.136	0.605	344.6	0.000
5.0000	0.137	0.651	383.4	0.000
5.3333	0.138	0.697	423.5	0.000
5.6667	0.139	0.743	464.9	0.000
6.0000	0.140	0.789	507.6	0.000
6.3333	0.141	0.836	551.4	0.000
6.6667	0.141	0.883	596.4	0.000
7.0000	0.142	0.931	642.5	0.000
7.3333	0.143	0.979	689.7	0.000
7.6667	0.144	1.027	738.0	0.000
8.0000	0.145	1.075	787.4	0.000
8.3333	0.146	1.124	837.7	0.000
8.6667	0.147	1.173	889.1	0.000
9.0000	0.148	1.222	941.5	0.000
9.3333	0.149	1.272	994.9	0.000
9.6667	0.150	1.322	1049.	0.000
10.000	0.151	1.372	1104.	0.000
10.333	0.152	1.423	1160.	0.000
10.667	0.153	1.473	1217.	0.000
11.000	0.154	1.525	1275.	0.000
11.333	0.155	1.576	1334.	0.000
11.667	0.155	1.628	1394.	0.000
12.000	0.156	1.680	1455.	0.000
12.333	0.157	1.732	1517.	0.000
12.667	0.158	1.785	1579.	0.000
13.000	0.159	1.838	1643.	0.000

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13.333	0.160	1.892	1707.	0.000
13.667	0.161	1.945	1772.	0.000
14.000	0.162	1.999	1838.	0.000
14.333	0.163	2.054	1905.	0.000
14.667	0.164	2.108	1973.	0.000
15.000	0.165	2.163	2041.	0.000
15.333	0.166	2.218	2110.	0.000
15.667	0.167	2.274	2181.	0.000
16.000	0.168	2.330	2252.	0.000
16.333	0.169	2.386	2324.	0.000
16.667	0.169	2.443	2396.	0.000
17.000	0.170	2.499	2470.	0.000
17.333	0.171	2.556	2544.	0.000
17.667	0.172	2.614	2619.	0.000
18.000	0.173	2.672	2695.	0.000
18.333	0.174	2.730	2772.	0.000
18.667	0.175	2.788	2850.	0.000
19.000	0.176	2.847	2928.	0.000
19.333	0.177	2.906	3008.	0.000
19.667	0.178	2.965	3088.	0.000
20.000	0.179	3.025	3169.	0.000
20.333	0.180	3.084	3251.	0.000
20.667	0.181	3.145	3333.	0.000
21.000	0.182	3.205	3417.	0.000
21.333	0.183	3.266	3501.	0.000
21.667	0.183	3.327	3586.	0.000
22.000	0.184	3.389	3672.	0.000
22.333	0.185	3.450	3759.	0.000
22.667	0.186	3.513	3846.	0.000
23.000	0.187	3.575	3935.	0.000
23.333	0.188	3.638	4024.	0.000
23.667	0.189	3.701	4114.	0.000
24.000	0.190	3.764	4205.	0.000
24.333	0.191	3.828	4296.	0.000
24.667	0.192	3.892	4389.	0.000
25.000	0.193	3.956	4482.	0.000
25.333	0.194	4.021	4576.	0.000
25.667	0.195	4.085	4671.	0.000
26.000	0.196	4.151	4767.	0.000
26.333	0.197	4.216	4864.	0.000
26.667	0.198	4.282	4961.	0.000
27.000	0.198	4.348	5059.	0.000
27.333	0.199	4.415	5159.	0.000
27.667	0.200	4.481	5258.	0.000
28.000	0.201	4.548	5359.	0.000
28.333	0.202	4.616	5461.	0.000
28.667	0.203	4.683	5563.	0.000
29.000	0.204	4.751	5667.	0.000
29.333	0.205	4.820	5771.	0.000
29.667	0.206	4.888	5876.	0.000
30.000	0.207	4.957	5982.	0.000
30.333	0.208	5.027	6088.	0.000

DRAFT

Urban 3

Bottom Length: 1223.00 ft.
Bottom Width: 6.00 ft.
Manning's n: 0.03
Channel bottom slope 1: 0.0163 To 1
Channel Left side slope 0: 0.5 To 1
Channel right side slope 2: 0.5 To 1
Discharge Structure
Riser Height: 0 ft.
Riser Diameter: 0 in.
Element Flows To:
Outlet 1 Outlet 2
POC 3/4

Channel Hydraulic Table

Stage(ft)	Area(ac)	Volume(ac-ft)	Discharge(cfs)	Infilt(cfs)
0.0000	0.168	0.000	0.000	0.000
0.0889	0.171	0.015	0.667	0.000
0.1778	0.173	0.030	2.099	0.000
0.2667	0.175	0.045	4.093	0.000
0.3556	0.178	0.061	6.560	0.000
0.4444	0.180	0.077	9.446	0.000
0.5333	0.183	0.093	12.71	0.000
0.6222	0.185	0.110	16.33	0.000
0.7111	0.188	0.126	20.28	0.000
0.8000	0.190	0.143	24.54	0.000
0.8889	0.193	0.160	29.10	0.000
0.9778	0.195	0.178	33.94	0.000
1.0667	0.198	0.195	39.06	0.000
1.1556	0.200	0.213	44.44	0.000
1.2444	0.203	0.231	50.08	0.000
1.3333	0.205	0.249	55.97	0.000
1.4222	0.208	0.268	62.11	0.000
1.5111	0.210	0.286	68.49	0.000
1.6000	0.213	0.305	75.11	0.000
1.6889	0.215	0.324	81.96	0.000
1.7778	0.218	0.343	89.04	0.000
1.8667	0.220	0.363	96.34	0.000
1.9556	0.223	0.383	103.8	0.000
2.0444	0.225	0.403	111.6	0.000
2.1333	0.228	0.423	119.6	0.000
2.2222	0.230	0.443	127.8	0.000
2.3111	0.233	0.464	136.2	0.000
2.4000	0.235	0.485	144.8	0.000
2.4889	0.238	0.506	153.7	0.000
2.5778	0.240	0.527	162.7	0.000
2.6667	0.243	0.549	172.0	0.000
2.7556	0.245	0.570	181.5	0.000
2.8444	0.248	0.592	191.2	0.000
2.9333	0.250	0.615	201.2	0.000
3.0222	0.253	0.637	211.3	0.000
3.1111	0.255	0.660	221.7	0.000
3.2000	0.258	0.682	232.2	0.000
3.2889	0.260	0.705	243.0	0.000
3.3778	0.263	0.729	254.0	0.000
3.4667	0.265	0.752	265.2	0.000

DRAFT

3.5556	0.268	0.776	276.7	0.000
3.6444	0.270	0.800	288.3	0.000
3.7333	0.273	0.824	300.2	0.000
3.8222	0.275	0.849	312.3	0.000
3.9111	0.278	0.873	324.5	0.000
4.0000	0.280	0.898	337.1	0.000
4.0889	0.283	0.923	349.8	0.000
4.1778	0.285	0.948	362.7	0.000
4.2667	0.288	0.974	375.9	0.000
4.3556	0.290	1.000	389.3	0.000
4.4444	0.293	1.026	402.9	0.000
4.5333	0.295	1.052	416.7	0.000
4.6222	0.298	1.078	430.7	0.000
4.7111	0.300	1.105	445.0	0.000
4.8000	0.303	1.132	459.5	0.000
4.8889	0.305	1.159	474.2	0.000
4.9778	0.308	1.186	489.1	0.000
5.0667	0.310	1.214	504.3	0.000
5.1556	0.313	1.241	519.7	0.000
5.2444	0.315	1.269	535.3	0.000
5.3333	0.318	1.297	551.1	0.000
5.4222	0.320	1.326	567.2	0.000
5.5111	0.323	1.354	583.4	0.000
5.6000	0.325	1.383	600.0	0.000
5.6889	0.328	1.412	616.7	0.000
5.7778	0.330	1.442	633.7	0.000
5.8667	0.333	1.471	650.9	0.000
5.9556	0.335	1.501	668.3	0.000
6.0444	0.338	1.531	686.0	0.000
6.1333	0.340	1.561	703.9	0.000
6.2222	0.343	1.591	722.0	0.000
6.3111	0.345	1.622	740.4	0.000
6.4000	0.348	1.653	759.0	0.000
6.4889	0.350	1.684	777.9	0.000
6.5778	0.353	1.715	797.0	0.000
6.6667	0.355	1.747	816.3	0.000
6.7556	0.358	1.778	835.9	0.000
6.8444	0.360	1.810	855.7	0.000
6.9333	0.363	1.843	875.7	0.000
7.0222	0.365	1.875	896.0	0.000
7.1111	0.368	1.908	916.5	0.000
7.2000	0.370	1.940	937.3	0.000
7.2889	0.373	1.973	958.3	0.000
7.3778	0.375	2.007	979.6	0.000
7.4667	0.378	2.040	1001.	0.000
7.5556	0.380	2.074	1022.	0.000
7.6444	0.383	2.108	1044.	0.000
7.7333	0.385	2.142	1067.	0.000
7.8222	0.388	2.176	1089.	0.000
7.9111	0.390	2.211	1112.	0.000
8.0000	0.393	2.246	1135.	0.000
8.0889	0.395	2.281	1158.	0.000

DRAFT

Channel 12

Bottom Length: 3016.00 ft.
Bottom Width: 5.00 ft.
Manning's n: 0.035
Channel bottom slope 1: 0.0146 To 1
Channel Left side slope 0: 0.5 To 1
Channel right side slope 2: 0.5 To 1
Discharge Structure
Riser Height: 0 ft.
Riser Diameter: 0 in.
Element Flows To:
Outlet 1 Outlet 2
Upstream POC 3/4

Channel Hydraulic Table

Stage(ft)	Area(ac)	Volume(ac-ft)	Discharge(cfs)	Infilt(cfs)
0.0000	0.346	0.000	0.000	0.000
0.0889	0.352	0.031	0.450	0.000
0.1778	0.358	0.062	1.414	0.000
0.2667	0.364	0.094	2.754	0.000
0.3556	0.370	0.127	4.409	0.000
0.4444	0.377	0.160	6.342	0.000
0.5333	0.383	0.194	8.529	0.000
0.6222	0.389	0.228	10.95	0.000
0.7111	0.395	0.263	13.59	0.000
0.8000	0.401	0.299	16.44	0.000
0.8889	0.407	0.335	19.48	0.000
0.9778	0.413	0.371	22.72	0.000
1.0667	0.420	0.408	26.14	0.000
1.1556	0.426	0.446	29.74	0.000
1.2444	0.432	0.484	33.52	0.000
1.3333	0.438	0.523	37.47	0.000
1.4222	0.444	0.562	41.58	0.000
1.5111	0.450	0.602	45.86	0.000
1.6000	0.457	0.642	50.30	0.000
1.6889	0.463	0.683	54.91	0.000
1.7778	0.469	0.724	59.67	0.000
1.8667	0.475	0.766	64.59	0.000
1.9556	0.481	0.809	69.67	0.000
2.0444	0.487	0.852	74.90	0.000
2.1333	0.493	0.896	80.29	0.000
2.2222	0.500	0.940	85.84	0.000
2.3111	0.506	0.985	91.54	0.000
2.4000	0.512	1.030	97.39	0.000
2.4889	0.518	1.076	103.4	0.000
2.5778	0.524	1.122	109.5	0.000
2.6667	0.530	1.169	115.8	0.000
2.7556	0.537	1.216	122.3	0.000
2.8444	0.543	1.264	128.9	0.000
2.9333	0.549	1.313	135.7	0.000
3.0222	0.555	1.362	142.6	0.000
3.1111	0.561	1.412	149.7	0.000
3.2000	0.567	1.462	157.0	0.000
3.2889	0.573	1.513	164.4	0.000
3.3778	0.580	1.564	171.9	0.000
3.4667	0.586	1.616	179.6	0.000

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3.5556	0.592	1.668	187.5	0.000
3.6444	0.598	1.721	195.5	0.000
3.7333	0.604	1.775	203.7	0.000
3.8222	0.610	1.829	212.0	0.000
3.9111	0.617	1.883	220.5	0.000
4.0000	0.623	1.938	229.2	0.000
4.0889	0.629	1.994	238.0	0.000
4.1778	0.635	2.050	247.0	0.000
4.2667	0.641	2.107	256.1	0.000
4.3556	0.647	2.164	265.4	0.000
4.4444	0.653	2.222	274.9	0.000
4.5333	0.660	2.280	284.5	0.000
4.6222	0.666	2.339	294.3	0.000
4.7111	0.672	2.399	304.3	0.000
4.8000	0.678	2.459	314.4	0.000
4.8889	0.684	2.520	324.7	0.000
4.9778	0.690	2.581	335.1	0.000
5.0667	0.697	2.642	345.8	0.000
5.1556	0.703	2.705	356.5	0.000
5.2444	0.709	2.767	367.5	0.000
5.3333	0.715	2.831	378.6	0.000
5.4222	0.721	2.895	389.9	0.000
5.5111	0.727	2.959	401.4	0.000
5.6000	0.734	3.024	413.0	0.000
5.6889	0.740	3.089	424.9	0.000
5.7778	0.746	3.156	436.8	0.000
5.8667	0.752	3.222	449.0	0.000
5.9556	0.758	3.289	461.3	0.000
6.0444	0.764	3.357	473.9	0.000
6.1333	0.770	3.425	486.5	0.000
6.2222	0.777	3.494	499.4	0.000
6.3111	0.783	3.563	512.4	0.000
6.4000	0.789	3.633	525.7	0.000
6.4889	0.795	3.704	539.1	0.000
6.5778	0.801	3.775	552.7	0.000
6.6667	0.807	3.846	566.4	0.000
6.7556	0.814	3.918	580.4	0.000
6.8444	0.820	3.991	594.5	0.000
6.9333	0.826	4.064	608.8	0.000
7.0222	0.832	4.138	623.3	0.000
7.1111	0.838	4.212	638.0	0.000
7.2000	0.844	4.287	652.8	0.000
7.2889	0.850	4.362	667.9	0.000
7.3778	0.857	4.438	683.1	0.000
7.4667	0.863	4.515	698.5	0.000
7.5556	0.869	4.592	714.2	0.000
7.6444	0.875	4.669	730.0	0.000
7.7333	0.881	4.747	746.0	0.000
7.8222	0.887	4.826	762.1	0.000
7.9111	0.894	4.905	778.5	0.000
8.0000	0.900	4.985	795.1	0.000
8.0889	0.906	5.065	811.8	0.000

DRAFT

DB 2

Depth: 6 ft.
Element Flows To:
Outlet 1 Outlet 2
Channel 12

SSD Table Hydraulic Table

Stage (ft)	Area (ac)	Volume (ac-ft)	Manual	NotUsed	NotUsed	NotUsed	NotUsed
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2.000	2.670	4.590	10.000	0.000	0.000	0.000	0.000
4.000	3.300	10.55	50.00	0.000	0.000	0.000	0.000
6.000	3.950	17.79	999.0	0.000	0.000	0.000	0.000

DRAFT

HMB 12

Depth: 8.1 ft.
Element Flows To:
Outlet 1 Outlet 2
DB 2

SSD Table Hydraulic Table

Stage (ft)	Area (ac)	Volume (ac-ft)	Manual	NotUsed	NotUsed	NotUsed	NotUsed
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.010	0.340	0.003	0.001	0.000	0.000	0.000	0.000
0.100	0.345	0.033	0.026	0.000	0.000	0.000	0.000
0.200	0.350	0.067	0.074	0.000	0.000	0.000	0.000
0.300	0.355	0.102	0.126	0.000	0.000	0.000	0.000
0.400	0.360	0.137	0.158	0.000	0.000	0.000	0.000
0.500	0.365	0.173	0.184	0.000	0.000	0.000	0.000
0.600	0.370	0.210	0.207	0.000	0.000	0.000	0.000
0.700	0.375	0.247	0.228	0.000	0.000	0.000	0.000
0.800	0.380	0.284	0.247	0.000	0.000	0.000	0.000
0.900	0.385	0.322	0.265	0.000	0.000	0.000	0.000
1.000	0.390	0.360	0.281	0.000	0.000	0.000	0.000
1.100	0.395	0.399	0.297	0.000	0.000	0.000	0.000
1.200	0.400	0.439	0.312	0.000	0.000	0.000	0.000
1.300	0.405	0.479	0.326	0.000	0.000	0.000	0.000
1.400	0.410	0.519	0.340	0.000	0.000	0.000	0.000
1.500	0.415	0.560	0.353	0.000	0.000	0.000	0.000
1.600	0.420	0.602	0.365	0.000	0.000	0.000	0.000
1.700	0.425	0.644	0.378	0.000	0.000	0.000	0.000
1.800	0.430	0.686	0.389	0.000	0.000	0.000	0.000
1.900	0.435	0.729	0.401	0.000	0.000	0.000	0.000
2.000	0.440	0.773	0.412	0.000	0.000	0.000	0.000
2.100	0.445	0.817	0.423	0.000	0.000	0.000	0.000
2.200	0.450	0.861	0.433	0.000	0.000	0.000	0.000
2.300	0.455	0.906	0.444	0.000	0.000	0.000	0.000
2.400	0.460	0.952	0.454	0.000	0.000	0.000	0.000
2.500	0.465	0.998	0.464	0.000	0.000	0.000	0.000
2.600	0.470	1.044	0.473	0.000	0.000	0.000	0.000
2.700	0.475	1.091	0.483	0.000	0.000	0.000	0.000
2.800	0.480	1.139	0.492	0.000	0.000	0.000	0.000
2.900	0.485	1.187	0.501	0.000	0.000	0.000	0.000
3.000	0.490	1.236	0.510	0.000	0.000	0.000	0.000
3.100	0.495	1.285	0.519	0.000	0.000	0.000	0.000
3.200	0.500	1.334	0.528	0.000	0.000	0.000	0.000
3.300	0.505	1.384	0.536	0.000	0.000	0.000	0.000
3.400	0.510	1.435	0.545	0.000	0.000	0.000	0.000
3.500	0.515	1.486	0.553	0.000	0.000	0.000	0.000
3.600	0.520	1.538	0.561	0.000	0.000	0.000	0.000
3.700	0.525	1.590	0.569	0.000	0.000	0.000	0.000
3.800	0.530	1.642	0.577	0.000	0.000	0.000	0.000
3.900	0.535	1.695	0.585	0.000	0.000	0.000	0.000
4.000	0.540	1.749	0.592	0.000	0.000	0.000	0.000
4.100	0.545	1.803	0.705	0.000	0.000	0.000	0.000
4.200	0.550	1.858	0.905	0.000	0.000	0.000	0.000
4.300	0.555	1.913	1.162	0.000	0.000	0.000	0.000
4.400	0.560	1.969	1.465	0.000	0.000	0.000	0.000
4.500	0.565	2.025	1.807	0.000	0.000	0.000	0.000

DRAFT

4.600	0.570	2.082	2.061	0.000	0.000	0.000	0.000
4.700	0.575	2.139	2.259	0.000	0.000	0.000	0.000
4.800	0.580	2.197	2.436	0.000	0.000	0.000	0.000
4.900	0.585	2.255	2.599	0.000	0.000	0.000	0.000
5.000	0.590	2.314	2.749	0.000	0.000	0.000	0.000
5.100	0.595	2.373	2.891	0.000	0.000	0.000	0.000
5.200	0.600	2.432	3.024	0.000	0.000	0.000	0.000
5.300	0.605	2.493	3.152	0.000	0.000	0.000	0.000
5.400	0.610	2.553	3.273	0.000	0.000	0.000	0.000
5.500	0.615	2.615	3.389	0.000	0.000	0.000	0.000
5.600	0.620	2.676	3.501	0.000	0.000	0.000	0.000
5.700	0.625	2.739	3.610	0.000	0.000	0.000	0.000
5.800	0.630	2.802	3.714	0.000	0.000	0.000	0.000
5.900	0.635	2.865	3.816	0.000	0.000	0.000	0.000
6.000	0.640	2.929	3.914	0.000	0.000	0.000	0.000
6.100	0.645	2.993	4.010	0.000	0.000	0.000	0.000
6.200	0.650	3.058	4.104	0.000	0.000	0.000	0.000
6.300	0.655	3.123	4.195	0.000	0.000	0.000	0.000
6.400	0.660	3.189	4.284	0.000	0.000	0.000	0.000
6.500	0.665	3.255	4.371	0.000	0.000	0.000	0.000
6.600	0.670	3.322	4.456	0.000	0.000	0.000	0.000
6.700	0.675	3.389	4.540	0.000	0.000	0.000	0.000
6.800	0.680	3.457	4.622	0.000	0.000	0.000	0.000
6.900	0.685	3.525	4.702	0.000	0.000	0.000	0.000
7.000	0.690	3.594	4.781	0.000	0.000	0.000	0.000
7.100	0.695	3.664	5.186	0.000	0.000	0.000	0.000
7.200	0.700	3.734	5.859	0.000	0.000	0.000	0.000
7.300	0.705	3.804	6.707	0.000	0.000	0.000	0.000
7.400	0.710	3.875	7.696	0.000	0.000	0.000	0.000
7.500	0.715	3.946	8.807	0.000	0.000	0.000	0.000
7.600	0.720	4.018	10.03	0.000	0.000	0.000	0.000
7.700	0.725	4.091	11.35	0.000	0.000	0.000	0.000
7.800	0.730	4.164	12.76	0.000	0.000	0.000	0.000
7.900	0.735	4.237	14.25	0.000	0.000	0.000	0.000
8.000	0.740	4.311	15.83	0.000	0.000	0.000	0.000
8.100	0.800	4.400	999.0	0.000	0.000	0.000	0.000

DRAFT

HMB 4

Depth: 8 ft.
Element Flows To:
Outlet 1 Outlet 2
POC 3/4

SSD Table Hydraulic Table

Stage (ft)	Area (ac)	Volume (ac-ft)	Manual	NotUsed	NotUsed	NotUsed	NotUsed
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.010	0.100	0.001	0.001	0.000	0.000	0.000	0.000
0.100	0.106	0.008	0.018	0.000	0.000	0.000	0.000
0.200	0.111	0.019	0.046	0.000	0.000	0.000	0.000
0.300	0.116	0.030	0.062	0.000	0.000	0.000	0.000
0.400	0.121	0.042	0.075	0.000	0.000	0.000	0.000
0.500	0.125	0.054	0.086	0.000	0.000	0.000	0.000
0.600	0.130	0.066	0.096	0.000	0.000	0.000	0.000
0.700	0.135	0.080	0.105	0.000	0.000	0.000	0.000
0.800	0.140	0.093	0.113	0.000	0.000	0.000	0.000
0.900	0.145	0.107	0.121	0.000	0.000	0.000	0.000
1.000	0.150	0.122	0.128	0.000	0.000	0.000	0.000
1.100	0.155	0.137	0.135	0.000	0.000	0.000	0.000
1.200	0.160	0.153	0.141	0.000	0.000	0.000	0.000
1.300	0.165	0.169	0.148	0.000	0.000	0.000	0.000
1.400	0.170	0.185	0.153	0.000	0.000	0.000	0.000
1.500	0.175	0.202	0.159	0.000	0.000	0.000	0.000
1.600	0.180	0.220	0.165	0.000	0.000	0.000	0.000
1.700	0.185	0.238	0.170	0.000	0.000	0.000	0.000
1.800	0.190	0.257	0.175	0.000	0.000	0.000	0.000
1.900	0.195	0.276	0.180	0.000	0.000	0.000	0.000
2.000	0.200	0.295	0.185	0.000	0.000	0.000	0.000
2.100	0.205	0.315	0.190	0.000	0.000	0.000	0.000
2.200	0.210	0.336	0.195	0.000	0.000	0.000	0.000
2.300	0.214	0.357	0.199	0.000	0.000	0.000	0.000
2.400	0.219	0.378	0.204	0.000	0.000	0.000	0.000
2.500	0.224	0.400	0.208	0.000	0.000	0.000	0.000
2.600	0.229	0.423	0.212	0.000	0.000	0.000	0.000
2.700	0.234	0.445	0.216	0.000	0.000	0.000	0.000
2.800	0.239	0.469	0.220	0.000	0.000	0.000	0.000
2.900	0.244	0.493	0.224	0.000	0.000	0.000	0.000
3.000	0.249	0.517	0.228	0.000	0.000	0.000	0.000
3.100	0.254	0.542	0.232	0.000	0.000	0.000	0.000
3.200	0.259	0.568	0.236	0.000	0.000	0.000	0.000
3.300	0.263	0.593	0.240	0.000	0.000	0.000	0.000
3.400	0.268	0.620	0.244	0.000	0.000	0.000	0.000
3.500	0.273	0.647	0.247	0.000	0.000	0.000	0.000
3.600	0.278	0.674	0.251	0.000	0.000	0.000	0.000
3.700	0.283	0.702	0.254	0.000	0.000	0.000	0.000
3.800	0.288	0.730	0.284	0.000	0.000	0.000	0.000
3.900	0.293	0.759	0.336	0.000	0.000	0.000	0.000
4.000	0.297	0.788	0.401	0.000	0.000	0.000	0.000
4.100	0.302	0.818	0.479	0.000	0.000	0.000	0.000
4.200	0.307	0.848	0.566	0.000	0.000	0.000	0.000
4.300	0.312	0.879	0.631	0.000	0.000	0.000	0.000
4.400	0.317	0.910	0.682	0.000	0.000	0.000	0.000
4.500	0.322	0.942	0.727	0.000	0.000	0.000	0.000

DRAFT

4.600	0.326	0.974	0.875	0.000	0.000	0.000	0.000
4.700	0.331	1.007	1.106	0.000	0.000	0.000	0.000
4.800	0.336	1.040	1.393	0.000	0.000	0.000	0.000
4.900	0.341	1.074	1.723	0.000	0.000	0.000	0.000
5.000	0.346	1.108	2.091	0.000	0.000	0.000	0.000
5.100	0.351	1.143	2.493	0.000	0.000	0.000	0.000
5.200	0.355	1.178	2.926	0.000	0.000	0.000	0.000
5.300	0.360	1.214	3.388	0.000	0.000	0.000	0.000
5.400	0.365	1.250	3.876	0.000	0.000	0.000	0.000
5.500	0.370	1.287	4.391	0.000	0.000	0.000	0.000
5.600	0.375	1.324	4.929	0.000	0.000	0.000	0.000
5.700	0.379	1.361	5.491	0.000	0.000	0.000	0.000
5.800	0.384	1.399	6.074	0.000	0.000	0.000	0.000
5.900	0.389	1.438	6.679	0.000	0.000	0.000	0.000
6.000	0.394	1.477	7.305	0.000	0.000	0.000	0.000
6.100	0.398	1.517	8.712	0.000	0.000	0.000	0.000
6.200	0.403	1.557	10.66	0.000	0.000	0.000	0.000
6.300	0.408	1.597	13.03	0.000	0.000	0.000	0.000
6.400	0.413	1.638	15.76	0.000	0.000	0.000	0.000
6.500	0.418	1.680	18.79	0.000	0.000	0.000	0.000
6.600	0.422	1.722	22.09	0.000	0.000	0.000	0.000
6.700	0.427	1.764	25.64	0.000	0.000	0.000	0.000
6.800	0.432	1.807	29.42	0.000	0.000	0.000	0.000
6.900	0.437	1.851	33.41	0.000	0.000	0.000	0.000
7.000	0.441	1.895	37.60	0.000	0.000	0.000	0.000
7.100	0.446	1.939	41.98	0.000	0.000	0.000	0.000
7.200	0.451	1.984	46.55	0.000	0.000	0.000	0.000
7.300	0.456	2.030	51.29	0.000	0.000	0.000	0.000
7.400	0.460	2.076	56.20	0.000	0.000	0.000	0.000
7.500	0.465	2.122	61.27	0.000	0.000	0.000	0.000
7.600	0.470	2.169	66.50	0.000	0.000	0.000	0.000
7.700	0.474	2.217	71.89	0.000	0.000	0.000	0.000
7.800	0.479	2.264	77.42	0.000	0.000	0.000	0.000
7.900	0.484	2.313	83.10	0.000	0.000	0.000	0.000
8.000	0.489	2.362	999.0	0.000	0.000	0.000	0.000

DRAFT

SF POC 3/4

Bottom Length: 749.00 ft.
Bottom Width: 4.00 ft.
Manning's n: 0.035
Channel bottom slope 1: 0.0214 To 1
Channel Left side slope 0: 0.5 To 1
Channel right side slope 2: 0.5 To 1
Discharge Structure
Riser Height: 0 ft.
Riser Diameter: 0 in.
Element Flows To:
Outlet 1 Outlet 2
POC 3/4

Channel Hydraulic Table

Stage(ft)	Area(ac)	Volume(ac-ft)	Discharge(cfs)	Infilt(cfs)
0.0000	0.068	0.000	0.000	0.000
0.0889	0.070	0.006	0.434	0.000
0.1778	0.071	0.012	1.363	0.000
0.2667	0.073	0.019	2.649	0.000
0.3556	0.074	0.025	4.235	0.000
0.4444	0.076	0.032	6.085	0.000
0.5333	0.078	0.039	8.176	0.000
0.6222	0.079	0.046	10.48	0.000
0.7111	0.081	0.053	13.01	0.000
0.8000	0.082	0.060	15.73	0.000
0.8889	0.084	0.067	18.64	0.000
0.9778	0.085	0.075	21.74	0.000
1.0667	0.087	0.083	25.02	0.000
1.1556	0.088	0.091	28.47	0.000
1.2444	0.090	0.098	32.09	0.000
1.3333	0.091	0.107	35.88	0.000
1.4222	0.093	0.115	39.84	0.000
1.5111	0.094	0.123	43.97	0.000
1.6000	0.096	0.132	48.25	0.000
1.6889	0.097	0.140	52.70	0.000
1.7778	0.099	0.149	57.32	0.000
1.8667	0.100	0.158	62.09	0.000
1.9556	0.102	0.167	67.02	0.000
2.0444	0.103	0.176	72.12	0.000
2.1333	0.105	0.185	77.37	0.000
2.2222	0.107	0.195	82.79	0.000
2.3111	0.108	0.204	88.37	0.000
2.4000	0.110	0.214	94.10	0.000
2.4889	0.111	0.224	100.0	0.000
2.5778	0.113	0.234	106.0	0.000
2.6667	0.114	0.244	112.2	0.000
2.7556	0.116	0.254	118.6	0.000
2.8444	0.117	0.265	125.2	0.000
2.9333	0.119	0.275	131.9	0.000
3.0222	0.120	0.286	138.8	0.000
3.1111	0.122	0.297	145.8	0.000
3.2000	0.123	0.308	153.0	0.000
3.2889	0.125	0.319	160.4	0.000
3.3778	0.126	0.330	167.9	0.000
3.4667	0.128	0.341	175.7	0.000

DRAFT

3.5556	0.129	0.353	183.5	0.000
3.6444	0.131	0.364	191.6	0.000
3.7333	0.133	0.376	199.8	0.000
3.8222	0.134	0.388	208.2	0.000
3.9111	0.136	0.400	216.8	0.000
4.0000	0.137	0.412	225.5	0.000
4.0889	0.139	0.425	234.4	0.000
4.1778	0.140	0.437	243.5	0.000
4.2667	0.142	0.450	252.8	0.000
4.3556	0.143	0.462	262.3	0.000
4.4444	0.145	0.475	271.9	0.000
4.5333	0.146	0.488	281.7	0.000
4.6222	0.148	0.501	291.7	0.000
4.7111	0.149	0.514	301.8	0.000
4.8000	0.151	0.528	312.2	0.000
4.8889	0.152	0.541	322.7	0.000
4.9778	0.154	0.555	333.5	0.000
5.0667	0.155	0.569	344.4	0.000
5.1556	0.157	0.583	355.5	0.000
5.2444	0.159	0.597	366.7	0.000
5.3333	0.160	0.611	378.2	0.000
5.4222	0.162	0.625	389.9	0.000
5.5111	0.163	0.640	401.7	0.000
5.6000	0.165	0.654	413.7	0.000
5.6889	0.166	0.669	426.0	0.000
5.7778	0.168	0.684	438.4	0.000
5.8667	0.169	0.699	451.0	0.000
5.9556	0.171	0.714	463.8	0.000
6.0444	0.172	0.730	476.9	0.000
6.1333	0.174	0.745	490.1	0.000
6.2222	0.175	0.761	503.5	0.000
6.3111	0.177	0.776	517.1	0.000
6.4000	0.178	0.792	530.9	0.000
6.4889	0.180	0.808	544.9	0.000
6.5778	0.181	0.824	559.1	0.000
6.6667	0.183	0.840	573.5	0.000
6.7556	0.185	0.857	588.2	0.000
6.8444	0.186	0.873	603.0	0.000
6.9333	0.188	0.890	618.0	0.000
7.0222	0.189	0.907	633.3	0.000
7.1111	0.191	0.924	648.7	0.000
7.2000	0.192	0.941	664.4	0.000
7.2889	0.194	0.958	680.2	0.000
7.3778	0.195	0.975	696.3	0.000
7.4667	0.197	0.993	712.6	0.000
7.5556	0.198	1.010	729.1	0.000
7.6444	0.200	1.028	745.9	0.000
7.7333	0.201	1.046	762.8	0.000
7.8222	0.203	1.064	780.0	0.000
7.9111	0.204	1.082	797.3	0.000
8.0000	0.206	1.100	814.9	0.000
8.0889	0.208	1.119	832.8	0.000

DRAFT

POC 11

Bottom Length: 1435.00 ft.
Bottom Width: 4.00 ft.
Manning's n: 0.035
Channel bottom slope 1: 0.0223 To 1
Channel Left side slope 0: 0.5 To 1
Channel right side slope 2: 0.5 To 1
Discharge Structure
Riser Height: 0 ft.
Riser Diameter: 0 in.
Element Flows To:
Outlet 1 Outlet 2
SF POC 3/4

Channel Hydraulic Table

Stage(ft)	Area(ac)	Volume(ac-ft)	Discharge(cfs)	Infilt(cfs)
0.0000	0.131	0.000	0.000	0.000
0.0889	0.134	0.011	0.444	0.000
0.1778	0.137	0.023	1.391	0.000
0.2667	0.140	0.036	2.704	0.000
0.3556	0.143	0.048	4.323	0.000
0.4444	0.146	0.061	6.212	0.000
0.5333	0.149	0.075	8.346	0.000
0.6222	0.152	0.088	10.70	0.000
0.7111	0.155	0.102	13.28	0.000
0.8000	0.158	0.116	16.06	0.000
0.8889	0.161	0.130	19.03	0.000
0.9778	0.164	0.144	22.19	0.000
1.0667	0.166	0.159	25.54	0.000
1.1556	0.169	0.174	29.06	0.000
1.2444	0.172	0.189	32.76	0.000
1.3333	0.175	0.205	36.63	0.000
1.4222	0.178	0.220	40.67	0.000
1.5111	0.181	0.236	44.88	0.000
1.6000	0.184	0.253	49.26	0.000
1.6889	0.187	0.269	53.80	0.000
1.7778	0.190	0.286	58.51	0.000
1.8667	0.193	0.303	63.38	0.000
1.9556	0.196	0.320	68.42	0.000
2.0444	0.199	0.338	73.62	0.000
2.1333	0.202	0.356	78.98	0.000
2.2222	0.205	0.374	84.51	0.000
2.3111	0.207	0.392	90.21	0.000
2.4000	0.210	0.411	96.06	0.000
2.4889	0.213	0.430	102.0	0.000
2.5778	0.216	0.449	108.2	0.000
2.6667	0.219	0.468	114.6	0.000
2.7556	0.222	0.488	121.1	0.000
2.8444	0.225	0.508	127.8	0.000
2.9333	0.228	0.528	134.6	0.000
3.0222	0.231	0.548	141.7	0.000
3.1111	0.234	0.569	148.9	0.000
3.2000	0.237	0.590	156.2	0.000
3.2889	0.240	0.611	163.7	0.000
3.3778	0.243	0.633	171.4	0.000
3.4667	0.246	0.654	179.3	0.000

DRAFT

3.5556	0.248	0.676	187.4	0.000
3.6444	0.251	0.699	195.6	0.000
3.7333	0.254	0.721	204.0	0.000
3.8222	0.257	0.744	212.6	0.000
3.9111	0.260	0.767	221.3	0.000
4.0000	0.263	0.790	230.2	0.000
4.0889	0.266	0.814	239.3	0.000
4.1778	0.269	0.838	248.6	0.000
4.2667	0.272	0.862	258.1	0.000
4.3556	0.275	0.886	267.7	0.000
4.4444	0.278	0.911	277.5	0.000
4.5333	0.281	0.935	287.6	0.000
4.6222	0.284	0.961	297.8	0.000
4.7111	0.287	0.986	308.1	0.000
4.8000	0.289	1.012	318.7	0.000
4.8889	0.292	1.038	329.5	0.000
4.9778	0.295	1.064	340.4	0.000
5.0667	0.298	1.090	351.5	0.000
5.1556	0.301	1.117	362.9	0.000
5.2444	0.304	1.144	374.4	0.000
5.3333	0.307	1.171	386.1	0.000
5.4222	0.310	1.198	398.0	0.000
5.5111	0.313	1.226	410.1	0.000
5.6000	0.316	1.254	422.4	0.000
5.6889	0.319	1.282	434.8	0.000
5.7778	0.322	1.311	447.5	0.000
5.8667	0.325	1.340	460.4	0.000
5.9556	0.328	1.369	473.5	0.000
6.0444	0.331	1.398	486.8	0.000
6.1333	0.333	1.428	500.3	0.000
6.2222	0.336	1.457	513.9	0.000
6.3111	0.339	1.487	527.8	0.000
6.4000	0.342	1.518	541.9	0.000
6.4889	0.345	1.548	556.2	0.000
6.5778	0.348	1.579	570.8	0.000
6.6667	0.351	1.610	585.5	0.000
6.7556	0.354	1.642	600.4	0.000
6.8444	0.357	1.673	615.5	0.000
6.9333	0.360	1.705	630.9	0.000
7.0222	0.363	1.737	646.4	0.000
7.1111	0.366	1.770	662.2	0.000
7.2000	0.369	1.802	678.2	0.000
7.2889	0.372	1.835	694.4	0.000
7.3778	0.374	1.869	710.8	0.000
7.4667	0.377	1.902	727.5	0.000
7.5556	0.380	1.936	744.3	0.000
7.6444	0.383	1.970	761.4	0.000
7.7333	0.386	2.004	778.7	0.000
7.8222	0.389	2.038	796.2	0.000
7.9111	0.392	2.073	813.9	0.000
8.0000	0.395	2.108	831.9	0.000
8.0889	0.398	2.143	850.1	0.000

DRAFT

HMB 11

Depth: 8.1 ft.
Element Flows To:
Outlet 1 Outlet 2
POC 11

SSD Table Hydraulic Table

Stage (ft)	Area (ac)	Volume (ac-ft)	Manual	NotUsed	NotUsed	NotUsed	NotUsed
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.010	0.100	0.001	0.000	0.000	0.000	0.000	0.000
0.100	0.104	0.010	0.013	0.000	0.000	0.000	0.000
0.200	0.108	0.021	0.028	0.000	0.000	0.000	0.000
0.300	0.112	0.032	0.037	0.000	0.000	0.000	0.000
0.400	0.116	0.044	0.044	0.000	0.000	0.000	0.000
0.500	0.120	0.056	0.050	0.000	0.000	0.000	0.000
0.600	0.124	0.068	0.055	0.000	0.000	0.000	0.000
0.700	0.128	0.081	0.060	0.000	0.000	0.000	0.000
0.800	0.132	0.094	0.065	0.000	0.000	0.000	0.000
0.900	0.135	0.107	0.069	0.000	0.000	0.000	0.000
1.000	0.139	0.121	0.073	0.000	0.000	0.000	0.000
1.100	0.143	0.135	0.077	0.000	0.000	0.000	0.000
1.200	0.147	0.150	0.080	0.000	0.000	0.000	0.000
1.300	0.151	0.165	0.084	0.000	0.000	0.000	0.000
1.400	0.155	0.180	0.087	0.000	0.000	0.000	0.000
1.500	0.159	0.196	0.090	0.000	0.000	0.000	0.000
1.600	0.162	0.212	0.093	0.000	0.000	0.000	0.000
1.700	0.166	0.228	0.096	0.000	0.000	0.000	0.000
1.800	0.170	0.245	0.099	0.000	0.000	0.000	0.000
1.900	0.174	0.262	0.102	0.000	0.000	0.000	0.000
2.000	0.178	0.280	0.131	0.000	0.000	0.000	0.000
2.100	0.182	0.298	0.182	0.000	0.000	0.000	0.000
2.200	0.185	0.316	0.247	0.000	0.000	0.000	0.000
2.300	0.189	0.335	0.323	0.000	0.000	0.000	0.000
2.400	0.193	0.354	0.409	0.000	0.000	0.000	0.000
2.500	0.197	0.373	0.474	0.000	0.000	0.000	0.000
2.600	0.201	0.393	0.524	0.000	0.000	0.000	0.000
2.700	0.204	0.413	0.569	0.000	0.000	0.000	0.000
2.800	0.208	0.434	0.610	0.000	0.000	0.000	0.000
2.900	0.212	0.455	0.648	0.000	0.000	0.000	0.000
3.000	0.216	0.476	0.684	0.000	0.000	0.000	0.000
3.100	0.220	0.498	0.718	0.000	0.000	0.000	0.000
3.200	0.223	0.520	0.750	0.000	0.000	0.000	0.000
3.300	0.227	0.542	0.781	0.000	0.000	0.000	0.000
3.400	0.231	0.565	0.810	0.000	0.000	0.000	0.000
3.500	0.235	0.588	0.839	0.000	0.000	0.000	0.000
3.600	0.238	0.612	1.024	0.000	0.000	0.000	0.000
3.700	0.242	0.636	1.340	0.000	0.000	0.000	0.000
3.800	0.246	0.660	1.739	0.000	0.000	0.000	0.000
3.900	0.250	0.685	2.207	0.000	0.000	0.000	0.000
4.000	0.253	0.710	2.734	0.000	0.000	0.000	0.000
4.100	0.257	0.735	3.313	0.000	0.000	0.000	0.000
4.200	0.261	0.761	3.940	0.000	0.000	0.000	0.000
4.300	0.265	0.787	4.612	0.000	0.000	0.000	0.000
4.400	0.268	0.814	5.324	0.000	0.000	0.000	0.000
4.500	0.272	0.841	6.076	0.000	0.000	0.000	0.000

DRAFT

4.600	0.276	0.868	6.865	0.000	0.000	0.000	0.000
4.700	0.280	0.896	7.689	0.000	0.000	0.000	0.000
4.800	0.283	0.924	8.547	0.000	0.000	0.000	0.000
4.900	0.287	0.952	9.438	0.000	0.000	0.000	0.000
5.000	0.291	0.981	10.36	0.000	0.000	0.000	0.000
5.100	0.294	1.010	12.03	0.000	0.000	0.000	0.000
5.200	0.298	1.040	14.16	0.000	0.000	0.000	0.000
5.300	0.302	1.070	16.72	0.000	0.000	0.000	0.000
5.400	0.306	1.100	19.62	0.000	0.000	0.000	0.000
5.500	0.309	1.131	22.81	0.000	0.000	0.000	0.000
5.600	0.313	1.162	26.26	0.000	0.000	0.000	0.000
5.700	0.317	1.193	29.96	0.000	0.000	0.000	0.000
5.800	0.320	1.225	33.88	0.000	0.000	0.000	0.000
5.900	0.324	1.257	38.01	0.000	0.000	0.000	0.000
6.000	0.328	1.290	42.34	0.000	0.000	0.000	0.000
6.100	0.331	1.323	46.85	0.000	0.000	0.000	0.000
6.200	0.335	1.356	51.55	0.000	0.000	0.000	0.000
6.300	0.339	1.390	56.41	0.000	0.000	0.000	0.000
6.400	0.342	1.424	61.45	0.000	0.000	0.000	0.000
6.500	0.346	1.458	66.64	0.000	0.000	0.000	0.000
6.600	0.350	1.493	71.99	0.000	0.000	0.000	0.000
6.700	0.353	1.528	77.48	0.000	0.000	0.000	0.000
6.800	0.357	1.564	83.13	0.000	0.000	0.000	0.000
6.900	0.361	1.600	88.91	0.000	0.000	0.000	0.000
7.000	0.364	1.636	94.84	0.000	0.000	0.000	0.000
7.100	0.368	1.673	100.9	0.000	0.000	0.000	0.000
7.200	0.372	1.710	107.1	0.000	0.000	0.000	0.000
7.300	0.375	1.747	113.4	0.000	0.000	0.000	0.000
7.400	0.379	1.785	119.9	0.000	0.000	0.000	0.000
7.500	0.382	1.823	126.4	0.000	0.000	0.000	0.000
7.600	0.386	1.862	133.1	0.000	0.000	0.000	0.000
7.700	0.390	1.901	139.9	0.000	0.000	0.000	0.000
7.800	0.393	1.940	146.9	0.000	0.000	0.000	0.000
7.900	0.397	1.980	153.9	0.000	0.000	0.000	0.000
8.000	0.401	2.020	161.1	0.000	0.000	0.000	0.000
8.100	0.600	3.200	999.0	0.000	0.000	0.000	0.000

DRAFT

HMB 10

Depth: 8.1 ft.
Element Flows To:
Outlet 1 Outlet 2
POC 11

SSD Table Hydraulic Table

Stage (ft)	Area (ac)	Volume (ac-ft)	Manual	NotUsed	NotUsed	NotUsed	NotUsed
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.010	0.540	0.005	0.001	0.000	0.000	0.000	0.000
0.200	0.553	0.110	0.099	0.000	0.000	0.000	0.000
0.300	0.560	0.165	0.168	0.000	0.000	0.000	0.000
0.400	0.567	0.221	0.210	0.000	0.000	0.000	0.000
0.500	0.575	0.278	0.246	0.000	0.000	0.000	0.000
0.600	0.582	0.336	0.277	0.000	0.000	0.000	0.000
0.700	0.589	0.394	0.304	0.000	0.000	0.000	0.000
0.800	0.596	0.453	0.330	0.000	0.000	0.000	0.000
0.900	0.603	0.513	0.353	0.000	0.000	0.000	0.000
1.000	0.610	0.573	0.375	0.000	0.000	0.000	0.000
1.100	0.617	0.635	0.396	0.000	0.000	0.000	0.000
1.200	0.624	0.696	0.416	0.000	0.000	0.000	0.000
1.300	0.631	0.759	0.435	0.000	0.000	0.000	0.000
1.400	0.638	0.822	0.453	0.000	0.000	0.000	0.000
1.500	0.645	0.886	0.471	0.000	0.000	0.000	0.000
1.600	0.652	0.951	0.487	0.000	0.000	0.000	0.000
1.700	0.659	1.017	0.504	0.000	0.000	0.000	0.000
1.800	0.666	1.083	0.519	0.000	0.000	0.000	0.000
1.900	0.673	1.150	0.535	0.000	0.000	0.000	0.000
2.000	0.680	1.217	0.549	0.000	0.000	0.000	0.000
2.100	0.687	1.286	0.564	0.000	0.000	0.000	0.000
2.200	0.694	1.355	0.578	0.000	0.000	0.000	0.000
2.300	0.702	1.425	0.592	0.000	0.000	0.000	0.000
2.400	0.709	1.495	0.605	0.000	0.000	0.000	0.000
2.500	0.716	1.566	0.618	0.000	0.000	0.000	0.000
2.600	0.723	1.638	0.631	0.000	0.000	0.000	0.000
2.700	0.730	1.711	0.697	0.000	0.000	0.000	0.000
2.800	0.737	1.784	0.805	0.000	0.000	0.000	0.000
2.900	0.744	1.858	0.942	0.000	0.000	0.000	0.000
3.000	0.751	1.933	1.102	0.000	0.000	0.000	0.000
3.100	0.758	2.009	1.281	0.000	0.000	0.000	0.000
3.200	0.765	2.085	1.477	0.000	0.000	0.000	0.000
3.300	0.773	2.162	1.690	0.000	0.000	0.000	0.000
3.400	0.780	2.240	1.918	0.000	0.000	0.000	0.000
3.500	0.787	2.318	2.132	0.000	0.000	0.000	0.000
3.600	0.794	2.397	2.280	0.000	0.000	0.000	0.000
3.700	0.801	2.477	2.417	0.000	0.000	0.000	0.000
3.800	0.808	2.558	2.545	0.000	0.000	0.000	0.000
3.900	0.815	2.639	2.665	0.000	0.000	0.000	0.000
4.000	0.823	2.721	2.779	0.000	0.000	0.000	0.000
4.100	0.830	2.804	2.888	0.000	0.000	0.000	0.000
4.200	0.837	2.887	2.992	0.000	0.000	0.000	0.000
4.300	0.844	2.971	3.093	0.000	0.000	0.000	0.000
4.400	0.851	3.056	3.189	0.000	0.000	0.000	0.000
4.500	0.858	3.142	3.283	0.000	0.000	0.000	0.000
4.600	0.866	3.228	3.373	0.000	0.000	0.000	0.000

DRAFT

4.700	0.873	3.315	3.461	0.000	0.000	0.000	0.000
4.800	0.880	3.403	3.547	0.000	0.000	0.000	0.000
4.900	0.887	3.491	3.630	0.000	0.000	0.000	0.000
5.000	0.894	3.580	3.711	0.000	0.000	0.000	0.000
5.100	0.901	3.670	4.096	0.000	0.000	0.000	0.000
5.200	0.909	3.761	4.732	0.000	0.000	0.000	0.000
5.300	0.916	3.852	5.531	0.000	0.000	0.000	0.000
5.400	0.923	3.944	6.462	0.000	0.000	0.000	0.000
5.500	0.930	4.037	7.506	0.000	0.000	0.000	0.000
5.600	0.937	4.130	8.652	0.000	0.000	0.000	0.000
5.700	0.945	4.225	9.890	0.000	0.000	0.000	0.000
5.800	0.952	4.319	11.21	0.000	0.000	0.000	0.000
5.900	0.959	4.415	12.62	0.000	0.000	0.000	0.000
6.000	0.966	4.511	14.10	0.000	0.000	0.000	0.000
6.100	0.974	4.608	15.65	0.000	0.000	0.000	0.000
6.200	0.981	4.706	17.26	0.000	0.000	0.000	0.000
6.300	0.988	4.805	18.95	0.000	0.000	0.000	0.000
6.400	0.995	4.904	20.69	0.000	0.000	0.000	0.000
6.500	1.002	5.004	22.50	0.000	0.000	0.000	0.000
6.600	1.010	5.105	24.36	0.000	0.000	0.000	0.000
6.700	1.017	5.206	26.28	0.000	0.000	0.000	0.000
6.800	1.024	5.308	28.26	0.000	0.000	0.000	0.000
6.900	1.031	5.411	30.29	0.000	0.000	0.000	0.000
7.000	1.039	5.514	32.37	0.000	0.000	0.000	0.000
7.100	1.046	5.619	34.50	0.000	0.000	0.000	0.000
7.200	1.053	5.724	36.68	0.000	0.000	0.000	0.000
7.300	1.060	5.829	38.91	0.000	0.000	0.000	0.000
7.400	1.068	5.936	41.19	0.000	0.000	0.000	0.000
7.500	1.075	6.043	43.51	0.000	0.000	0.000	0.000
7.600	1.082	6.151	45.95	0.000	0.000	0.000	0.000
7.700	1.090	6.259	48.75	0.000	0.000	0.000	0.000
7.800	1.097	6.368	52.53	0.000	0.000	0.000	0.000
7.900	1.104	6.478	56.96	0.000	0.000	0.000	0.000
8.000	1.111	6.589	61.89	0.000	0.000	0.000	0.000
8.100	1.119	6.701	999.0	0.000	0.000	0.000	0.000

DRAFT

HMB 3

Depth: 8.1 ft.
Element Flows To:
Outlet 1 Outlet 2
POC 3/4

SSD Table Hydraulic Table

Stage (ft)	Area (ac)	Volume (ac-ft)	Manual	NotUsed	NotUsed	NotUsed	NotUsed
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.010	0.100	0.001	0.001	0.000	0.000	0.000	0.000
0.100	0.104	0.010	0.018	0.000	0.000	0.000	0.000
0.200	0.108	0.021	0.046	0.000	0.000	0.000	0.000
0.300	0.112	0.032	0.062	0.000	0.000	0.000	0.000
0.400	0.116	0.044	0.075	0.000	0.000	0.000	0.000
0.500	0.120	0.056	0.086	0.000	0.000	0.000	0.000
0.600	0.124	0.068	0.096	0.000	0.000	0.000	0.000
0.700	0.128	0.081	0.105	0.000	0.000	0.000	0.000
0.800	0.132	0.094	0.113	0.000	0.000	0.000	0.000
0.900	0.135	0.107	0.121	0.000	0.000	0.000	0.000
1.000	0.139	0.121	0.128	0.000	0.000	0.000	0.000
1.100	0.143	0.135	0.135	0.000	0.000	0.000	0.000
1.200	0.147	0.150	0.141	0.000	0.000	0.000	0.000
1.300	0.151	0.165	0.148	0.000	0.000	0.000	0.000
1.400	0.155	0.180	0.153	0.000	0.000	0.000	0.000
1.500	0.159	0.196	0.159	0.000	0.000	0.000	0.000
1.600	0.162	0.212	0.165	0.000	0.000	0.000	0.000
1.700	0.166	0.228	0.170	0.000	0.000	0.000	0.000
1.800	0.170	0.245	0.175	0.000	0.000	0.000	0.000
1.900	0.174	0.262	0.180	0.000	0.000	0.000	0.000
2.000	0.178	0.280	0.185	0.000	0.000	0.000	0.000
2.100	0.182	0.298	0.190	0.000	0.000	0.000	0.000
2.200	0.185	0.316	0.195	0.000	0.000	0.000	0.000
2.300	0.189	0.335	0.199	0.000	0.000	0.000	0.000
2.400	0.193	0.354	0.204	0.000	0.000	0.000	0.000
2.500	0.197	0.373	0.208	0.000	0.000	0.000	0.000
2.600	0.201	0.393	0.212	0.000	0.000	0.000	0.000
2.700	0.204	0.413	0.216	0.000	0.000	0.000	0.000
2.800	0.208	0.434	0.220	0.000	0.000	0.000	0.000
2.900	0.212	0.455	0.224	0.000	0.000	0.000	0.000
3.000	0.216	0.476	0.228	0.000	0.000	0.000	0.000
3.100	0.220	0.498	0.232	0.000	0.000	0.000	0.000
3.200	0.223	0.520	0.236	0.000	0.000	0.000	0.000
3.300	0.227	0.542	0.240	0.000	0.000	0.000	0.000
3.400	0.231	0.565	0.244	0.000	0.000	0.000	0.000
3.500	0.235	0.588	0.247	0.000	0.000	0.000	0.000
3.600	0.238	0.612	0.251	0.000	0.000	0.000	0.000
3.700	0.242	0.636	0.254	0.000	0.000	0.000	0.000
3.800	0.246	0.660	0.258	0.000	0.000	0.000	0.000
3.900	0.250	0.685	0.261	0.000	0.000	0.000	0.000
4.000	0.253	0.710	0.335	0.000	0.000	0.000	0.000
4.100	0.257	0.735	0.467	0.000	0.000	0.000	0.000
4.200	0.261	0.761	0.636	0.000	0.000	0.000	0.000
4.300	0.265	0.787	0.792	0.000	0.000	0.000	0.000
4.400	0.268	0.814	0.896	0.000	0.000	0.000	0.000
4.500	0.272	0.841	0.985	0.000	0.000	0.000	0.000

DRAFT

4.600	0.276	0.868	1.066	0.000	0.000	0.000	0.000
4.700	0.280	0.896	1.139	0.000	0.000	0.000	0.000
4.800	0.283	0.924	1.207	0.000	0.000	0.000	0.000
4.900	0.287	0.952	1.270	0.000	0.000	0.000	0.000
5.000	0.291	0.981	1.330	0.000	0.000	0.000	0.000
5.100	0.294	1.010	1.387	0.000	0.000	0.000	0.000
5.200	0.298	1.040	1.442	0.000	0.000	0.000	0.000
5.300	0.302	1.070	1.494	0.000	0.000	0.000	0.000
5.400	0.306	1.100	1.544	0.000	0.000	0.000	0.000
5.500	0.309	1.131	1.592	0.000	0.000	0.000	0.000
5.600	0.313	1.162	1.797	0.000	0.000	0.000	0.000
5.700	0.317	1.193	2.131	0.000	0.000	0.000	0.000
5.800	0.320	1.225	2.549	0.000	0.000	0.000	0.000
5.900	0.324	1.257	3.035	0.000	0.000	0.000	0.000
6.000	0.328	1.290	3.579	0.000	0.000	0.000	0.000
6.100	0.331	1.323	4.175	0.000	0.000	0.000	0.000
6.200	0.335	1.356	4.819	0.000	0.000	0.000	0.000
6.300	0.339	1.390	5.507	0.000	0.000	0.000	0.000
6.400	0.342	1.424	6.235	0.000	0.000	0.000	0.000
6.500	0.346	1.458	7.003	0.000	0.000	0.000	0.000
6.600	0.350	1.493	7.639	0.000	0.000	0.000	0.000
6.700	0.353	1.528	8.123	0.000	0.000	0.000	0.000
6.800	0.357	1.564	8.576	0.000	0.000	0.000	0.000
6.900	0.361	1.600	9.002	0.000	0.000	0.000	0.000
7.000	0.364	1.636	9.407	0.000	0.000	0.000	0.000
7.100	0.368	1.673	9.793	0.000	0.000	0.000	0.000
7.200	0.372	1.710	10.16	0.000	0.000	0.000	0.000
7.300	0.375	1.747	10.52	0.000	0.000	0.000	0.000
7.400	0.379	1.785	10.86	0.000	0.000	0.000	0.000
7.500	0.382	1.823	11.19	0.000	0.000	0.000	0.000
7.600	0.386	1.862	11.51	0.000	0.000	0.000	0.000
7.700	0.390	1.901	11.83	0.000	0.000	0.000	0.000
7.800	0.393	1.940	12.13	0.000	0.000	0.000	0.000
7.900	0.397	1.980	12.42	0.000	0.000	0.000	0.000
8.000	0.401	2.020	12.71	0.000	0.000	0.000	0.000
8.100	0.404	2.060	999.0	0.000	0.000	0.000	0.000

DRAFT

POC 2

Bottom Length: 350.00 ft.
Bottom Width: 25.00 ft.
Manning's n: 0.04
Channel bottom slope 1: 0.0011 To 1
Channel Left side slope 0: 0.25 To 1
Channel right side slope 2: 0.25 To 1
Discharge Structure
Riser Height: 0 ft.
Riser Diameter: 0 in.
Element Flows To:
Outlet 1 Outlet 2
upstream POC 1

Channel Hydraulic Table

Stage(ft)	Area(ac)	Volume(ac-ft)	Discharge(cfs)	Infilt(cfs)
0.0000	0.200	0.000	0.000	0.000
0.3333	0.202	0.067	4.887	0.000
0.6667	0.203	0.134	15.33	0.000
1.0000	0.204	0.202	29.78	0.000
1.3333	0.206	0.271	47.57	0.000
1.6667	0.207	0.340	68.26	0.000
2.0000	0.208	0.409	91.54	0.000
2.3333	0.210	0.479	117.1	0.000
2.6667	0.211	0.549	144.9	0.000
3.0000	0.212	0.620	174.7	0.000
3.3333	0.214	0.691	206.3	0.000
3.6667	0.215	0.763	239.7	0.000
4.0000	0.216	0.835	274.8	0.000
4.3333	0.218	0.908	311.4	0.000
4.6667	0.219	0.981	349.5	0.000
5.0000	0.221	1.054	389.1	0.000
5.3333	0.222	1.128	430.0	0.000
5.6667	0.223	1.202	472.2	0.000
6.0000	0.225	1.277	515.7	0.000
6.3333	0.226	1.352	560.5	0.000
6.6667	0.227	1.428	606.4	0.000
7.0000	0.229	1.504	653.5	0.000
7.3333	0.230	1.581	701.8	0.000
7.6667	0.231	1.658	751.1	0.000
8.0000	0.233	1.735	801.5	0.000
8.3333	0.234	1.813	853.0	0.000
8.6667	0.235	1.891	905.5	0.000
9.0000	0.237	1.970	959.0	0.000
9.3333	0.238	2.049	1013.	0.000
9.6667	0.239	2.129	1068.	0.000
10.000	0.241	2.209	1125.	0.000
10.333	0.242	2.290	1182.	0.000
10.667	0.243	2.371	1241.	0.000
11.000	0.245	2.452	1300.	0.000
11.333	0.246	2.534	1360.	0.000
11.667	0.247	2.617	1421.	0.000
12.000	0.249	2.699	1483.	0.000
12.333	0.250	2.783	1546.	0.000
12.667	0.251	2.866	1609.	0.000
13.000	0.253	2.950	1674.	0.000

DRAFT

13.333	0.254	3.035	1739.	0.000
13.667	0.255	3.120	1806.	0.000
14.000	0.257	3.206	1873.	0.000
14.333	0.258	3.292	1941.	0.000
14.667	0.259	3.378	2009.	0.000
15.000	0.261	3.465	2079.	0.000
15.333	0.262	3.552	2150.	0.000
15.667	0.263	3.640	2221.	0.000
16.000	0.265	3.728	2293.	0.000
16.333	0.266	3.817	2366.	0.000
16.667	0.267	3.906	2439.	0.000
17.000	0.269	3.995	2514.	0.000
17.333	0.270	4.085	2589.	0.000
17.667	0.271	4.175	2665.	0.000
18.000	0.273	4.266	2742.	0.000
18.333	0.274	4.358	2820.	0.000
18.667	0.275	4.449	2899.	0.000
19.000	0.277	4.542	2978.	0.000
19.333	0.278	4.634	3058.	0.000
19.667	0.279	4.727	3139.	0.000
20.000	0.281	4.821	3221.	0.000
20.333	0.282	4.915	3303.	0.000
20.667	0.283	5.009	3387.	0.000
21.000	0.285	5.104	3471.	0.000
21.333	0.286	5.199	3556.	0.000
21.667	0.288	5.295	3641.	0.000
22.000	0.289	5.391	3728.	0.000
22.333	0.290	5.488	3815.	0.000
22.667	0.292	5.585	3903.	0.000
23.000	0.293	5.683	3992.	0.000
23.333	0.294	5.781	4081.	0.000
23.667	0.296	5.879	4172.	0.000
24.000	0.297	5.978	4263.	0.000
24.333	0.298	6.077	4355.	0.000
24.667	0.300	6.177	4448.	0.000
25.000	0.301	6.277	4541.	0.000
25.333	0.302	6.378	4636.	0.000
25.667	0.304	6.479	4731.	0.000
26.000	0.305	6.581	4827.	0.000
26.333	0.306	6.683	4923.	0.000
26.667	0.308	6.785	5021.	0.000
27.000	0.309	6.888	5119.	0.000
27.333	0.310	6.991	5218.	0.000
27.667	0.312	7.095	5318.	0.000
28.000	0.313	7.199	5418.	0.000
28.333	0.314	7.304	5520.	0.000
28.667	0.316	7.409	5622.	0.000
29.000	0.317	7.515	5725.	0.000
29.333	0.318	7.621	5829.	0.000
29.667	0.320	7.727	5934.	0.000
30.000	0.321	7.834	6039.	0.000
30.333	0.322	7.942	6145.	0.000

DRAFT

HMB 2

Depth: 8.1 ft.
Element Flows To:
Outlet 1 Outlet 2
POC 2

SSD Table Hydraulic Table

Stage (ft)	Area (ac)	Volume (ac-ft)	Manual	NotUsed	NotUsed	NotUsed	NotUsed
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.010	0.100	0.001	0.001	0.000	0.000	0.000	0.000
0.100	0.104	0.010	0.022	0.000	0.000	0.000	0.000
0.200	0.108	0.021	0.057	0.000	0.000	0.000	0.000
0.300	0.112	0.032	0.078	0.000	0.000	0.000	0.000
0.400	0.116	0.044	0.094	0.000	0.000	0.000	0.000
0.500	0.119	0.056	0.108	0.000	0.000	0.000	0.000
0.600	0.123	0.068	0.120	0.000	0.000	0.000	0.000
0.700	0.127	0.081	0.131	0.000	0.000	0.000	0.000
0.800	0.131	0.094	0.142	0.000	0.000	0.000	0.000
0.900	0.135	0.107	0.151	0.000	0.000	0.000	0.000
1.000	0.139	0.121	0.160	0.000	0.000	0.000	0.000
1.100	0.143	0.135	0.169	0.000	0.000	0.000	0.000
1.200	0.146	0.150	0.177	0.000	0.000	0.000	0.000
1.300	0.150	0.165	0.184	0.000	0.000	0.000	0.000
1.400	0.154	0.180	0.192	0.000	0.000	0.000	0.000
1.500	0.158	0.196	0.199	0.000	0.000	0.000	0.000
1.600	0.162	0.212	0.206	0.000	0.000	0.000	0.000
1.700	0.166	0.228	0.213	0.000	0.000	0.000	0.000
1.800	0.169	0.245	0.219	0.000	0.000	0.000	0.000
1.900	0.173	0.262	0.225	0.000	0.000	0.000	0.000
2.000	0.177	0.280	0.231	0.000	0.000	0.000	0.000
2.100	0.181	0.298	0.237	0.000	0.000	0.000	0.000
2.200	0.185	0.316	0.243	0.000	0.000	0.000	0.000
2.300	0.189	0.335	0.249	0.000	0.000	0.000	0.000
2.400	0.192	0.354	0.254	0.000	0.000	0.000	0.000
2.500	0.196	0.373	0.260	0.000	0.000	0.000	0.000
2.600	0.200	0.393	0.265	0.000	0.000	0.000	0.000
2.700	0.204	0.413	0.270	0.000	0.000	0.000	0.000
2.800	0.208	0.434	0.276	0.000	0.000	0.000	0.000
2.900	0.211	0.455	0.281	0.000	0.000	0.000	0.000
3.000	0.215	0.476	0.286	0.000	0.000	0.000	0.000
3.100	0.219	0.498	0.290	0.000	0.000	0.000	0.000
3.200	0.223	0.520	0.295	0.000	0.000	0.000	0.000
3.300	0.227	0.542	0.300	0.000	0.000	0.000	0.000
3.400	0.230	0.565	0.304	0.000	0.000	0.000	0.000
3.500	0.234	0.588	0.309	0.000	0.000	0.000	0.000
3.600	0.238	0.612	0.314	0.000	0.000	0.000	0.000
3.700	0.242	0.636	0.318	0.000	0.000	0.000	0.000
3.800	0.245	0.660	0.322	0.000	0.000	0.000	0.000
3.900	0.249	0.685	0.327	0.000	0.000	0.000	0.000
4.000	0.253	0.710	0.331	0.000	0.000	0.000	0.000
4.100	0.257	0.735	0.335	0.000	0.000	0.000	0.000
4.200	0.260	0.761	0.339	0.000	0.000	0.000	0.000
4.300	0.264	0.787	0.343	0.000	0.000	0.000	0.000
4.400	0.268	0.814	0.347	0.000	0.000	0.000	0.000
4.500	0.272	0.841	0.351	0.000	0.000	0.000	0.000

DRAFT

4.600	0.275	0.868	0.355	0.000	0.000	0.000	0.000
4.700	0.279	0.896	0.359	0.000	0.000	0.000	0.000
4.800	0.283	0.924	0.363	0.000	0.000	0.000	0.000
4.900	0.286	0.952	0.367	0.000	0.000	0.000	0.000
5.000	0.290	0.981	0.371	0.000	0.000	0.000	0.000
5.100	0.294	1.010	0.374	0.000	0.000	0.000	0.000
5.200	0.298	1.040	0.378	0.000	0.000	0.000	0.000
5.300	0.301	1.070	0.382	0.000	0.000	0.000	0.000
5.400	0.305	1.100	0.385	0.000	0.000	0.000	0.000
5.500	0.309	1.131	0.418	0.000	0.000	0.000	0.000
5.600	0.312	1.162	0.517	0.000	0.000	0.000	0.000
5.700	0.316	1.193	0.654	0.000	0.000	0.000	0.000
5.800	0.320	1.225	0.740	0.000	0.000	0.000	0.000
5.900	0.323	1.257	0.810	0.000	0.000	0.000	0.000
6.000	0.327	1.290	0.870	0.000	0.000	0.000	0.000
6.100	0.331	1.323	0.994	0.000	0.000	0.000	0.000
6.200	0.334	1.356	1.172	0.000	0.000	0.000	0.000
6.300	0.338	1.390	1.384	0.000	0.000	0.000	0.000
6.400	0.342	1.424	1.623	0.000	0.000	0.000	0.000
6.500	0.345	1.458	1.887	0.000	0.000	0.000	0.000
6.600	0.349	1.493	2.173	0.000	0.000	0.000	0.000
6.700	0.353	1.528	2.478	0.000	0.000	0.000	0.000
6.800	0.356	1.564	2.802	0.000	0.000	0.000	0.000
6.900	0.360	1.600	3.143	0.000	0.000	0.000	0.000
7.000	0.364	1.636	3.501	0.000	0.000	0.000	0.000
7.100	0.367	1.673	3.874	0.000	0.000	0.000	0.000
7.200	0.371	1.710	4.262	0.000	0.000	0.000	0.000
7.300	0.375	1.747	4.665	0.000	0.000	0.000	0.000
7.400	0.378	1.785	5.081	0.000	0.000	0.000	0.000
7.500	0.382	1.823	5.510	0.000	0.000	0.000	0.000
7.600	0.386	1.862	5.953	0.000	0.000	0.000	0.000
7.700	0.389	1.901	6.408	0.000	0.000	0.000	0.000
7.800	0.393	1.940	6.875	0.000	0.000	0.000	0.000
7.900	0.396	1.980	7.355	0.000	0.000	0.000	0.000
8.000	0.400	2.020	7.845	0.000	0.000	0.000	0.000
8.100	0.404	2.060	999.0	0.000	0.000	0.000	0.000

DRAFT

upstream POC 2

Bottom Length: 950.00 ft.
Bottom Width: 25.00 ft.
Manning's n: 0.04
Channel bottom slope 1: 0.001 To 1
Channel Left side slope 0: 0.25 To 1
Channel right side slope 2: 0.25 To 1
Discharge Structure
Riser Height: 0 ft.
Riser Diameter: 0 in.
Element Flows To:
Outlet 1 Outlet 2
POC 2

Channel Hydraulic Table

Stage(ft)	Area(ac)	Volume(ac-ft)	Discharge(cfs)	Infilt(cfs)
0.0000	0.545	0.000	0.000	0.000
0.3333	0.548	0.182	4.660	0.000
0.6667	0.552	0.365	14.61	0.000
1.0000	0.556	0.550	28.40	0.000
1.3333	0.559	0.736	45.36	0.000
1.6667	0.563	0.923	65.08	0.000
2.0000	0.567	1.112	87.28	0.000
2.3333	0.570	1.301	111.7	0.000
2.6667	0.574	1.492	138.2	0.000
3.0000	0.577	1.684	166.6	0.000
3.3333	0.581	1.878	196.7	0.000
3.6667	0.585	2.072	228.6	0.000
4.0000	0.588	2.268	262.0	0.000
4.3333	0.592	2.465	296.9	0.000
4.6667	0.596	2.663	333.2	0.000
5.0000	0.599	2.862	371.0	0.000
5.3333	0.603	3.063	410.0	0.000
5.6667	0.607	3.264	450.3	0.000
6.0000	0.610	3.467	491.7	0.000
6.3333	0.614	3.671	534.4	0.000
6.6667	0.617	3.877	578.2	0.000
7.0000	0.621	4.083	623.1	0.000
7.3333	0.625	4.291	669.1	0.000
7.6667	0.628	4.500	716.1	0.000
8.0000	0.632	4.710	764.2	0.000
8.3333	0.636	4.922	813.3	0.000
8.6667	0.639	5.134	863.3	0.000
9.0000	0.643	5.348	914.3	0.000
9.3333	0.647	5.563	966.3	0.000
9.6667	0.650	5.780	1019.	0.000
10.000	0.654	5.997	1073.	0.000
10.333	0.657	6.216	1127.	0.000
10.667	0.661	6.436	1183.	0.000
11.000	0.665	6.657	1239.	0.000
11.333	0.668	6.879	1297.	0.000
11.667	0.672	7.103	1355.	0.000
12.000	0.676	7.327	1414.	0.000
12.333	0.679	7.553	1474.	0.000
12.667	0.683	7.781	1534.	0.000
13.000	0.687	8.009	1596.	0.000

DRAFT

13.333	0.690	8.239	1658.	0.000
13.667	0.694	8.469	1722.	0.000
14.000	0.697	8.701	1786.	0.000
14.333	0.701	8.935	1850.	0.000
14.667	0.705	9.169	1916.	0.000
15.000	0.708	9.405	1982.	0.000
15.333	0.712	9.642	2049.	0.000
15.667	0.716	9.880	2117.	0.000
16.000	0.719	10.12	2186.	0.000
16.333	0.723	10.36	2256.	0.000
16.667	0.727	10.60	2326.	0.000
17.000	0.730	10.84	2397.	0.000
17.333	0.734	11.08	2469.	0.000
17.667	0.737	11.33	2541.	0.000
18.000	0.741	11.58	2615.	0.000
18.333	0.745	11.82	2689.	0.000
18.667	0.748	12.07	2764.	0.000
19.000	0.752	12.32	2839.	0.000
19.333	0.756	12.57	2916.	0.000
19.667	0.759	12.83	2993.	0.000
20.000	0.763	13.08	3071.	0.000
20.333	0.767	13.34	3150.	0.000
20.667	0.770	13.59	3229.	0.000
21.000	0.774	13.85	3309.	0.000
21.333	0.777	14.11	3390.	0.000
21.667	0.781	14.37	3472.	0.000
22.000	0.785	14.63	3554.	0.000
22.333	0.788	14.89	3637.	0.000
22.667	0.792	15.16	3721.	0.000
23.000	0.796	15.42	3806.	0.000
23.333	0.799	15.69	3891.	0.000
23.667	0.803	15.95	3978.	0.000
24.000	0.807	16.22	4065.	0.000
24.333	0.810	16.49	4152.	0.000
24.667	0.814	16.76	4241.	0.000
25.000	0.817	17.03	4330.	0.000
25.333	0.821	17.31	4420.	0.000
25.667	0.825	17.58	4510.	0.000
26.000	0.828	17.86	4602.	0.000
26.333	0.832	18.13	4694.	0.000
26.667	0.836	18.41	4787.	0.000
27.000	0.839	18.69	4881.	0.000
27.333	0.843	18.97	4975.	0.000
27.667	0.847	19.25	5070.	0.000
28.000	0.850	19.54	5166.	0.000
28.333	0.854	19.82	5263.	0.000
28.667	0.857	20.11	5360.	0.000
29.000	0.861	20.39	5459.	0.000
29.333	0.865	20.68	5558.	0.000
29.667	0.868	20.97	5657.	0.000
30.000	0.872	21.26	5758.	0.000
30.333	0.876	21.55	5859.	0.000

DRAFT

Trib 9

Bottom Length: 1880.00 ft.
Bottom Width: 4.00 ft.
Manning's n: 0.035
Channel bottom slope 1: 0.0298 To 1
Channel Left side slope 0: 0.5 To 1
Channel right side slope 2: 0.5 To 1
Discharge Structure
Riser Height: 0 ft.
Riser Diameter: 0 in.
Element Flows To:
Outlet 1 Outlet 2
POC 2

Channel Hydraulic Table

Stage(ft)	Area(ac)	Volume(ac-ft)	Discharge(cfs)	Infilt(cfs)
0.0000	0.172	0.000	0.000	0.000
0.0889	0.176	0.015	0.513	0.000
0.1778	0.180	0.031	1.609	0.000
0.2667	0.184	0.047	3.126	0.000
0.3556	0.188	0.064	4.997	0.000
0.4444	0.191	0.081	7.181	0.000
0.5333	0.195	0.098	9.648	0.000
0.6222	0.199	0.115	12.37	0.000
0.7111	0.203	0.133	15.35	0.000
0.8000	0.207	0.151	18.56	0.000
0.8889	0.211	0.170	22.00	0.000
0.9778	0.214	0.189	25.65	0.000
1.0667	0.218	0.208	29.52	0.000
1.1556	0.222	0.228	33.59	0.000
1.2444	0.226	0.248	37.87	0.000
1.3333	0.230	0.268	42.34	0.000
1.4222	0.234	0.289	47.02	0.000
1.5111	0.237	0.310	51.88	0.000
1.6000	0.241	0.331	56.94	0.000
1.6889	0.245	0.353	62.19	0.000
1.7778	0.249	0.375	67.64	0.000
1.8667	0.253	0.397	73.27	0.000
1.9556	0.257	0.420	79.09	0.000
2.0444	0.260	0.443	85.10	0.000
2.1333	0.264	0.466	91.31	0.000
2.2222	0.268	0.490	97.70	0.000
2.3111	0.272	0.514	104.2	0.000
2.4000	0.276	0.538	111.0	0.000
2.4889	0.280	0.563	118.0	0.000
2.5778	0.283	0.588	125.1	0.000
2.6667	0.287	0.613	132.5	0.000
2.7556	0.291	0.639	140.0	0.000
2.8444	0.295	0.665	147.7	0.000
2.9333	0.299	0.692	155.7	0.000
3.0222	0.303	0.718	163.8	0.000
3.1111	0.306	0.746	172.1	0.000
3.2000	0.310	0.773	180.6	0.000
3.2889	0.314	0.801	189.3	0.000
3.3778	0.318	0.829	198.2	0.000
3.4667	0.322	0.857	207.3	0.000

DRAFT

3.5556	0.326	0.886	216.6	0.000
3.6444	0.330	0.915	226.1	0.000
3.7333	0.333	0.945	235.8	0.000
3.8222	0.337	0.975	245.7	0.000
3.9111	0.341	1.005	255.8	0.000
4.0000	0.345	1.035	266.1	0.000
4.0889	0.349	1.066	276.7	0.000
4.1778	0.353	1.098	287.4	0.000
4.2667	0.356	1.129	298.3	0.000
4.3556	0.360	1.161	309.5	0.000
4.4444	0.364	1.193	320.8	0.000
4.5333	0.368	1.226	332.4	0.000
4.6222	0.372	1.259	344.2	0.000
4.7111	0.376	1.292	356.2	0.000
4.8000	0.379	1.326	368.4	0.000
4.8889	0.383	1.359	380.9	0.000
4.9778	0.387	1.394	393.5	0.000
5.0667	0.391	1.428	406.4	0.000
5.1556	0.395	1.463	419.5	0.000
5.2444	0.399	1.499	432.8	0.000
5.3333	0.402	1.534	446.3	0.000
5.4222	0.406	1.570	460.1	0.000
5.5111	0.410	1.607	474.0	0.000
5.6000	0.414	1.643	488.2	0.000
5.6889	0.418	1.680	502.7	0.000
5.7778	0.422	1.718	517.3	0.000
5.8667	0.425	1.755	532.2	0.000
5.9556	0.429	1.793	547.4	0.000
6.0444	0.433	1.832	562.7	0.000
6.1333	0.437	1.870	578.3	0.000
6.2222	0.441	1.909	594.1	0.000
6.3111	0.445	1.949	610.2	0.000
6.4000	0.448	1.989	626.5	0.000
6.4889	0.452	2.029	643.0	0.000
6.5778	0.456	2.069	659.8	0.000
6.6667	0.460	2.110	676.8	0.000
6.7556	0.464	2.151	694.1	0.000
6.8444	0.468	2.192	711.6	0.000
6.9333	0.472	2.234	729.3	0.000
7.0222	0.475	2.276	747.3	0.000
7.1111	0.479	2.319	765.5	0.000
7.2000	0.483	2.362	784.0	0.000
7.2889	0.487	2.405	802.7	0.000
7.3778	0.491	2.448	821.7	0.000
7.4667	0.495	2.492	840.9	0.000
7.5556	0.498	2.536	860.4	0.000
7.6444	0.502	2.581	880.2	0.000
7.7333	0.506	2.626	900.2	0.000
7.8222	0.510	2.671	920.4	0.000
7.9111	0.514	2.716	940.9	0.000
8.0000	0.518	2.762	961.7	0.000
8.0889	0.521	2.808	982.7	0.000

DRAFT

upstream POC 1

Bottom Length: 988.00 ft.
Bottom Width: 25.00 ft.
Manning's n: 0.04
Channel bottom slope 1: 0.0071 To 1
Channel Left side slope 0: 0.25 To 1
Channel right side slope 2: 0.25 To 1
Discharge Structure
Riser Height: 0 ft.
Riser Diameter: 0 in.
Element Flows To:
Outlet 1 Outlet 2
POC 1

Channel Hydraulic Table

Stage(ft)	Area(ac)	Volume(ac-ft)	Discharge(cfs)	Infilt(cfs)
0.0000	0.567	0.000	0.000	0.000
0.3333	0.570	0.189	12.41	0.000
0.6667	0.574	0.380	38.95	0.000
1.0000	0.578	0.572	75.67	0.000
1.3333	0.582	0.766	120.8	0.000
1.6667	0.585	0.960	173.4	0.000
2.0000	0.589	1.156	232.5	0.000
2.3333	0.593	1.354	297.6	0.000
2.6667	0.597	1.552	368.2	0.000
3.0000	0.601	1.752	443.9	0.000
3.3333	0.604	1.953	524.3	0.000
3.6667	0.608	2.155	609.1	0.000
4.0000	0.612	2.358	698.2	0.000
4.3333	0.616	2.563	791.2	0.000
4.6667	0.620	2.769	888.0	0.000
5.0000	0.623	2.977	988.5	0.000
5.3333	0.627	3.185	1092.	0.000
5.6667	0.631	3.395	1199.	0.000
6.0000	0.635	3.606	1310.	0.000
6.3333	0.638	3.818	1424.	0.000
6.6667	0.642	4.032	1540.	0.000
7.0000	0.646	4.247	1660.	0.000
7.3333	0.650	4.463	1783.	0.000
7.6667	0.654	4.680	1908.	0.000
8.0000	0.657	4.899	2036.	0.000
8.3333	0.661	5.119	2167.	0.000
8.6667	0.665	5.340	2300.	0.000
9.0000	0.669	5.563	2436.	0.000
9.3333	0.673	5.786	2574.	0.000
9.6667	0.676	6.011	2715.	0.000
10.000	0.680	6.237	2859.	0.000
10.333	0.684	6.465	3004.	0.000
10.667	0.688	6.694	3153.	0.000
11.000	0.691	6.924	3303.	0.000
11.333	0.695	7.155	3456.	0.000
11.667	0.699	7.387	3611.	0.000
12.000	0.703	7.621	3768.	0.000
12.333	0.707	7.856	3928.	0.000
12.667	0.710	8.093	4090.	0.000
13.000	0.714	8.330	4254.	0.000

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13.333	0.718	8.569	4420.	0.000
13.667	0.722	8.809	4588.	0.000
14.000	0.725	9.050	4759.	0.000
14.333	0.729	9.293	4931.	0.000
14.667	0.733	9.537	5106.	0.000
15.000	0.737	9.782	5283.	0.000
15.333	0.741	10.02	5462.	0.000
15.667	0.744	10.27	5643.	0.000
16.000	0.748	10.52	5826.	0.000
16.333	0.752	10.77	6011.	0.000
16.667	0.756	11.02	6199.	0.000
17.000	0.760	11.28	6388.	0.000
17.333	0.763	11.53	6579.	0.000
17.667	0.767	11.78	6773.	0.000
18.000	0.771	12.04	6968.	0.000
18.333	0.775	12.30	7166.	0.000
18.667	0.778	12.56	7365.	0.000
19.000	0.782	12.82	7567.	0.000
19.333	0.786	13.08	7770.	0.000
19.667	0.790	13.34	7976.	0.000
20.000	0.794	13.61	8184.	0.000
20.333	0.797	13.87	8393.	0.000
20.667	0.801	14.14	8605.	0.000
21.000	0.805	14.41	8818.	0.000
21.333	0.809	14.68	9034.	0.000
21.667	0.813	14.95	9252.	0.000
22.000	0.816	15.22	9471.	0.000
22.333	0.820	15.49	9693.	0.000
22.667	0.824	15.76	9917.	0.000
23.000	0.828	16.04	10142	0.000
23.333	0.831	16.32	10370	0.000
23.667	0.835	16.59	10600	0.000
24.000	0.839	16.87	10831	0.000
24.333	0.843	17.15	11065	0.000
24.667	0.847	17.44	11300	0.000
25.000	0.850	17.72	11538	0.000
25.333	0.854	18.00	11778	0.000
25.667	0.858	18.29	12019	0.000
26.000	0.862	18.58	12263	0.000
26.333	0.866	18.86	12509	0.000
26.667	0.869	19.15	12756	0.000
27.000	0.873	19.44	13006	0.000
27.333	0.877	19.73	13258	0.000
27.667	0.881	20.03	13511	0.000
28.000	0.884	20.32	13767	0.000
28.333	0.888	20.62	14025	0.000
28.667	0.892	20.91	14284	0.000
29.000	0.896	21.21	14546	0.000
29.333	0.900	21.51	14810	0.000
29.667	0.903	21.81	15075	0.000
30.000	0.907	22.11	15343	0.000
30.333	0.911	22.42	15613	0.000

DRAFT

POC 1

Bottom Length: 988.00 ft.
Bottom Width: 25.00 ft.
Manning's n: 0.04
Channel bottom slope 1: 0.0071 To 1
Channel Left side slope 0: 0.25 To 1
Channel right side slope 2: 0.25 To 1
Discharge Structure
Riser Height: 0 ft.
Riser Diameter: 0 in.
Element Flows To:
Outlet 1 Outlet 2

Channel Hydraulic Table

Stage(ft)	Area(ac)	Volume(ac-ft)	Discharge(cfs)	Infilt(cfs)
0.0000	0.567	0.000	0.000	0.000
0.3333	0.570	0.189	12.41	0.000
0.6667	0.574	0.380	38.95	0.000
1.0000	0.578	0.572	75.67	0.000
1.3333	0.582	0.766	120.8	0.000
1.6667	0.585	0.960	173.4	0.000
2.0000	0.589	1.156	232.5	0.000
2.3333	0.593	1.354	297.6	0.000
2.6667	0.597	1.552	368.2	0.000
3.0000	0.601	1.752	443.9	0.000
3.3333	0.604	1.953	524.3	0.000
3.6667	0.608	2.155	609.1	0.000
4.0000	0.612	2.358	698.2	0.000
4.3333	0.616	2.563	791.2	0.000
4.6667	0.620	2.769	888.0	0.000
5.0000	0.623	2.977	988.5	0.000
5.3333	0.627	3.185	1092.	0.000
5.6667	0.631	3.395	1199.	0.000
6.0000	0.635	3.606	1310.	0.000
6.3333	0.638	3.818	1424.	0.000
6.6667	0.642	4.032	1540.	0.000
7.0000	0.646	4.247	1660.	0.000
7.3333	0.650	4.463	1783.	0.000
7.6667	0.654	4.680	1908.	0.000
8.0000	0.657	4.899	2036.	0.000
8.3333	0.661	5.119	2167.	0.000
8.6667	0.665	5.340	2300.	0.000
9.0000	0.669	5.563	2436.	0.000
9.3333	0.673	5.786	2574.	0.000
9.6667	0.676	6.011	2715.	0.000
10.000	0.680	6.237	2859.	0.000
10.333	0.684	6.465	3004.	0.000
10.667	0.688	6.694	3153.	0.000
11.000	0.691	6.924	3303.	0.000
11.333	0.695	7.155	3456.	0.000
11.667	0.699	7.387	3611.	0.000
12.000	0.703	7.621	3768.	0.000
12.333	0.707	7.856	3928.	0.000
12.667	0.710	8.093	4090.	0.000
13.000	0.714	8.330	4254.	0.000

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13.333	0.718	8.569	4420.	0.000
13.667	0.722	8.809	4588.	0.000
14.000	0.725	9.050	4759.	0.000
14.333	0.729	9.293	4931.	0.000
14.667	0.733	9.537	5106.	0.000
15.000	0.737	9.782	5283.	0.000
15.333	0.741	10.02	5462.	0.000
15.667	0.744	10.27	5643.	0.000
16.000	0.748	10.52	5826.	0.000
16.333	0.752	10.77	6011.	0.000
16.667	0.756	11.02	6199.	0.000
17.000	0.760	11.28	6388.	0.000
17.333	0.763	11.53	6579.	0.000
17.667	0.767	11.78	6773.	0.000
18.000	0.771	12.04	6968.	0.000
18.333	0.775	12.30	7166.	0.000
18.667	0.778	12.56	7365.	0.000
19.000	0.782	12.82	7567.	0.000
19.333	0.786	13.08	7770.	0.000
19.667	0.790	13.34	7976.	0.000
20.000	0.794	13.61	8184.	0.000
20.333	0.797	13.87	8393.	0.000
20.667	0.801	14.14	8605.	0.000
21.000	0.805	14.41	8818.	0.000
21.333	0.809	14.68	9034.	0.000
21.667	0.813	14.95	9252.	0.000
22.000	0.816	15.22	9471.	0.000
22.333	0.820	15.49	9693.	0.000
22.667	0.824	15.76	9917.	0.000
23.000	0.828	16.04	10142	0.000
23.333	0.831	16.32	10370	0.000
23.667	0.835	16.59	10600	0.000
24.000	0.839	16.87	10831	0.000
24.333	0.843	17.15	11065	0.000
24.667	0.847	17.44	11300	0.000
25.000	0.850	17.72	11538	0.000
25.333	0.854	18.00	11778	0.000
25.667	0.858	18.29	12019	0.000
26.000	0.862	18.58	12263	0.000
26.333	0.866	18.86	12509	0.000
26.667	0.869	19.15	12756	0.000
27.000	0.873	19.44	13006	0.000
27.333	0.877	19.73	13258	0.000
27.667	0.881	20.03	13511	0.000
28.000	0.884	20.32	13767	0.000
28.333	0.888	20.62	14025	0.000
28.667	0.892	20.91	14284	0.000
29.000	0.896	21.21	14546	0.000
29.333	0.900	21.51	14810	0.000
29.667	0.903	21.81	15075	0.000
30.000	0.907	22.11	15343	0.000
30.333	0.911	22.42	15613	0.000

DRAFT

Urban 4

Bottom Length: 481.00 ft.
Bottom Width: 4.00 ft.
Manning's n: 0.035
Channel bottom slope 1: 0.0665 To 1
Channel Left side slope 0: 0.5 To 1
Channel right side slope 2: 0.5 To 1
Discharge Structure
Riser Height: 0 ft.
Riser Diameter: 0 in.
Element Flows To:
Outlet 1 Outlet 2
upstream POC 1

Channel Hydraulic Table

Stage(ft)	Area(ac)	Volume(ac-ft)	Discharge(cfs)	Infilt(cfs)
0.0000	0.044	0.000	0.000	0.000
0.0889	0.045	0.004	0.766	0.000
0.1778	0.046	0.008	2.403	0.000
0.2667	0.047	0.012	4.670	0.000
0.3556	0.048	0.016	7.466	0.000
0.4444	0.049	0.020	10.72	0.000
0.5333	0.050	0.025	14.41	0.000
0.6222	0.051	0.029	18.49	0.000
0.7111	0.052	0.034	22.93	0.000
0.8000	0.053	0.038	27.73	0.000
0.8889	0.054	0.043	32.87	0.000
0.9778	0.055	0.048	38.33	0.000
1.0667	0.056	0.053	44.10	0.000
1.1556	0.056	0.058	50.19	0.000
1.2444	0.057	0.063	56.57	0.000
1.3333	0.058	0.068	63.26	0.000
1.4222	0.059	0.074	70.24	0.000
1.5111	0.060	0.079	77.51	0.000
1.6000	0.061	0.084	85.06	0.000
1.6889	0.062	0.090	92.91	0.000
1.7778	0.063	0.096	101.0	0.000
1.8667	0.064	0.101	109.4	0.000
1.9556	0.065	0.107	118.1	0.000
2.0444	0.066	0.113	127.1	0.000
2.1333	0.067	0.119	136.4	0.000
2.2222	0.068	0.125	145.9	0.000
2.3111	0.069	0.131	155.7	0.000
2.4000	0.070	0.137	165.8	0.000
2.4889	0.071	0.144	176.2	0.000
2.5778	0.072	0.150	186.9	0.000
2.6667	0.073	0.157	197.9	0.000
2.7556	0.074	0.163	209.2	0.000
2.8444	0.075	0.170	220.7	0.000
2.9333	0.076	0.177	232.5	0.000
3.0222	0.077	0.184	244.7	0.000
3.1111	0.078	0.190	257.1	0.000
3.2000	0.079	0.198	269.8	0.000
3.2889	0.080	0.205	282.8	0.000
3.3778	0.081	0.212	296.1	0.000
3.4667	0.082	0.219	309.7	0.000

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3.5556	0.083	0.227	323.6	0.000
3.6444	0.084	0.234	337.8	0.000
3.7333	0.085	0.242	352.3	0.000
3.8222	0.086	0.249	367.1	0.000
3.9111	0.087	0.257	382.2	0.000
4.0000	0.088	0.265	397.6	0.000
4.0889	0.089	0.273	413.3	0.000
4.1778	0.090	0.281	429.4	0.000
4.2667	0.091	0.289	445.7	0.000
4.3556	0.092	0.297	462.3	0.000
4.4444	0.093	0.305	479.3	0.000
4.5333	0.094	0.313	496.6	0.000
4.6222	0.095	0.322	514.2	0.000
4.7111	0.096	0.330	532.1	0.000
4.8000	0.097	0.339	550.4	0.000
4.8889	0.098	0.348	569.0	0.000
4.9778	0.099	0.356	587.9	0.000
5.0667	0.100	0.365	607.1	0.000
5.1556	0.101	0.374	626.6	0.000
5.2444	0.102	0.383	646.5	0.000
5.3333	0.103	0.392	666.7	0.000
5.4222	0.104	0.402	687.3	0.000
5.5111	0.105	0.411	708.2	0.000
5.6000	0.106	0.420	729.4	0.000
5.6889	0.107	0.430	750.9	0.000
5.7778	0.108	0.439	772.9	0.000
5.8667	0.109	0.449	795.1	0.000
5.9556	0.110	0.459	817.7	0.000
6.0444	0.111	0.469	840.6	0.000
6.1333	0.112	0.479	863.9	0.000
6.2222	0.113	0.489	887.6	0.000
6.3111	0.114	0.499	911.5	0.000
6.4000	0.115	0.509	935.9	0.000
6.4889	0.116	0.519	960.6	0.000
6.5778	0.117	0.530	985.6	0.000
6.6667	0.118	0.540	1011.	0.000
6.7556	0.119	0.550	1036.	0.000
6.8444	0.120	0.561	1063.	0.000
6.9333	0.121	0.572	1089.	0.000
7.0222	0.121	0.583	1116.	0.000
7.1111	0.122	0.594	1143.	0.000
7.2000	0.123	0.604	1171.	0.000
7.2889	0.124	0.616	1199.	0.000
7.3778	0.125	0.627	1227.	0.000
7.4667	0.126	0.638	1256.	0.000
7.5556	0.127	0.649	1285.	0.000
7.6444	0.128	0.661	1314.	0.000
7.7333	0.129	0.672	1344.	0.000
7.8222	0.130	0.684	1375.	0.000
7.9111	0.131	0.695	1405.	0.000
8.0000	0.132	0.707	1436.	0.000
8.0889	0.133	0.719	1468.	0.000

DRAFT

HMB 9

Depth: 8 ft.
Element Flows To:
Outlet 1 Outlet 2
Trib 9

SSD Table Hydraulic Table

Stage (ft)	Area (ac)	Volume (ac-ft)	Manual	NotUsed	NotUsed	NotUsed	NotUsed
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.010	0.100	0.001	0.000	0.000	0.000	0.000	0.000
0.100	0.104	0.010	0.013	0.000	0.000	0.000	0.000
0.200	0.108	0.021	0.028	0.000	0.000	0.000	0.000
0.300	0.112	0.032	0.037	0.000	0.000	0.000	0.000
0.400	0.116	0.044	0.044	0.000	0.000	0.000	0.000
0.500	0.120	0.056	0.050	0.000	0.000	0.000	0.000
0.600	0.124	0.068	0.055	0.000	0.000	0.000	0.000
0.700	0.128	0.081	0.060	0.000	0.000	0.000	0.000
0.800	0.132	0.094	0.065	0.000	0.000	0.000	0.000
0.900	0.135	0.107	0.069	0.000	0.000	0.000	0.000
1.000	0.139	0.121	0.073	0.000	0.000	0.000	0.000
1.100	0.143	0.135	0.077	0.000	0.000	0.000	0.000
1.200	0.147	0.150	0.080	0.000	0.000	0.000	0.000
1.300	0.151	0.165	0.084	0.000	0.000	0.000	0.000
1.400	0.155	0.180	0.087	0.000	0.000	0.000	0.000
1.500	0.159	0.196	0.090	0.000	0.000	0.000	0.000
1.600	0.162	0.212	0.093	0.000	0.000	0.000	0.000
1.700	0.166	0.228	0.096	0.000	0.000	0.000	0.000
1.800	0.170	0.245	0.099	0.000	0.000	0.000	0.000
1.900	0.174	0.262	0.102	0.000	0.000	0.000	0.000
2.000	0.178	0.280	0.131	0.000	0.000	0.000	0.000
2.100	0.182	0.298	0.182	0.000	0.000	0.000	0.000
2.200	0.185	0.316	0.247	0.000	0.000	0.000	0.000
2.300	0.189	0.335	0.306	0.000	0.000	0.000	0.000
2.400	0.193	0.354	0.347	0.000	0.000	0.000	0.000
2.500	0.197	0.373	0.382	0.000	0.000	0.000	0.000
2.600	0.201	0.393	0.413	0.000	0.000	0.000	0.000
2.700	0.204	0.413	0.442	0.000	0.000	0.000	0.000
2.800	0.208	0.434	0.468	0.000	0.000	0.000	0.000
2.900	0.212	0.455	0.493	0.000	0.000	0.000	0.000
3.000	0.216	0.476	0.517	0.000	0.000	0.000	0.000
3.100	0.220	0.498	0.539	0.000	0.000	0.000	0.000
3.200	0.223	0.520	0.560	0.000	0.000	0.000	0.000
3.300	0.227	0.542	0.581	0.000	0.000	0.000	0.000
3.400	0.231	0.565	0.601	0.000	0.000	0.000	0.000
3.500	0.235	0.588	0.620	0.000	0.000	0.000	0.000
3.600	0.238	0.612	0.726	0.000	0.000	0.000	0.000
3.700	0.242	0.636	0.904	0.000	0.000	0.000	0.000
3.800	0.246	0.660	1.130	0.000	0.000	0.000	0.000
3.900	0.250	0.685	1.393	0.000	0.000	0.000	0.000
4.000	0.253	0.710	1.688	0.000	0.000	0.000	0.000
4.100	0.257	0.735	2.013	0.000	0.000	0.000	0.000
4.200	0.261	0.761	2.364	0.000	0.000	0.000	0.000
4.300	0.265	0.787	2.740	0.000	0.000	0.000	0.000
4.400	0.268	0.814	3.139	0.000	0.000	0.000	0.000
4.500	0.272	0.841	3.559	0.000	0.000	0.000	0.000

DRAFT

4.600	0.276	0.868	4.000	0.000	0.000	0.000	0.000
4.700	0.280	0.896	4.461	0.000	0.000	0.000	0.000
4.800	0.283	0.924	4.940	0.000	0.000	0.000	0.000
4.900	0.287	0.952	5.438	0.000	0.000	0.000	0.000
5.000	0.291	0.981	5.952	0.000	0.000	0.000	0.000
5.100	0.294	1.010	6.484	0.000	0.000	0.000	0.000
5.200	0.298	1.040	7.032	0.000	0.000	0.000	0.000
5.300	0.302	1.070	7.595	0.000	0.000	0.000	0.000
5.400	0.306	1.100	8.174	0.000	0.000	0.000	0.000
5.500	0.309	1.131	8.768	0.000	0.000	0.000	0.000
5.600	0.313	1.162	9.376	0.000	0.000	0.000	0.000
5.700	0.317	1.193	9.999	0.000	0.000	0.000	0.000
5.800	0.320	1.225	11.89	0.000	0.000	0.000	0.000
5.900	0.324	1.257	14.61	0.000	0.000	0.000	0.000
6.000	0.328	1.290	17.99	0.000	0.000	0.000	0.000
6.100	0.331	1.323	21.91	0.000	0.000	0.000	0.000
6.200	0.335	1.356	26.30	0.000	0.000	0.000	0.000
6.300	0.339	1.390	31.10	0.000	0.000	0.000	0.000
6.400	0.342	1.424	36.27	0.000	0.000	0.000	0.000
6.500	0.346	1.458	41.80	0.000	0.000	0.000	0.000
6.600	0.350	1.493	47.65	0.000	0.000	0.000	0.000
6.700	0.353	1.528	53.81	0.000	0.000	0.000	0.000
6.800	0.357	1.564	60.26	0.000	0.000	0.000	0.000
6.900	0.361	1.600	67.00	0.000	0.000	0.000	0.000
7.000	0.364	1.636	74.00	0.000	0.000	0.000	0.000
7.100	0.368	1.673	81.25	0.000	0.000	0.000	0.000
7.200	0.372	1.710	88.76	0.000	0.000	0.000	0.000
7.300	0.375	1.747	96.50	0.000	0.000	0.000	0.000
7.400	0.379	1.785	104.5	0.000	0.000	0.000	0.000
7.500	0.382	1.823	112.7	0.000	0.000	0.000	0.000
7.600	0.386	1.862	121.1	0.000	0.000	0.000	0.000
7.700	0.390	1.901	129.7	0.000	0.000	0.000	0.000
7.800	0.393	1.940	138.6	0.000	0.000	0.000	0.000
7.900	0.397	1.980	147.6	0.000	0.000	0.000	0.000
8.000	0.401	2.020	999.0	0.000	0.000	0.000	0.000

DRAFT

Urban 105

Depth: 10 ft.
Element Flows To:
Outlet 1 Outlet 2
Urban 1

SSD Table Hydraulic Table

Stage (ft)	Area (ac)	Volume (ac-ft)	Manual	NotUsed	NotUsed	NotUsed	NotUsed
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.500	1.600	0.400	23.00	0.000	0.000	0.000	0.000
1.500	1.700	1.090	54.00	0.000	0.000	0.000	0.000
2.500	1.800	2.320	96.00	0.000	0.000	0.000	0.000
3.500	2.000	4.540	144.0	0.000	0.000	0.000	0.000
5.500	2.200	7.830	195.0	0.000	0.000	0.000	0.000
7.500	3.600	12.26	258.0	0.000	0.000	0.000	0.000
9.500	4.200	18.19	324.0	0.000	0.000	0.000	0.000
10.000	4.500	20.00	999.0	0.000	0.000	0.000	0.000

DRAFT

Urban 103

Depth: 12 ft.
Element Flows To:
Outlet 1 Outlet 2
Urban 2

SSD Table Hydraulic Table

Stage (ft)	Area (ac)	Volume (ac-ft)	Manual	NotUsed	NotUsed	NotUsed	NotUsed
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.500	1.600	2.140	251.0	0.000	0.000	0.000	0.000
1.500	1.700	7.080	520.0	0.000	0.000	0.000	0.000
2.500	1.800	10.91	640.0	0.000	0.000	0.000	0.000
3.500	2.000	15.21	768.0	0.000	0.000	0.000	0.000
5.500	2.200	19.84	880.0	0.000	0.000	0.000	0.000
7.500	3.600	24.92	960.0	0.000	0.000	0.000	0.000
9.500	4.200	30.37	1040	0.000	0.000	0.000	0.000
11.50	5.900	61.40	1392	0.000	0.000	0.000	0.000

DRAFT

Urban 102

Depth: 19.2 ft.
Element Flows To:
Outlet 1 Outlet 2
Urban 3

SSD Table Hydraulic Table

Stage (ft)	Area (ac)	Volume (ac-ft)	Manual	NotUsed	NotUsed	NotUsed	NotUsed
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.010	1.400	0.014	0.009	0.000	0.000	0.000	0.000
0.200	1.344	0.105	0.844	0.000	0.000	0.000	0.000
0.400	1.386	0.272	2.387	0.000	0.000	0.000	0.000
0.600	1.429	0.448	4.385	0.000	0.000	0.000	0.000
0.800	1.473	0.633	6.751	0.000	0.000	0.000	0.000
1.000	1.518	0.828	9.435	0.000	0.000	0.000	0.000
1.200	1.564	1.034	12.40	0.000	0.000	0.000	0.000
1.400	1.610	1.248	15.63	0.000	0.000	0.000	0.000
1.600	1.658	1.473	19.10	0.000	0.000	0.000	0.000
1.800	1.706	1.707	22.79	0.000	0.000	0.000	0.000
2.000	1.756	1.951	26.69	0.000	0.000	0.000	0.000
2.200	1.806	2.204	30.79	0.000	0.000	0.000	0.000
2.400	1.858	2.468	35.08	0.000	0.000	0.000	0.000
2.600	1.910	2.741	39.63	0.000	0.000	0.000	0.000
2.800	1.963	3.023	42.46	0.000	0.000	0.000	0.000
3.000	2.018	3.316	45.12	0.000	0.000	0.000	0.000
3.200	2.073	3.618	47.63	0.000	0.000	0.000	0.000
3.400	2.129	3.930	50.01	0.000	0.000	0.000	0.000
3.600	2.186	4.251	52.28	0.000	0.000	0.000	0.000
3.800	2.244	4.583	54.46	0.000	0.000	0.000	0.000
4.000	2.303	4.924	56.56	0.000	0.000	0.000	0.000
4.200	2.363	5.274	58.58	0.000	0.000	0.000	0.000
4.400	2.424	5.635	60.53	0.000	0.000	0.000	0.000
4.600	2.485	6.005	62.42	0.000	0.000	0.000	0.000
4.800	2.548	6.385	64.26	0.000	0.000	0.000	0.000
5.000	2.612	6.774	66.05	0.000	0.000	0.000	0.000
5.200	2.676	7.174	67.79	0.000	0.000	0.000	0.000
5.400	2.742	7.583	69.48	0.000	0.000	0.000	0.000
5.600	2.808	8.001	71.13	0.000	0.000	0.000	0.000
5.800	2.876	8.430	72.75	0.000	0.000	0.000	0.000
6.000	2.944	8.868	74.33	0.000	0.000	0.000	0.000
6.200	3.014	9.316	75.88	0.000	0.000	0.000	0.000
6.400	3.084	9.773	77.40	0.000	0.000	0.000	0.000
6.600	3.155	10.24	78.89	0.000	0.000	0.000	0.000
6.800	3.227	10.72	80.35	0.000	0.000	0.000	0.000
7.000	3.300	11.20	81.78	0.000	0.000	0.000	0.000
7.200	3.375	11.70	83.19	0.000	0.000	0.000	0.000
7.400	3.450	12.21	84.58	0.000	0.000	0.000	0.000
7.600	3.525	12.72	85.95	0.000	0.000	0.000	0.000
7.800	3.602	13.25	87.29	0.000	0.000	0.000	0.000
8.000	3.680	13.78	88.61	0.000	0.000	0.000	0.000
8.200	3.759	14.33	89.91	0.000	0.000	0.000	0.000
8.400	3.839	14.88	91.20	0.000	0.000	0.000	0.000
8.600	3.919	15.45	92.47	0.000	0.000	0.000	0.000
8.800	4.001	16.02	93.71	0.000	0.000	0.000	0.000
9.000	4.084	16.61	94.95	0.000	0.000	0.000	0.000

DRAFT

9.200	4.167	17.20	96.17	0.000	0.000	0.000	0.000
9.400	4.252	17.80	97.37	0.000	0.000	0.000	0.000
9.600	4.337	18.41	102.8	0.000	0.000	0.000	0.000
9.800	4.423	19.04	121.6	0.000	0.000	0.000	0.000
10.000	4.511	19.67	148.0	0.000	0.000	0.000	0.000
10.20	4.599	20.31	180.0	0.000	0.000	0.000	0.000
10.40	4.688	20.96	216.9	0.000	0.000	0.000	0.000
10.60	4.778	21.62	258.0	0.000	0.000	0.000	0.000
10.80	4.869	22.30	302.8	0.000	0.000	0.000	0.000
11.00	4.961	22.98	351.2	0.000	0.000	0.000	0.000
11.20	5.054	23.67	402.8	0.000	0.000	0.000	0.000
11.40	5.148	24.37	457.5	0.000	0.000	0.000	0.000
11.60	5.243	25.08	515.1	0.000	0.000	0.000	0.000
11.80	5.339	25.80	575.4	0.000	0.000	0.000	0.000
12.00	5.436	26.53	638.3	0.000	0.000	0.000	0.000
12.20	5.533	27.27	703.8	0.000	0.000	0.000	0.000
12.40	5.632	28.01	771.7	0.000	0.000	0.000	0.000
12.60	5.731	28.77	841.9	0.000	0.000	0.000	0.000
12.80	5.832	29.54	914.4	0.000	0.000	0.000	0.000
13.00	5.933	30.32	989.1	0.000	0.000	0.000	0.000
13.20	6.036	31.11	1065.897	0.000	0.000	0.000	0.000
13.40	6.139	31.90	1144.774	0.000	0.000	0.000	0.000
13.60	6.244	32.71	1225.666	0.000	0.000	0.000	0.000
13.80	6.349	33.53	1308.525	0.000	0.000	0.000	0.000
14.00	6.455	34.36	1393.302	0.000	0.000	0.000	0.000
14.20	6.562	35.19	1479.957	0.000	0.000	0.000	0.000
14.40	6.670	36.04	1568.447	0.000	0.000	0.000	0.000
14.60	6.779	36.89	1658.736	0.000	0.000	0.000	0.000
14.80	6.889	37.76	1750.788	0.000	0.000	0.000	0.000
15.00	7.000	38.63	1844.568	0.000	0.000	0.000	0.000
15.20	7.112	39.52	1940.046	0.000	0.000	0.000	0.000
15.40	7.225	40.41	2037.191	0.000	0.000	0.000	0.000
15.60	7.339	41.32	2135.975	0.000	0.000	0.000	0.000
15.80	7.453	42.23	2236.371	0.000	0.000	0.000	0.000
16.00	7.569	43.15	2338.352	0.000	0.000	0.000	0.000
16.20	7.685	44.09	2441.896	0.000	0.000	0.000	0.000
16.40	7.803	45.03	2546.977	0.000	0.000	0.000	0.000
16.60	7.921	45.98	2653.573	0.000	0.000	0.000	0.000
16.80	8.041	46.95	2761.664	0.000	0.000	0.000	0.000
17.00	8.161	47.92	2871.229	0.000	0.000	0.000	0.000
17.20	8.283	48.90	2982.247	0.000	0.000	0.000	0.000
17.40	8.405	49.89	3094.699	0.000	0.000	0.000	0.000
17.60	8.528	50.89	3208.569	0.000	0.000	0.000	0.000
17.80	8.652	51.90	3323.837	0.000	0.000	0.000	0.000
18.00	8.777	52.92	3440.487	0.000	0.000	0.000	0.000
18.20	8.903	53.96	3558.503	0.000	0.000	0.000	0.000
18.40	9.030	55.00	3677.869	0.000	0.000	0.000	0.000
18.60	9.158	56.05	3798.569	0.000	0.000	0.000	0.000
18.80	9.287	57.10	3920.59	0.000	0.000	0.000	0.000
19.00	9.417	58.17	4043.916	0.000	0.000	0.000	0.000

DRAFT

Urban 101

Depth: 10 ft.
Element Flows To:
Outlet 1 Outlet 2
Urban 4

SSD Table Hydraulic Table

Stage (ft)	Area (ac)	Volume (ac-ft)	Manual	NotUsed	NotUsed	NotUsed	NotUsed
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.500	1.600	0.050	2.100	0.000	0.000	0.000	0.000
1.500	1.700	0.180	5.080	0.000	0.000	0.000	0.000
2.500	1.800	0.420	8.720	0.000	0.000	0.000	0.000
3.500	2.000	0.770	12.92	0.000	0.000	0.000	0.000
5.500	2.200	1.230	29.14	0.000	0.000	0.000	0.000
7.500	3.600	1.800	36.96	0.000	0.000	0.000	0.000
9.500	4.200	2.490	43.21	0.000	0.000	0.000	0.000
10.000	4.500	2.700	999.0	0.000	0.000	0.000	0.000

DRAFT

Urban 100

Depth: 17.5 ft.
Element Flows To:
Outlet 1 Outlet 2
Urban 4

SSD Table Hydraulic Table

Stage (ft)	Area (ac)	Volume (ac-ft)	Manual	NotUsed	NotUsed	NotUsed	NotUsed
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.500	1.600	0.030	2.850	0.000	0.000	0.000	0.000
1.500	1.700	0.080	4.270	0.000	0.000	0.000	0.000
2.500	1.800	0.170	5.710	0.000	0.000	0.000	0.000
3.500	2.000	0.290	6.840	0.000	0.000	0.000	0.000
5.500	2.200	0.450	7.760	0.000	0.000	0.000	0.000
7.500	3.600	0.650	13.30	0.000	0.000	0.000	0.000
9.500	4.200	0.900	15.99	0.000	0.000	0.000	0.000
11.50	5.900	1.220	18.17	0.000	0.000	0.000	0.000
16.50	7.600	1.600	20.06	0.000	0.000	0.000	0.000

DRAFT

HMB One

Depth: 8.1 ft.
Element Flows To:
Outlet 1 Outlet 2
POC 1

SSD Table Hydraulic Table

Stage (ft)	Area (ac)	Volume (ac-ft)	Manual	NotUsed	NotUsed	NotUsed	NotUsed
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.010	0.150	0.002	0.001	0.000	0.000	0.000	0.000
0.200	0.160	0.030	0.074	0.000	0.000	0.000	0.000
0.300	0.164	0.047	0.126	0.000	0.000	0.000	0.000
0.400	0.169	0.064	0.158	0.000	0.000	0.000	0.000
0.500	0.173	0.081	0.184	0.000	0.000	0.000	0.000
0.600	0.177	0.099	0.207	0.000	0.000	0.000	0.000
0.700	0.182	0.117	0.228	0.000	0.000	0.000	0.000
0.800	0.186	0.136	0.247	0.000	0.000	0.000	0.000
0.900	0.191	0.155	0.265	0.000	0.000	0.000	0.000
1.000	0.195	0.174	0.281	0.000	0.000	0.000	0.000
1.100	0.200	0.194	0.297	0.000	0.000	0.000	0.000
1.200	0.204	0.214	0.312	0.000	0.000	0.000	0.000
1.300	0.209	0.235	0.326	0.000	0.000	0.000	0.000
1.400	0.213	0.256	0.340	0.000	0.000	0.000	0.000
1.500	0.218	0.278	0.353	0.000	0.000	0.000	0.000
1.600	0.222	0.300	0.365	0.000	0.000	0.000	0.000
1.700	0.226	0.322	0.378	0.000	0.000	0.000	0.000
1.800	0.231	0.345	0.389	0.000	0.000	0.000	0.000
1.900	0.235	0.369	0.401	0.000	0.000	0.000	0.000
2.000	0.240	0.393	0.412	0.000	0.000	0.000	0.000
2.100	0.244	0.417	0.423	0.000	0.000	0.000	0.000
2.200	0.249	0.441	0.433	0.000	0.000	0.000	0.000
2.300	0.253	0.467	0.444	0.000	0.000	0.000	0.000
2.400	0.257	0.492	0.454	0.000	0.000	0.000	0.000
2.500	0.262	0.518	0.464	0.000	0.000	0.000	0.000
2.600	0.266	0.544	0.473	0.000	0.000	0.000	0.000
2.700	0.271	0.571	0.483	0.000	0.000	0.000	0.000
2.800	0.275	0.598	0.492	0.000	0.000	0.000	0.000
2.900	0.279	0.626	0.501	0.000	0.000	0.000	0.000
3.000	0.284	0.654	0.510	0.000	0.000	0.000	0.000
3.100	0.288	0.683	0.519	0.000	0.000	0.000	0.000
3.200	0.293	0.712	0.528	0.000	0.000	0.000	0.000
3.300	0.297	0.741	0.536	0.000	0.000	0.000	0.000
3.400	0.301	0.771	0.545	0.000	0.000	0.000	0.000
3.500	0.306	0.801	0.553	0.000	0.000	0.000	0.000
3.600	0.310	0.832	0.561	0.000	0.000	0.000	0.000
3.700	0.314	0.863	0.569	0.000	0.000	0.000	0.000
3.800	0.319	0.895	0.577	0.000	0.000	0.000	0.000
3.900	0.323	0.927	0.585	0.000	0.000	0.000	0.000
4.000	0.327	0.959	0.592	0.000	0.000	0.000	0.000
4.100	0.332	0.992	0.600	0.000	0.000	0.000	0.000
4.200	0.336	1.025	0.607	0.000	0.000	0.000	0.000
4.300	0.340	1.059	0.615	0.000	0.000	0.000	0.000
4.400	0.345	1.093	0.622	0.000	0.000	0.000	0.000
4.500	0.349	1.128	0.629	0.000	0.000	0.000	0.000
4.600	0.353	1.163	0.637	0.000	0.000	0.000	0.000

DRAFT

4.700	0.358	1.198	0.644	0.000	0.000	0.000	0.000
4.800	0.362	1.234	0.651	0.000	0.000	0.000	0.000
4.900	0.366	1.270	0.658	0.000	0.000	0.000	0.000
5.000	0.371	1.307	0.664	0.000	0.000	0.000	0.000
5.100	0.375	1.344	0.671	0.000	0.000	0.000	0.000
5.200	0.379	1.382	0.678	0.000	0.000	0.000	0.000
5.300	0.384	1.420	0.685	0.000	0.000	0.000	0.000
5.400	0.388	1.459	0.691	0.000	0.000	0.000	0.000
5.500	0.392	1.498	0.698	0.000	0.000	0.000	0.000
5.600	0.397	1.537	0.704	0.000	0.000	0.000	0.000
5.700	0.401	1.577	0.711	0.000	0.000	0.000	0.000
5.800	0.405	1.617	0.717	0.000	0.000	0.000	0.000
5.900	0.409	1.657	0.723	0.000	0.000	0.000	0.000
6.000	0.414	1.699	0.729	0.000	0.000	0.000	0.000
6.100	0.418	1.740	0.736	0.000	0.000	0.000	0.000
6.200	0.422	1.782	0.742	0.000	0.000	0.000	0.000
6.300	0.427	1.824	0.748	0.000	0.000	0.000	0.000
6.400	0.431	1.867	0.754	0.000	0.000	0.000	0.000
6.500	0.435	1.910	0.760	0.000	0.000	0.000	0.000
6.600	0.439	1.954	0.766	0.000	0.000	0.000	0.000
6.700	0.444	1.998	0.772	0.000	0.000	0.000	0.000
6.800	0.448	2.043	0.777	0.000	0.000	0.000	0.000
6.900	0.452	2.088	0.783	0.000	0.000	0.000	0.000
7.000	0.456	2.133	0.789	0.000	0.000	0.000	0.000
7.100	0.461	2.179	0.795	0.000	0.000	0.000	0.000
7.200	0.465	2.225	0.800	0.000	0.000	0.000	0.000
7.300	0.469	2.272	0.806	0.000	0.000	0.000	0.000
7.400	0.473	2.319	0.812	0.000	0.000	0.000	0.000
7.500	0.477	2.367	0.817	0.000	0.000	0.000	0.000
7.600	0.482	2.415	0.823	0.000	0.000	0.000	0.000
7.700	0.486	2.463	0.828	0.000	0.000	0.000	0.000
7.800	0.490	2.512	0.834	0.000	0.000	0.000	0.000
7.900	0.494	2.561	0.839	0.000	0.000	0.000	0.000
8.000	0.499	2.611	0.844	0.000	0.000	0.000	0.000
8.100	0.503	2.661	999.0	0.000	0.000	0.000	0.000

DRAFT

DB 9 (was 10)

Depth: 18.2 ft.
Element Flows To:
Outlet 1 Outlet 2
POC 25

SSD Table Hydraulic Table

Stage (ft)	Area (ac)	Volume (ac-ft)	Manual	NotUsed	NotUsed	NotUsed	NotUsed
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.100	0.310	0.031	0.088	0.000	0.000	0.000	0.000
0.200	0.294	0.439	0.248	0.000	0.000	0.000	0.000
0.400	0.304	0.462	0.702	0.000	0.000	0.000	0.000
0.600	0.313	0.488	1.290	0.000	0.000	0.000	0.000
0.800	0.323	0.518	1.986	0.000	0.000	0.000	0.000
1.000	0.333	0.551	2.775	0.000	0.000	0.000	0.000
1.200	0.343	0.588	3.648	0.000	0.000	0.000	0.000
1.400	0.354	0.629	4.597	0.000	0.000	0.000	0.000
1.600	0.364	0.673	5.616	0.000	0.000	0.000	0.000
1.800	0.375	0.721	6.701	0.000	0.000	0.000	0.000
2.000	0.386	0.772	7.849	0.000	0.000	0.000	0.000
2.200	0.397	0.828	9.055	0.000	0.000	0.000	0.000
2.400	0.408	0.886	10.32	0.000	0.000	0.000	0.000
2.600	0.419	0.949	11.63	0.000	0.000	0.000	0.000
2.800	0.431	1.015	13.00	0.000	0.000	0.000	0.000
3.000	0.442	1.085	14.42	0.000	0.000	0.000	0.000
3.200	0.454	1.158	15.70	0.000	0.000	0.000	0.000
3.400	0.466	1.235	16.59	0.000	0.000	0.000	0.000
3.600	0.478	1.316	17.44	0.000	0.000	0.000	0.000
3.800	0.491	1.400	18.26	0.000	0.000	0.000	0.000
4.000	0.503	1.488	19.03	0.000	0.000	0.000	0.000
4.200	0.516	1.580	19.78	0.000	0.000	0.000	0.000
4.400	0.529	1.675	20.50	0.000	0.000	0.000	0.000
4.600	0.542	1.774	21.19	0.000	0.000	0.000	0.000
4.800	0.555	1.877	21.87	0.000	0.000	0.000	0.000
5.000	0.569	1.983	22.52	0.000	0.000	0.000	0.000
5.200	0.582	2.093	23.15	0.000	0.000	0.000	0.000
5.400	0.596	2.206	24.09	0.000	0.000	0.000	0.000
5.600	0.610	2.323	26.02	0.000	0.000	0.000	0.000
5.800	0.624	2.444	28.49	0.000	0.000	0.000	0.000
6.000	0.638	2.568	31.39	0.000	0.000	0.000	0.000
6.200	0.653	2.696	34.63	0.000	0.000	0.000	0.000
6.400	0.667	2.828	38.17	0.000	0.000	0.000	0.000
6.600	0.682	2.963	41.99	0.000	0.000	0.000	0.000
6.800	0.697	3.102	46.07	0.000	0.000	0.000	0.000
7.000	0.712	3.245	50.37	0.000	0.000	0.000	0.000
7.200	0.727	3.391	54.90	0.000	0.000	0.000	0.000
7.400	0.743	3.541	59.64	0.000	0.000	0.000	0.000
7.600	0.758	3.694	64.58	0.000	0.000	0.000	0.000
7.800	0.774	3.852	69.70	0.000	0.000	0.000	0.000
8.000	0.790	4.012	75.01	0.000	0.000	0.000	0.000
8.200	0.806	4.177	80.49	0.000	0.000	0.000	0.000
8.400	0.822	4.345	86.15	0.000	0.000	0.000	0.000
8.600	0.839	4.517	91.96	0.000	0.000	0.000	0.000
8.800	0.856	4.692	97.94	0.000	0.000	0.000	0.000
9.000	0.872	4.871	103.6	0.000	0.000	0.000	0.000

DRAFT

9.200	0.889	5.054	107.5	0.000	0.000	0.000	0.000
9.400	0.907	5.240	111.3	0.000	0.000	0.000	0.000
9.600	0.924	5.430	118.6	0.000	0.000	0.000	0.000
9.800	0.941	5.624	128.6	0.000	0.000	0.000	0.000
10.000	0.959	5.821	140.5	0.000	0.000	0.000	0.000
10.20	0.977	6.022	153.8	0.000	0.000	0.000	0.000
10.40	0.995	6.226	168.4	0.000	0.000	0.000	0.000
10.60	1.013	6.434	184.1	0.000	0.000	0.000	0.000
10.80	1.031	6.646	200.8	0.000	0.000	0.000	0.000
11.00	1.050	6.861	218.5	0.000	0.000	0.000	0.000
11.20	1.069	7.080	237.0	0.000	0.000	0.000	0.000
11.40	1.088	7.303	256.3	0.000	0.000	0.000	0.000
11.60	1.107	7.530	276.5	0.000	0.000	0.000	0.000
11.80	1.126	7.760	297.4	0.000	0.000	0.000	0.000
12.00	1.145	7.993	319.0	0.000	0.000	0.000	0.000
12.20	1.165	8.230	341.3	0.000	0.000	0.000	0.000
12.40	1.184	8.471	364.3	0.000	0.000	0.000	0.000
12.60	1.204	8.716	388.0	0.000	0.000	0.000	0.000
12.80	1.224	8.964	412.2	0.000	0.000	0.000	0.000
13.00	1.245	9.216	437.1	0.000	0.000	0.000	0.000
13.20	1.265	9.471	462.6	0.000	0.000	0.000	0.000
13.40	1.286	9.730	488.6	0.000	0.000	0.000	0.000
13.60	1.306	9.993	515.2	0.000	0.000	0.000	0.000
13.80	1.327	10.26	542.4	0.000	0.000	0.000	0.000
14.00	1.348	10.53	570.1	0.000	0.000	0.000	0.000
14.20	1.370	10.80	598.3	0.000	0.000	0.000	0.000
14.40	1.391	11.08	627.1	0.000	0.000	0.000	0.000
14.60	1.413	11.36	656.3	0.000	0.000	0.000	0.000
14.80	1.435	11.65	686.1	0.000	0.000	0.000	0.000
15.00	1.457	11.93	716.3	0.000	0.000	0.000	0.000
15.20	1.479	12.23	747.1	0.000	0.000	0.000	0.000
15.40	1.501	12.52	778.3	0.000	0.000	0.000	0.000
15.60	1.523	12.82	809.9	0.000	0.000	0.000	0.000
15.80	1.546	13.12	842.1	0.000	0.000	0.000	0.000
16.00	1.569	13.43	874.6	0.000	0.000	0.000	0.000
16.20	1.592	13.74	907.7	0.000	0.000	0.000	0.000
16.40	1.615	14.05	941.1	0.000	0.000	0.000	0.000
16.60	1.638	14.37	975.0	0.000	0.000	0.000	0.000
16.80	1.662	14.69	1009.352	0.000	0.000	0.000	0.000
17.00	1.685	15.02	1044.099	0.000	0.000	0.000	0.000
17.20	1.709	15.35	1079.264	0.000	0.000	0.000	0.000
17.40	1.733	15.68	1114.84	0.000	0.000	0.000	0.000
17.60	1.757	16.01	1150.824	0.000	0.000	0.000	0.000
17.80	1.782	16.35	1187.209	0.000	0.000	0.000	0.000
18.00	1.806	16.70	1223.991	0.000	0.000	0.000	0.000
18.20	1.831	17.04	9999	0.000	0.000	0.000	0.000

DRAFT

HMB 19 WQ (was 21)

Depth: 10.2 ft.
Element Flows To:
Outlet 1 Outlet 2
DB 6 (was 7)

SSD Table Hydraulic Table

Stage (ft)	Area (ac)	Volume (ac-ft)	Manual	NotUsed	NotUsed	NotUsed	NotUsed
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.010	0.340	0.003	0.001	0.000	0.000	0.000	0.000
0.100	0.346	0.034	0.044	0.000	0.000	0.000	0.000
0.200	0.353	0.069	0.124	0.000	0.000	0.000	0.000
0.300	0.360	0.105	0.228	0.000	0.000	0.000	0.000
0.400	0.367	0.141	0.351	0.000	0.000	0.000	0.000
0.500	0.375	0.178	0.451	0.000	0.000	0.000	0.000
0.600	0.382	0.216	0.523	0.000	0.000	0.000	0.000
0.700	0.389	0.254	0.586	0.000	0.000	0.000	0.000
0.800	0.396	0.293	0.643	0.000	0.000	0.000	0.000
0.900	0.404	0.333	0.695	0.000	0.000	0.000	0.000
1.000	0.411	0.374	0.744	0.000	0.000	0.000	0.000
1.100	0.418	0.415	0.789	0.000	0.000	0.000	0.000
1.200	0.425	0.457	0.832	0.000	0.000	0.000	0.000
1.300	0.433	0.500	0.873	0.000	0.000	0.000	0.000
1.400	0.440	0.544	0.913	0.000	0.000	0.000	0.000
1.500	0.447	0.588	0.950	0.000	0.000	0.000	0.000
1.600	0.454	0.633	0.986	0.000	0.000	0.000	0.000
1.700	0.461	0.679	1.021	0.000	0.000	0.000	0.000
1.800	0.469	0.725	1.055	0.000	0.000	0.000	0.000
1.900	0.476	0.772	1.087	0.000	0.000	0.000	0.000
2.000	0.483	0.820	1.119	0.000	0.000	0.000	0.000
2.100	0.490	0.869	1.150	0.000	0.000	0.000	0.000
2.200	0.498	0.918	1.180	0.000	0.000	0.000	0.000
2.300	0.505	0.968	1.209	0.000	0.000	0.000	0.000
2.400	0.512	1.019	1.238	0.000	0.000	0.000	0.000
2.500	0.519	1.070	1.265	0.000	0.000	0.000	0.000
2.600	0.527	1.123	1.293	0.000	0.000	0.000	0.000
2.700	0.534	1.176	1.320	0.000	0.000	0.000	0.000
2.800	0.541	1.229	1.346	0.000	0.000	0.000	0.000
2.900	0.548	1.284	1.371	0.000	0.000	0.000	0.000
3.000	0.555	1.339	1.397	0.000	0.000	0.000	0.000
3.100	0.563	1.395	1.421	0.000	0.000	0.000	0.000
3.200	0.570	1.451	1.446	0.000	0.000	0.000	0.000
3.300	0.577	1.509	1.470	0.000	0.000	0.000	0.000
3.400	0.584	1.567	1.493	0.000	0.000	0.000	0.000
3.500	0.592	1.625	1.517	0.000	0.000	0.000	0.000
3.600	0.599	1.685	1.539	0.000	0.000	0.000	0.000
3.700	0.606	1.745	1.562	0.000	0.000	0.000	0.000
3.800	0.613	1.806	1.584	0.000	0.000	0.000	0.000
3.900	0.620	1.868	1.606	0.000	0.000	0.000	0.000
4.000	0.628	1.930	1.628	0.000	0.000	0.000	0.000
4.100	0.635	1.993	1.649	0.000	0.000	0.000	0.000
4.200	0.642	2.057	1.670	0.000	0.000	0.000	0.000
4.300	0.649	2.122	1.691	0.000	0.000	0.000	0.000
4.400	0.657	2.187	1.711	0.000	0.000	0.000	0.000
4.500	0.664	2.253	1.732	0.000	0.000	0.000	0.000

DRAFT

4.600	0.671	2.320	1.752	0.000	0.000	0.000	0.000
4.700	0.678	2.387	1.772	0.000	0.000	0.000	0.000
4.800	0.686	2.455	1.791	0.000	0.000	0.000	0.000
4.900	0.693	2.524	1.811	0.000	0.000	0.000	0.000
5.000	0.700	2.594	1.830	0.000	0.000	0.000	0.000
5.100	0.707	2.664	1.849	0.000	0.000	0.000	0.000
5.200	0.714	2.735	1.868	0.000	0.000	0.000	0.000
5.300	0.722	2.807	1.886	0.000	0.000	0.000	0.000
5.400	0.729	2.880	1.905	0.000	0.000	0.000	0.000
5.500	0.736	2.953	1.923	0.000	0.000	0.000	0.000
5.600	0.743	3.027	1.941	0.000	0.000	0.000	0.000
5.700	0.751	3.102	1.959	0.000	0.000	0.000	0.000
5.800	0.758	3.177	1.977	0.000	0.000	0.000	0.000
5.900	0.765	3.253	1.994	0.000	0.000	0.000	0.000
6.000	0.772	3.330	2.012	0.000	0.000	0.000	0.000
6.100	0.780	3.408	2.029	0.000	0.000	0.000	0.000
6.200	0.787	3.486	2.046	0.000	0.000	0.000	0.000
6.300	0.794	3.565	2.063	0.000	0.000	0.000	0.000
6.400	0.801	3.645	2.080	0.000	0.000	0.000	0.000
6.500	0.808	3.725	2.097	0.000	0.000	0.000	0.000
6.600	0.816	3.807	2.113	0.000	0.000	0.000	0.000
6.700	0.823	3.889	2.130	0.000	0.000	0.000	0.000
6.800	0.830	3.971	2.146	0.000	0.000	0.000	0.000
6.900	0.837	4.055	2.162	0.000	0.000	0.000	0.000
7.000	0.845	4.139	2.179	0.000	0.000	0.000	0.000
7.100	0.852	4.224	2.194	0.000	0.000	0.000	0.000
7.200	0.859	4.309	2.210	0.000	0.000	0.000	0.000
7.300	0.866	4.396	2.226	0.000	0.000	0.000	0.000
7.400	0.873	4.483	2.242	0.000	0.000	0.000	0.000
7.500	0.881	4.570	2.257	0.000	0.000	0.000	0.000
7.600	0.888	4.659	2.273	0.000	0.000	0.000	0.000
7.700	0.895	4.748	2.288	0.000	0.000	0.000	0.000
7.800	0.902	4.838	2.303	0.000	0.000	0.000	0.000
7.900	0.910	4.929	2.318	0.000	0.000	0.000	0.000
8.000	0.917	5.020	2.333	0.000	0.000	0.000	0.000
8.200	0.931	5.205	2.363	0.000	0.000	0.000	0.000
8.400	0.946	5.393	2.393	0.000	0.000	0.000	0.000
8.600	0.960	5.584	2.422	0.000	0.000	0.000	0.000
8.800	0.975	5.777	2.450	0.000	0.000	0.000	0.000
9.000	0.989	5.974	2.479	0.000	0.000	0.000	0.000
9.200	1.004	6.173	2.507	0.000	0.000	0.000	0.000
9.400	1.018	6.376	2.534	0.000	0.000	0.000	0.000
9.600	1.033	6.581	2.562	0.000	0.000	0.000	0.000
9.800	1.047	6.789	2.589	0.000	0.000	0.000	0.000
10.000	1.061	7.000	2.616	0.000	0.000	0.000	0.000

DRAFT

DB 6 (was 7)

Depth: 12 ft.
Element Flows To:
Outlet 1 Outlet 2
POC 20 NF

SSD Table Hydraulic Table

Stage (ft)	Area (ac)	Volume (ac-ft)	Manual	NotUsed	NotUsed	NotUsed	NotUsed
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.010	0.600	0.006	0.007	0.000	0.000	0.000	0.000
0.100	0.611	0.060	0.211	0.000	0.000	0.000	0.000
0.200	0.622	0.122	0.596	0.000	0.000	0.000	0.000
0.300	0.633	0.184	1.094	0.000	0.000	0.000	0.000
0.400	0.645	0.248	1.685	0.000	0.000	0.000	0.000
0.500	0.656	0.313	2.355	0.000	0.000	0.000	0.000
0.600	0.667	0.379	3.095	0.000	0.000	0.000	0.000
0.700	0.679	0.446	3.901	0.000	0.000	0.000	0.000
0.800	0.690	0.514	4.766	0.000	0.000	0.000	0.000
0.900	0.702	0.584	5.686	0.000	0.000	0.000	0.000
1.000	0.714	0.655	6.660	0.000	0.000	0.000	0.000
1.100	0.726	0.727	7.459	0.000	0.000	0.000	0.000
1.200	0.738	0.800	8.057	0.000	0.000	0.000	0.000
1.300	0.751	0.874	8.613	0.000	0.000	0.000	0.000
1.400	0.763	0.950	9.136	0.000	0.000	0.000	0.000
1.500	0.775	1.026	9.630	0.000	0.000	0.000	0.000
1.600	0.788	1.104	10.10	0.000	0.000	0.000	0.000
1.700	0.801	1.184	10.55	0.000	0.000	0.000	0.000
1.800	0.814	1.265	10.98	0.000	0.000	0.000	0.000
1.900	0.827	1.346	11.39	0.000	0.000	0.000	0.000
2.000	0.840	1.430	11.79	0.000	0.000	0.000	0.000
2.100	0.853	1.514	12.18	0.000	0.000	0.000	0.000
2.200	0.867	1.600	12.56	0.000	0.000	0.000	0.000
2.300	0.880	1.688	12.92	0.000	0.000	0.000	0.000
2.400	0.894	1.776	13.27	0.000	0.000	0.000	0.000
2.500	0.908	1.866	13.62	0.000	0.000	0.000	0.000
2.600	0.922	1.958	13.96	0.000	0.000	0.000	0.000
2.700	0.936	2.051	14.28	0.000	0.000	0.000	0.000
2.800	0.950	2.145	14.61	0.000	0.000	0.000	0.000
2.900	0.964	2.240	14.92	0.000	0.000	0.000	0.000
3.000	0.978	2.338	15.23	0.000	0.000	0.000	0.000
3.100	0.993	2.436	15.90	0.000	0.000	0.000	0.000
3.200	1.008	2.536	16.87	0.000	0.000	0.000	0.000
3.300	1.022	2.638	18.03	0.000	0.000	0.000	0.000
3.400	1.037	2.741	19.35	0.000	0.000	0.000	0.000
3.500	1.052	2.845	20.80	0.000	0.000	0.000	0.000
3.600	1.067	2.951	22.37	0.000	0.000	0.000	0.000
3.700	1.083	3.059	24.05	0.000	0.000	0.000	0.000
3.800	1.098	3.168	25.83	0.000	0.000	0.000	0.000
3.900	1.114	3.278	27.71	0.000	0.000	0.000	0.000
4.000	1.129	3.390	29.67	0.000	0.000	0.000	0.000
4.100	1.145	3.504	31.72	0.000	0.000	0.000	0.000
4.200	1.161	3.620	33.84	0.000	0.000	0.000	0.000
4.300	1.177	3.736	36.05	0.000	0.000	0.000	0.000
4.400	1.193	3.855	37.99	0.000	0.000	0.000	0.000
4.500	1.209	3.975	39.46	0.000	0.000	0.000	0.000

DRAFT

4.600	1.226	4.097	40.85	0.000	0.000	0.000	0.000
4.700	1.242	4.220	42.19	0.000	0.000	0.000	0.000
4.800	1.259	4.345	43.46	0.000	0.000	0.000	0.000
4.900	1.276	4.472	44.69	0.000	0.000	0.000	0.000
5.000	1.293	4.601	45.88	0.000	0.000	0.000	0.000
5.100	1.310	4.731	47.72	0.000	0.000	0.000	0.000
5.200	1.327	4.863	50.09	0.000	0.000	0.000	0.000
5.300	1.344	4.996	52.80	0.000	0.000	0.000	0.000
5.400	1.362	5.132	55.77	0.000	0.000	0.000	0.000
5.500	1.379	5.269	58.98	0.000	0.000	0.000	0.000
5.600	1.397	5.407	62.40	0.000	0.000	0.000	0.000
5.700	1.414	5.548	66.00	0.000	0.000	0.000	0.000
5.800	1.432	5.690	69.78	0.000	0.000	0.000	0.000
5.900	1.450	5.835	73.72	0.000	0.000	0.000	0.000
6.000	1.469	5.980	77.81	0.000	0.000	0.000	0.000
6.100	1.487	6.128	82.05	0.000	0.000	0.000	0.000
6.200	1.505	6.278	86.43	0.000	0.000	0.000	0.000
6.300	1.524	6.429	90.94	0.000	0.000	0.000	0.000
6.400	1.542	6.583	95.58	0.000	0.000	0.000	0.000
6.500	1.561	6.738	100.3	0.000	0.000	0.000	0.000
6.600	1.580	6.895	105.2	0.000	0.000	0.000	0.000
6.700	1.599	7.054	110.2	0.000	0.000	0.000	0.000
6.800	1.618	7.215	115.3	0.000	0.000	0.000	0.000
6.900	1.638	7.377	120.5	0.000	0.000	0.000	0.000
7.000	1.657	7.542	125.9	0.000	0.000	0.000	0.000
7.200	1.696	7.877	136.8	0.000	0.000	0.000	0.000
7.400	1.736	8.221	148.2	0.000	0.000	0.000	0.000
7.600	1.776	8.572	159.9	0.000	0.000	0.000	0.000
7.800	1.817	8.931	172.1	0.000	0.000	0.000	0.000
8.000	1.858	9.298	184.5	0.000	0.000	0.000	0.000
8.200	1.900	9.674	197.4	0.000	0.000	0.000	0.000
8.400	1.942	10.06	210.5	0.000	0.000	0.000	0.000
8.600	1.984	10.45	225.1	0.000	0.000	0.000	0.000
8.800	2.028	10.85	234.3	0.000	0.000	0.000	0.000
9.000	2.071	11.26	243.1	0.000	0.000	0.000	0.000
9.200	2.115	11.68	253.6	0.000	0.000	0.000	0.000
9.400	2.160	12.11	270.5	0.000	0.000	0.000	0.000
9.600	2.205	12.54	291.0	0.000	0.000	0.000	0.000
9.800	2.251	12.99	314.0	0.000	0.000	0.000	0.000
10.000	2.297	13.44	339.2	0.000	0.000	0.000	0.000
10.20	2.344	13.91	366.4	0.000	0.000	0.000	0.000
10.40	2.391	14.38	395.2	0.000	0.000	0.000	0.000
10.60	2.439	14.86	425.6	0.000	0.000	0.000	0.000
10.80	2.487	15.35	457.6	0.000	0.000	0.000	0.000
11.00	2.536	15.85	490.8	0.000	0.000	0.000	0.000
11.20	2.585	16.37	525.5	0.000	0.000	0.000	0.000
11.40	2.634	16.89	561.3	0.000	0.000	0.000	0.000
11.60	2.685	17.42	598.4	0.000	0.000	0.000	0.000
11.80	2.735	17.96	636.6	0.000	0.000	0.000	0.000

DRAFT

POC 20 NF

Bottom Length: 100.00 ft.
Bottom Width: 10.00 ft.
Manning's n: 0.035
Channel bottom slope 1: 0.0128 To 1
Channel Left side slope 0: 0.5 To 1
Channel right side slope 2: 0.5 To 1
Discharge Structure
Riser Height: 0 ft.
Riser Diameter: 0 in.
Element Flows To:
Outlet 1 Outlet 2
POC 20 NF2

Channel Hydraulic Table

Stage(ft)	Area(ac)	Volume(ac-ft)	Discharge(cfs)	Infilt(cfs)
0.0000	0.023	0.000	0.000	0.000
0.0667	0.023	0.001	0.525	0.000
0.1333	0.023	0.003	1.661	0.000
0.2000	0.023	0.004	3.253	0.000
0.2667	0.023	0.006	5.233	0.000
0.3333	0.023	0.007	7.562	0.000
0.4000	0.023	0.009	10.21	0.000
0.4667	0.024	0.011	13.15	0.000
0.5333	0.024	0.012	16.37	0.000
0.6000	0.024	0.014	19.85	0.000
0.6667	0.024	0.015	23.59	0.000
0.7333	0.024	0.017	27.56	0.000
0.8000	0.024	0.019	31.76	0.000
0.8667	0.025	0.020	36.18	0.000
0.9333	0.025	0.022	40.82	0.000
1.0000	0.025	0.024	45.66	0.000
1.0667	0.025	0.025	50.71	0.000
1.1333	0.025	0.027	55.95	0.000
1.2000	0.025	0.029	61.38	0.000
1.2667	0.025	0.030	67.00	0.000
1.3333	0.026	0.032	72.79	0.000
1.4000	0.026	0.034	78.77	0.000
1.4667	0.026	0.036	84.92	0.000
1.5333	0.026	0.037	91.25	0.000
1.6000	0.026	0.039	97.74	0.000
1.6667	0.026	0.041	104.4	0.000
1.7333	0.026	0.043	111.2	0.000
1.8000	0.027	0.045	118.2	0.000
1.8667	0.027	0.046	125.3	0.000
1.9333	0.027	0.048	132.6	0.000
2.0000	0.027	0.050	140.0	0.000
2.0667	0.027	0.052	147.6	0.000
2.1333	0.027	0.054	155.4	0.000
2.2000	0.028	0.056	163.3	0.000
2.2667	0.028	0.058	171.4	0.000
2.3333	0.028	0.059	179.6	0.000
2.4000	0.028	0.061	187.9	0.000
2.4667	0.028	0.063	196.4	0.000
2.5333	0.028	0.065	205.0	0.000
2.6000	0.028	0.067	213.8	0.000

DRAFT

2.6667	0.029	0.069	222.7	0.000
2.7333	0.029	0.071	231.8	0.000
2.8000	0.029	0.073	241.0	0.000
2.8667	0.029	0.075	250.3	0.000
2.9333	0.029	0.077	259.8	0.000
3.0000	0.029	0.079	269.4	0.000
3.0667	0.030	0.081	279.1	0.000
3.1333	0.030	0.083	289.0	0.000
3.2000	0.030	0.085	299.0	0.000
3.2667	0.030	0.087	309.2	0.000
3.3333	0.030	0.089	319.5	0.000
3.4000	0.030	0.091	329.9	0.000
3.4667	0.030	0.093	340.5	0.000
3.5333	0.031	0.095	351.1	0.000
3.6000	0.031	0.097	362.0	0.000
3.6667	0.031	0.099	372.9	0.000
3.7333	0.031	0.101	384.0	0.000
3.8000	0.031	0.103	395.2	0.000
3.8667	0.031	0.106	406.5	0.000
3.9333	0.032	0.108	418.0	0.000
4.0000	0.032	0.110	429.6	0.000
4.0667	0.032	0.112	441.4	0.000
4.1333	0.032	0.114	453.2	0.000
4.2000	0.032	0.116	465.2	0.000
4.2667	0.032	0.118	477.4	0.000
4.3333	0.032	0.121	489.6	0.000
4.4000	0.033	0.123	502.0	0.000
4.4667	0.033	0.125	514.5	0.000
4.5333	0.033	0.127	527.1	0.000
4.6000	0.033	0.130	539.9	0.000
4.6667	0.033	0.132	552.8	0.000
4.7333	0.033	0.134	565.8	0.000
4.8000	0.034	0.136	579.0	0.000
4.8667	0.034	0.139	592.3	0.000
4.9333	0.034	0.141	605.7	0.000
5.0000	0.034	0.143	619.3	0.000
5.0667	0.034	0.145	632.9	0.000
5.1333	0.034	0.148	646.7	0.000
5.2000	0.034	0.150	660.7	0.000
5.2667	0.035	0.152	674.7	0.000
5.3333	0.035	0.155	688.9	0.000
5.4000	0.035	0.157	703.2	0.000
5.4667	0.035	0.159	717.7	0.000
5.5333	0.035	0.162	732.2	0.000
5.6000	0.035	0.164	746.9	0.000
5.6667	0.036	0.167	761.8	0.000
5.7333	0.036	0.169	776.7	0.000
5.8000	0.036	0.171	791.8	0.000
5.8667	0.036	0.174	807.0	0.000
5.9333	0.036	0.176	822.4	0.000
6.0000	0.036	0.179	837.9	0.000
6.0667	0.036	0.181	853.5	0.000

DRAFT

DB 7 (was 8)

Depth: 16.2 ft.
Element Flows To:
Outlet 1 Outlet 2
POC 20 SF

SSD Table Hydraulic Table

Stage (ft)	Area (ac)	Volume (ac-ft)	Manual	NotUsed	NotUsed	NotUsed	NotUsed
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.010	0.010	0.010	0.003	0.000	0.000	0.000	0.000
0.200	0.013	0.013	0.298	0.000	0.000	0.000	0.000
0.400	0.017	0.017	0.842	0.000	0.000	0.000	0.000
0.600	0.022	0.022	1.548	0.000	0.000	0.000	0.000
0.800	0.028	0.028	2.383	0.000	0.000	0.000	0.000
1.000	0.036	0.036	3.330	0.000	0.000	0.000	0.000
1.200	0.047	0.047	4.377	0.000	0.000	0.000	0.000
1.400	0.060	0.060	5.516	0.000	0.000	0.000	0.000
1.600	0.078	0.078	6.739	0.000	0.000	0.000	0.000
1.800	0.101	0.101	8.042	0.000	0.000	0.000	0.000
2.000	0.130	0.130	9.419	0.000	0.000	0.000	0.000
2.200	0.185	0.157	10.87	0.000	0.000	0.000	0.000
2.400	0.240	0.190	12.38	0.000	0.000	0.000	0.000
2.600	0.295	0.230	13.96	0.000	0.000	0.000	0.000
2.800	0.350	0.278	15.60	0.000	0.000	0.000	0.000
3.000	0.405	0.336	17.30	0.000	0.000	0.000	0.000
3.200	0.460	0.407	18.83	0.000	0.000	0.000	0.000
3.400	0.515	0.492	19.91	0.000	0.000	0.000	0.000
3.600	0.570	0.595	21.12	0.000	0.000	0.000	0.000
3.800	0.625	0.719	22.89	0.000	0.000	0.000	0.000
4.000	0.680	0.870	24.96	0.000	0.000	0.000	0.000
4.200	0.766	0.980	27.25	0.000	0.000	0.000	0.000
4.400	0.851	1.103	29.72	0.000	0.000	0.000	0.000
4.600	0.937	1.242	32.35	0.000	0.000	0.000	0.000
4.800	1.023	1.399	35.13	0.000	0.000	0.000	0.000
5.000	1.108	1.575	38.04	0.000	0.000	0.000	0.000
5.200	1.194	1.774	41.07	0.000	0.000	0.000	0.000
5.400	1.280	1.997	44.23	0.000	0.000	0.000	0.000
5.600	1.366	2.249	47.43	0.000	0.000	0.000	0.000
5.800	1.451	2.533	50.56	0.000	0.000	0.000	0.000
6.000	1.537	2.852	56.25	0.000	0.000	0.000	0.000
6.200	1.611	3.194	63.34	0.000	0.000	0.000	0.000
6.400	1.686	3.554	71.47	0.000	0.000	0.000	0.000
6.600	1.761	3.930	80.49	0.000	0.000	0.000	0.000
6.800	1.838	4.324	90.28	0.000	0.000	0.000	0.000
7.000	1.917	4.735	100.8	0.000	0.000	0.000	0.000
7.200	1.996	5.164	111.9	0.000	0.000	0.000	0.000
7.400	2.076	5.610	123.7	0.000	0.000	0.000	0.000
7.600	2.158	6.073	136.0	0.000	0.000	0.000	0.000
7.800	2.240	6.554	148.8	0.000	0.000	0.000	0.000
8.000	2.324	7.052	162.2	0.000	0.000	0.000	0.000
8.200	2.409	7.567	176.0	0.000	0.000	0.000	0.000
8.400	2.495	8.099	190.4	0.000	0.000	0.000	0.000
8.600	2.582	8.649	205.2	0.000	0.000	0.000	0.000
8.800	2.670	9.216	220.4	0.000	0.000	0.000	0.000
9.000	2.759	9.801	236.0	0.000	0.000	0.000	0.000

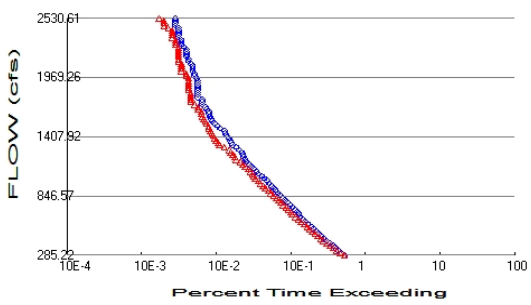
DRAFT

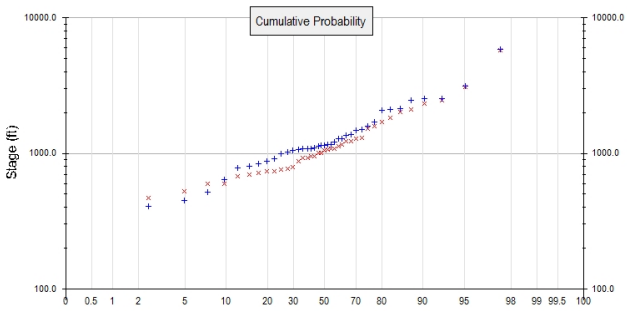
9.200	2.849	10.40	252.1	0.000	0.000	0.000	0.000
9.400	2.940	11.02	268.6	0.000	0.000	0.000	0.000
9.600	3.033	11.66	285.4	0.000	0.000	0.000	0.000
9.800	3.127	12.31	302.7	0.000	0.000	0.000	0.000
10.000	3.221	12.98	320.3	0.000	0.000	0.000	0.000
10.20	3.317	13.67	338.3	0.000	0.000	0.000	0.000
10.40	3.414	14.38	356.6	0.000	0.000	0.000	0.000
10.60	3.512	15.10	375.3	0.000	0.000	0.000	0.000
10.80	3.611	15.84	394.4	0.000	0.000	0.000	0.000
11.00	3.711	16.60	420.0	0.000	0.000	0.000	0.000
11.20	3.813	17.37	441.9	0.000	0.000	0.000	0.000
11.40	3.915	18.17	467.2	0.000	0.000	0.000	0.000
11.60	4.019	18.98	495.0	0.000	0.000	0.000	0.000
11.80	4.123	19.80	524.8	0.000	0.000	0.000	0.000
12.00	4.229	20.65	556.4	0.000	0.000	0.000	0.000
12.20	4.336	21.51	589.6	0.000	0.000	0.000	0.000
12.40	4.444	22.39	624.3	0.000	0.000	0.000	0.000
12.60	4.553	23.28	660.4	0.000	0.000	0.000	0.000
12.80	4.663	24.20	697.8	0.000	0.000	0.000	0.000
13.00	4.775	25.13	736.4	0.000	0.000	0.000	0.000
13.20	4.887	26.08	776.2	0.000	0.000	0.000	0.000
13.40	5.001	27.04	817.1	0.000	0.000	0.000	0.000
13.60	5.115	28.03	859.1	0.000	0.000	0.000	0.000
13.80	5.231	29.03	902.2	0.000	0.000	0.000	0.000
14.00	5.348	30.04	946.2	0.000	0.000	0.000	0.000
14.20	5.466	31.08	991.2	0.000	0.000	0.000	0.000
14.40	5.585	32.13	1037.223	0.000	0.000	0.000	0.000
14.60	5.705	33.20	1084.125	0.000	0.000	0.000	0.000
14.80	5.826	34.29	1131.93	0.000	0.000	0.000	0.000
15.00	5.948	35.39	1180.618	0.000	0.000	0.000	0.000
15.20	6.072	36.51	1230.17	0.000	0.000	0.000	0.000
15.40	6.196	37.65	1280.566	0.000	0.000	0.000	0.000
15.60	6.322	38.81	1331.792	0.000	0.000	0.000	0.000
15.80	6.449	39.98	1383.83	0.000	0.000	0.000	0.000
16.00	6.577	41.17	1436.665	0.000	0.000	0.000	0.000

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Analysis Results

POC 1





\+ Pre-Project x Mitigated

Pre-Project Landuse Totals for POC #1
Total Pervious Area: 4298.41
Total Impervious Area: 1121.1

Mitigated Landuse Totals for POC #1
Total Pervious Area: 3126.32
Total Impervious Area: 2200.82

Flow Frequency Method: Log Pearson Type III 17B

Flow Frequency Return Periods for Pre-Project. POC #1

Return Period	**Flow(cfs)**
2 year	1140.89561
5 year	1994.73878
10 year	2530.611951
25 year	3731.934146

Flow Frequency Return Periods for Mitigated. POC #1

Return Period	**Flow(cfs)**
2 year	1014.040244
5 year	1674.44878
10 year	2306.104634
25 year	3671.750976

Annual Peaks

Annual Peaks for Pre-Project and Mitigated. POC #1

Year	**Pre-Project**	**Mitigated**
1965	1080.530	949.385
1966	520.285	524.140
1967	1350.900	1288.070
1968	783.557	713.915
1969	1093.700	947.865
1970	1161.810	1049.510
1971	1213.520	919.335
1972	637.740	596.164
1973	2076.630	1835.230
1974	1501.020	1237.370
1975	1063.690	764.323
1976	404.122	468.700
1977	272.130	297.969
1978	2548.290	2332.590

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1979	869.592	677.097
1980	1084.220	921.828
1981	1160.120	1013.450
1982	1588.630	1513.950
1983	2148.690	1696.670
1984	1146.320	1014.660
1985	1085.610	793.591
1986	3144.030	3082.420
1987	993.408	877.394
1988	1029.320	1080.940
1989	1283.800	1128.310
1990	909.390	741.853
1991	1144.860	1066.620
1992	1703.570	1595.440
1993	1288.170	1082.310
1994	447.679	596.290
1995	5822.260	5767.150
1996	2446.530	2115.410
1997	2542.290	2445.890
1998	2118.150	2019.220
1999	804.520	697.355
2000	1474.090	1298.810
2001	1052.810	759.884
2002	835.034	733.542
2003	1137.120	1158.660
2004	1370.750	1226.610

Ranked Annual Peaks

Ranked Annual Peaks for Pre-Project and Mitigated. POC #1

Rank	Pre-Project	Mitigated
1	5822.2600	5767.1500
2	3144.0300	3082.4200
3	2548.2900	2445.8900
4	2542.2900	2332.5900
5	2446.5300	2115.4100
6	2148.6900	2019.2200
7	2118.1500	1835.2300
8	2076.6300	1696.6700
9	1703.5700	1595.4400
10	1588.6300	1513.9500
11	1501.0200	1298.8100
12	1474.0900	1288.0700
13	1370.7500	1237.3700
14	1350.9000	1226.6100
15	1288.1700	1158.6600
16	1283.8000	1128.3100
17	1213.5200	1082.3100
18	1161.8100	1080.9400
19	1160.1200	1066.6200
20	1146.3200	1049.5100
21	1144.8600	1014.6600
22	1137.1200	1013.4500
23	1093.7000	949.3850
24	1085.6100	947.8650
25	1084.2200	921.8280
26	1080.5300	919.3350
27	1063.6900	877.3940
28	1052.8100	793.5910

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29	1029.3200	764.3230
30	993.4080	759.8840
31	909.3900	741.8530
32	869.5920	733.5420
33	835.0340	713.9150
34	804.5200	697.3550
35	783.5570	677.0970
36	637.7400	596.2900
37	520.2850	596.1640
38	447.6790	524.1400
39	404.1220	468.7000
40	272.1300	297.9690

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Duration Flows

The Facility PASSED

Flow(cfs)	Predev	Mit	Percentage	Pass/Fail
285.2239	1822	1849	101	Pass
307.9046	1665	1626	97	Pass
330.5853	1519	1446	95	Pass
353.2660	1400	1301	92	Pass
375.9467	1291	1169	90	Pass
398.6273	1160	1069	92	Pass
421.3080	1050	969	92	Pass
443.9887	970	877	90	Pass
466.6694	893	813	91	Pass
489.3501	824	739	89	Pass
512.0308	765	685	89	Pass
534.7115	707	623	88	Pass
557.3922	661	584	88	Pass
580.0728	596	531	89	Pass
602.7535	551	477	86	Pass
625.4342	509	443	87	Pass
648.1149	481	405	84	Pass
670.7956	452	367	81	Pass
693.4763	427	350	81	Pass
716.1570	400	324	81	Pass
738.8376	372	306	82	Pass
761.5183	346	279	80	Pass
784.1990	312	260	83	Pass
806.8797	295	243	82	Pass
829.5604	271	225	83	Pass
852.2411	252	207	82	Pass
874.9218	238	191	80	Pass
897.6025	219	177	80	Pass
920.2831	206	161	78	Pass
942.9638	196	150	76	Pass
965.6445	179	137	76	Pass
988.3252	167	130	77	Pass
1011.0059	155	117	75	Pass
1033.6866	144	111	77	Pass
1056.3673	129	108	83	Pass
1079.0480	121	100	82	Pass
1101.7286	112	95	84	Pass
1124.4093	104	86	82	Pass
1147.0900	98	79	80	Pass
1169.7707	90	74	82	Pass
1192.4514	86	65	75	Pass
1215.1321	81	62	76	Pass
1237.8128	80	59	73	Pass
1260.4935	78	55	70	Pass
1283.1741	72	53	73	Pass
1305.8548	65	45	69	Pass
1328.5355	58	39	67	Pass
1351.2162	56	37	66	Pass
1373.8969	54	35	64	Pass
1396.5776	52	33	63	Pass
1419.2583	48	32	66	Pass
1441.9390	46	31	67	Pass
1464.6196	45	29	64	Pass

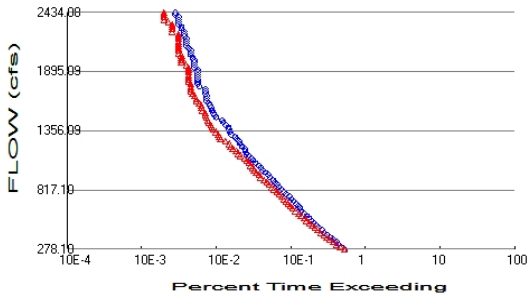
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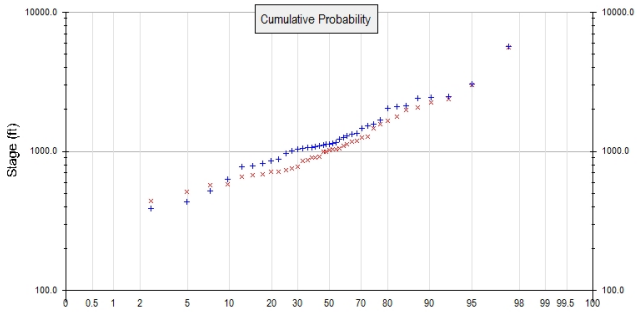
1487.3003	40	28	70	Pass
1509.9810	37	28	75	Pass
1532.6617	33	26	78	Pass
1555.3424	31	25	80	Pass
1578.0231	30	24	80	Pass
1600.7038	29	23	79	Pass
1623.3845	28	22	78	Pass
1646.0651	28	22	78	Pass
1668.7458	26	20	76	Pass
1691.4265	25	20	80	Pass
1714.1072	23	18	78	Pass
1736.7879	23	16	69	Pass
1759.4686	23	16	69	Pass
1782.1493	20	16	80	Pass
1804.8300	20	16	80	Pass
1827.5106	20	16	80	Pass
1850.1913	20	15	75	Pass
1872.8720	20	15	75	Pass
1895.5527	20	15	75	Pass
1918.2334	20	15	75	Pass
1940.9141	20	15	75	Pass
1963.5948	19	15	78	Pass
1986.2755	18	14	77	Pass
2008.9561	18	14	77	Pass
2031.6368	17	12	70	Pass
2054.3175	17	12	70	Pass
2076.9982	17	12	70	Pass
2099.6789	16	12	75	Pass
2122.3596	15	11	73	Pass
2145.0403	15	11	73	Pass
2167.7210	14	11	78	Pass
2190.4016	14	11	78	Pass
2213.0823	14	11	78	Pass
2235.7630	14	11	78	Pass
2258.4437	13	11	84	Pass
2281.1244	12	10	83	Pass
2303.8051	12	10	83	Pass
2326.4858	12	10	83	Pass
2349.1665	11	9	81	Pass
2371.8471	11	9	81	Pass
2394.5278	11	9	81	Pass
2417.2085	11	9	81	Pass
2439.8892	11	8	72	Pass
2462.5699	10	7	70	Pass
2485.2506	10	7	70	Pass
2507.9313	10	7	70	Pass
2530.6120	10	6	60	Pass

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POC 2





\+ Pre-Project x Mitigated

Pre-Project Landuse Totals for POC #2
Total Pervious Area: 4220.28
Total Impervious Area: 1088.44

Mitigated Landuse Totals for POC #2
Total Pervious Area: 3072.15
Total Impervious Area: 2110.87

Flow Frequency Method: Log Pearson Type III 17B

Flow Frequency Return Periods for Pre-Project. POC #2

Return Period	**Flow(cfs)**
2 year	1112.40122
5 year	1959.4
10 year	2434.083659
25 year	3613.04

Flow Frequency Return Periods for Mitigated. POC #2

Return Period	**Flow(cfs)**
2 year	989.509341
5 year	1635.832927
10 year	2216.856585
25 year	3554.562439

Annual Peaks

Annual Peaks for Pre-Project and Mitigated. POC #2

Year	**Pre-Project**	**Mitigated**
1965	1056.740	907.641
1966	516.860	511.280
1967	1323.930	1253.970
1968	777.697	687.546
1969	1097.760	910.270
1970	1138.600	1021.840
1971	1225.620	866.011
1972	631.446	578.563
1973	2039.050	1783.040
1974	1517.390	1173.450
1975	1066.310	752.542
1976	388.649	441.620
1977	271.885	291.006
1978	2439.330	2239.520
1979	850.188	652.740

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1980	1068.660	899.730
1981	1156.640	990.419
1982	1560.780	1460.450
1983	2112.940	1657.580
1984	1117.810	988.643
1985	1083.160	778.041
1986	3043.970	2982.090
1987	971.379	851.819
1988	1012.470	1054.600
1989	1259.710	1092.610
1990	883.111	714.311
1991	1120.230	1041.110
1992	1676.200	1558.510
1993	1287.820	1040.240
1994	432.824	571.008
1995	5636.400	5590.020
1996	2396.310	2053.680
1997	2455.290	2364.490
1998	2092.720	1971.990
1999	785.816	675.024
2000	1470.280	1271.310
2001	1037.570	734.350
2002	822.160	711.583
2003	1107.250	1123.710
2004	1347.370	1190.360

Ranked Annual Peaks

Ranked Annual Peaks for Pre-Project and Mitigated. POC #2

Rank	Pre-Project	Mitigated
1	5636.4000	5590.0200
2	3043.9700	2982.0900
3	2455.2900	2364.4900
4	2439.3300	2239.5200
5	2396.3100	2053.6800
6	2112.9400	1971.9900
7	2092.7200	1783.0400
8	2039.0500	1657.5800
9	1676.2000	1558.5100
10	1560.7800	1460.4500
11	1517.3900	1271.3100
12	1470.2800	1253.9700
13	1347.3700	1190.3600
14	1323.9300	1173.4500
15	1287.8200	1123.7100
16	1259.7100	1092.6100
17	1225.6200	1054.6000
18	1156.6400	1041.1100
19	1138.6000	1040.2400
20	1120.2300	1021.8400
21	1117.8100	990.4190
22	1107.2500	988.6430
23	1097.7600	910.2700
24	1083.1600	907.6410
25	1068.6600	899.7300
26	1066.3100	866.0110
27	1056.7400	851.8190
28	1037.5700	778.0410
29	1012.4700	752.5420

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30	971.3790	734.3500
31	883.1110	714.3110
32	850.1880	711.5830
33	822.1600	687.5460
34	785.8160	675.0240
35	777.6970	652.7400
36	631.4460	578.5630
37	516.8600	571.0080
38	432.8240	511.2800
39	388.6490	441.6200
40	271.8850	291.0060

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Duration Flows

The Facility PASSED

Flow(cfs)	Predev	Mit	Percentage	Pass/Fail
278.1003	1832	1843	100	Pass
299.8779	1685	1621	96	Pass
321.6555	1536	1439	93	Pass
343.4331	1423	1298	91	Pass
365.2107	1294	1167	90	Pass
386.9884	1191	1072	90	Pass
408.7660	1077	977	90	Pass
430.5436	993	881	88	Pass
452.3212	915	812	88	Pass
474.0988	836	743	88	Pass
495.8764	776	683	88	Pass
517.6540	722	627	86	Pass
539.4316	677	577	85	Pass
561.2092	617	538	87	Pass
582.9868	573	485	84	Pass
604.7644	522	444	85	Pass
626.5421	487	407	83	Pass
648.3197	467	373	79	Pass
670.0973	446	346	77	Pass
691.8749	416	324	77	Pass
713.6525	389	304	78	Pass
735.4301	365	282	77	Pass
757.2077	333	266	79	Pass
778.9853	307	244	79	Pass
800.7629	286	228	79	Pass
822.5405	264	211	79	Pass
844.3182	243	194	79	Pass
866.0958	228	180	78	Pass
887.8734	216	167	77	Pass
909.6510	205	153	74	Pass
931.4286	185	138	74	Pass
953.2062	173	132	76	Pass
974.9838	160	120	75	Pass
996.7614	148	114	77	Pass
1018.5390	139	109	78	Pass
1040.3166	131	102	77	Pass
1062.0943	118	97	82	Pass
1083.8719	109	90	82	Pass
1105.6495	104	84	80	Pass
1127.4271	97	74	76	Pass
1149.2047	91	69	75	Pass
1170.9823	86	65	75	Pass
1192.7599	84	59	70	Pass
1214.5375	78	55	70	Pass
1236.3151	74	53	71	Pass
1258.0927	72	47	65	Pass
1279.8703	67	40	59	Pass
1301.6480	63	39	61	Pass
1323.4256	56	37	66	Pass
1345.2032	54	35	64	Pass
1366.9808	52	32	61	Pass
1388.7584	51	31	60	Pass
1410.5360	47	30	63	Pass

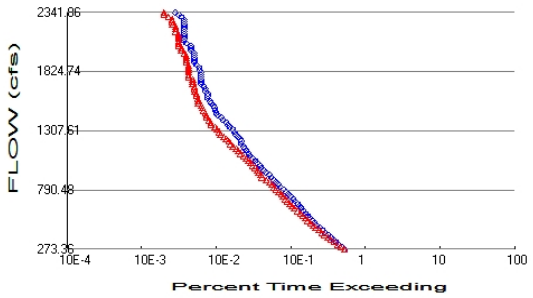
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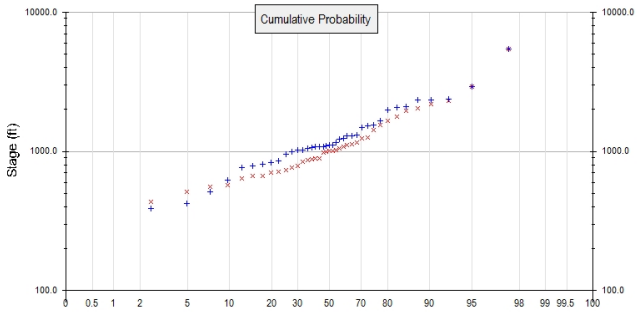
1432.3136	44	28	63	Pass
1454.0912	42	27	64	Pass
1475.8688	35	26	74	Pass
1497.6464	33	25	75	Pass
1519.4241	32	25	78	Pass
1541.2017	31	23	74	Pass
1562.9793	30	22	73	Pass
1584.7569	29	22	75	Pass
1606.5345	28	21	75	Pass
1628.3121	26	19	73	Pass
1650.0897	26	19	73	Pass
1671.8673	26	18	69	Pass
1693.6449	25	17	68	Pass
1715.4225	25	16	64	Pass
1737.2002	25	16	64	Pass
1758.9778	21	16	76	Pass
1780.7554	20	16	80	Pass
1802.5330	20	15	75	Pass
1824.3106	20	15	75	Pass
1846.0882	20	15	75	Pass
1867.8658	20	15	75	Pass
1889.6434	20	15	75	Pass
1911.4210	20	15	75	Pass
1933.1986	18	15	83	Pass
1954.9762	18	14	77	Pass
1976.7539	18	12	66	Pass
1998.5315	18	12	66	Pass
2020.3091	17	12	70	Pass
2042.0867	16	12	75	Pass
2063.8643	16	11	68	Pass
2085.6419	16	11	68	Pass
2107.4195	15	11	73	Pass
2129.1971	14	11	78	Pass
2150.9747	14	11	78	Pass
2172.7523	14	11	78	Pass
2194.5300	14	11	78	Pass
2216.3076	13	11	84	Pass
2238.0852	13	11	84	Pass
2259.8628	13	9	69	Pass
2281.6404	12	9	75	Pass
2303.4180	12	9	75	Pass
2325.1956	11	9	81	Pass
2346.9732	11	8	72	Pass
2368.7508	11	7	63	Pass
2390.5284	11	7	63	Pass
2412.3060	10	7	70	Pass
2434.0837	10	7	70	Pass

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POC 3





\+ Pre-Project x Mitigated

Pre-Project Landuse Totals for POC #3
Total Pervious Area: 4137.02
Total Impervious Area: 1069.92

Mitigated Landuse Totals for POC #3
Total Pervious Area: 3024.13
Total Impervious Area: 2074.3

Flow Frequency Method: Log Pearson Type III 17B

Flow Frequency Return Periods for Pre-Project. POC #3

Return Period	**Flow(cfs)**
2 year	1093.435854
5 year	1914.862683
10 year	2341.862927
25 year	3460.563659

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Flow Frequency Return Periods for Mitigated. POC #3

Return Period	**Flow(cfs)**
2 year	987.705488
5 year	1623.677317
10 year	2157.281951
25 year	3458.829268

Annual Peaks

Annual Peaks for Pre-Project and Mitigated. POC #3

Year	**Pre-Project**	**Mitigated**
1965	1027.780	884.354
1966	514.264	508.990
1967	1292.920	1235.760
1968	780.628	666.212
1969	1112.020	880.480
1970	1113.710	1007.870
1971	1248.000	871.057
1972	623.154	574.546
1973	1989.060	1768.510
1974	1550.390	1126.780
1975	1075.530	760.602
1976	386.699	434.795
1977	271.032	288.330
1978	2377.490	2173.660
1979	826.230	637.209

1980	1051.020	890.789
1981	1154.050	996.064
1982	1527.760	1416.550
1983	2068.260	1645.870
1984	1086.670	979.745
1985	1085.520	784.977
1986	2908.890	2902.570
1987	947.172	839.923
1988	997.703	1043.680
1989	1224.850	1079.390
1990	852.984	704.018
1991	1100.540	1027.500
1992	1651.050	1544.770
1993	1299.090	1011.290
1994	420.660	552.974
1995	5422.070	5436.640
1996	2331.300	2039.360
1997	2343.330	2297.620
1998	2083.170	1966.200
1999	766.291	663.253
2000	1479.380	1265.250
2001	1023.890	729.131
2002	809.452	708.208
2003	1071.430	1102.580
2004	1318.660	1164.470

Ranked Annual Peaks

Ranked Annual Peaks for Pre-Project and Mitigated. POC #3

Rank	Pre-Project	Mitigated
1	5422.0700	5436.6400
2	2908.8900	2902.5700
3	2377.4900	2297.6200
4	2343.3300	2173.6600
5	2331.3000	2039.3600
6	2083.1700	1966.2000
7	2068.2600	1768.5100
8	1989.0600	1645.8700
9	1651.0500	1544.7700
10	1550.3900	1416.5500
11	1527.7600	1265.2500
12	1479.3800	1235.7600
13	1318.6600	1164.4700
14	1299.0900	1126.7800
15	1292.9200	1102.5800
16	1248.0000	1079.3900
17	1224.8500	1043.6800
18	1154.0500	1027.5000
19	1113.7100	1011.2900
20	1112.0200	1007.8700
21	1100.5400	996.0640
22	1086.6700	979.7450
23	1085.5200	890.7890
24	1075.5300	884.3540
25	1071.4300	880.4800
26	1051.0200	871.0570
27	1027.7800	839.9230
28	1023.8900	784.9770
29	997.7030	760.6020

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30	947.1720	729.1310
31	852.9840	708.2080
32	826.2300	704.0180
33	809.4520	666.2120
34	780.6280	663.2530
35	766.2910	637.2090
36	623.1540	574.5460
37	514.2640	552.9740
38	420.6600	508.9900
39	386.6990	434.7950
40	271.0320	288.3300

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Duration Flows

The Facility PASSED

Flow(cfs)	Predev	Mit	Percentage	Pass/Fail
273.3590	1844	1834	99	Pass
294.2529	1703	1638	96	Pass
315.1469	1556	1479	95	Pass
336.0409	1415	1326	93	Pass
356.9349	1298	1198	92	Pass
377.8289	1210	1096	90	Pass
398.7228	1110	991	89	Pass
419.6168	1023	913	89	Pass
440.5108	937	831	88	Pass
461.4048	854	755	88	Pass
482.2988	779	699	89	Pass
503.1927	733	642	87	Pass
524.0867	682	595	87	Pass
544.9807	634	549	86	Pass
565.8747	597	508	85	Pass
586.7687	556	473	85	Pass
607.6626	520	430	82	Pass
628.5566	484	390	80	Pass
649.4506	457	361	78	Pass
670.3446	434	337	77	Pass
691.2386	402	316	78	Pass
712.1325	379	296	78	Pass
733.0265	346	276	79	Pass
753.9205	324	263	81	Pass
774.8145	306	240	78	Pass
795.7084	283	221	78	Pass
816.6024	257	210	81	Pass
837.4964	237	196	82	Pass
858.3904	221	184	83	Pass
879.2844	208	164	78	Pass
900.1783	196	145	73	Pass
921.0723	181	139	76	Pass
941.9663	163	131	80	Pass
962.8603	153	125	81	Pass
983.7543	143	118	82	Pass
1004.6482	136	107	78	Pass
1025.5422	124	102	82	Pass
1046.4362	117	95	81	Pass
1067.3302	108	88	81	Pass
1088.2242	100	81	81	Pass
1109.1181	95	74	77	Pass
1130.0121	89	69	77	Pass
1150.9061	85	65	76	Pass
1171.8001	81	59	72	Pass
1192.6941	77	55	71	Pass
1213.5880	76	52	68	Pass
1234.4820	74	48	64	Pass
1255.3760	68	44	64	Pass
1276.2700	64	40	62	Pass
1297.1640	62	39	62	Pass
1318.0579	59	36	61	Pass
1338.9519	53	34	64	Pass
1359.8459	50	30	60	Pass

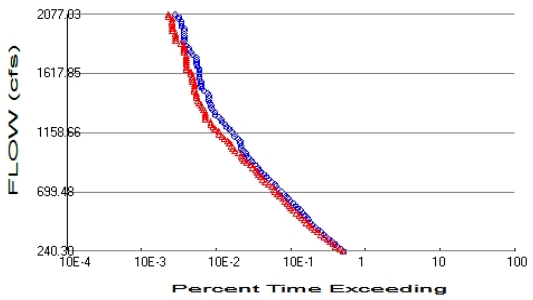
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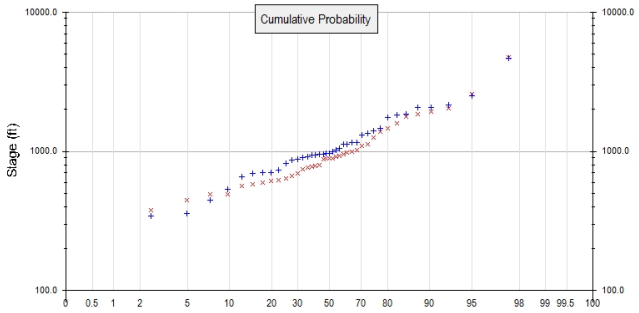
1380.7399	48	30	62	Pass
1401.6339	43	28	65	Pass
1422.5278	41	26	63	Pass
1443.4218	37	26	70	Pass
1464.3158	35	25	71	Pass
1485.2098	34	24	70	Pass
1506.1037	33	23	69	Pass
1526.9977	32	22	68	Pass
1547.8917	30	20	66	Pass
1568.7857	29	20	68	Pass
1589.6797	27	20	74	Pass
1610.5736	27	19	70	Pass
1631.4676	27	19	70	Pass
1652.3616	25	18	72	Pass
1673.2556	25	18	72	Pass
1694.1496	24	18	75	Pass
1715.0435	22	17	77	Pass
1735.9375	22	17	77	Pass
1756.8315	22	17	77	Pass
1777.7255	22	15	68	Pass
1798.6195	22	15	68	Pass
1819.5134	22	15	68	Pass
1840.4074	21	15	71	Pass
1861.3014	21	15	71	Pass
1882.1954	19	15	78	Pass
1903.0894	18	14	77	Pass
1923.9833	18	14	77	Pass
1944.8773	18	14	77	Pass
1965.7713	18	14	77	Pass
1986.6653	18	13	72	Pass
2007.5593	16	12	75	Pass
2028.4532	16	12	75	Pass
2049.3472	16	11	68	Pass
2070.2412	14	11	78	Pass
2091.1352	13	11	84	Pass
2112.0292	13	11	84	Pass
2132.9231	13	11	84	Pass
2153.8171	13	11	84	Pass
2174.7111	13	10	76	Pass
2195.6051	13	10	76	Pass
2216.4991	13	10	76	Pass
2237.3930	13	9	69	Pass
2258.2870	13	9	69	Pass
2279.1810	13	9	69	Pass
2300.0750	12	8	66	Pass
2320.9689	11	7	63	Pass
2341.8629	10	7	70	Pass

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POC 5





\+ Pre-Project x Mitigated

Pre-Project Landuse Totals for POC #5
Total Pervious Area: 3561.93
Total Impervious Area: 908.17

Mitigated Landuse Totals for POC #5
Total Pervious Area: 2591.35
Total Impervious Area: 1859.8

Flow Frequency Method: Log Pearson Type III 17B

Flow Frequency Return Periods for Pre-Project. POC #5

Return Period	**Flow(cfs)**
2 year	961.192415
5 year	1685.262195
10 year	2077.030488
25 year	2977.74561

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Flow Frequency Return Periods for Mitigated. POC #5

Return Period	**Flow(cfs)**
2 year	880.061317
5 year	1455.178049
10 year	1923.625854
25 year	3050.701951

Annual Peaks

Annual Peaks for Pre-Project and Mitigated. POC #5

Year	**Pre-Project**	**Mitigated**
1965	882.380	764.705
1966	443.528	448.642
1967	1126.100	1094.420
1968	691.515	594.466
1969	993.743	792.269
1970	970.321	893.884
1971	1119.410	776.834
1972	532.293	494.047
1973	1750.330	1599.130
1974	1402.700	993.830
1975	952.740	666.321
1976	340.851	376.945
1977	229.417	245.253
1978	2159.750	1932.910
1979	707.059	566.272

1980	915.433	789.662
1981	1017.410	891.424
1982	1337.730	1252.560
1983	1827.000	1472.750
1984	938.761	872.374
1985	958.529	689.465
1986	2512.540	2574.670
1987	819.720	741.263
1988	869.944	930.670
1989	1055.760	954.857
1990	729.854	614.259
1991	963.989	909.314
1992	1453.910	1392.700
1993	1154.880	888.133
1994	358.899	494.429
1995	4631.810	4743.260
1996	2062.850	1856.780
1997	2079.000	2039.160
1998	1843.650	1773.950
1999	659.923	581.623
2000	1318.690	1124.210
2001	895.785	636.168
2002	699.581	621.572
2003	938.200	977.044
2004	1149.420	1027.990

Ranked Annual Peaks

Ranked Annual Peaks for Pre-Project and Mitigated. POC #5

Rank	Pre-Project	Mitigated
1	4631.8100	4743.2600
2	2512.5400	2574.6700
3	2159.7500	2039.1600
4	2079.0000	1932.9100
5	2062.8500	1856.7800
6	1843.6500	1773.9500
7	1827.0000	1599.1300
8	1750.3300	1472.7500
9	1453.9100	1392.7000
10	1402.7000	1252.5600
11	1337.7300	1124.2100
12	1318.6900	1094.4200
13	1154.8800	1027.9900
14	1149.4200	993.8300
15	1126.1000	977.0440
16	1119.4100	954.8570
17	1055.7600	930.6700
18	1017.4100	909.3140
19	993.7430	893.8840
20	970.3210	891.4240
21	963.9890	888.1330
22	958.5290	872.3740
23	952.7400	792.2690
24	938.7610	789.6620
25	938.2000	776.8340
26	915.4330	764.7050
27	895.7850	741.2630
28	882.3800	689.4650
29	869.9440	666.3210

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30	819.7200	636.1680
31	729.8540	621.5720
32	707.0590	614.2590
33	699.5810	594.4660
34	691.5150	581.6230
35	659.9230	566.2720
36	532.2930	494.4290
37	443.5280	494.0470
38	358.8990	448.6420
39	340.8510	376.9450
40	229.4170	245.2530

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Duration Flows

The Facility PASSED

Flow(cfs)	Predev	Mit	Percentage	Pass/Fail
240.2981	1794	1757	97	Pass
258.8510	1635	1585	96	Pass
277.4038	1482	1415	95	Pass
295.9567	1368	1294	94	Pass
314.5095	1262	1182	93	Pass
333.0624	1152	1078	93	Pass
351.6152	1051	980	93	Pass
370.1681	970	884	91	Pass
388.7209	886	797	89	Pass
407.2738	809	734	90	Pass
425.8266	746	665	89	Pass
444.3795	690	624	90	Pass
462.9323	641	573	89	Pass
481.4852	609	537	88	Pass
500.0380	581	488	83	Pass
518.5909	539	459	85	Pass
537.1437	510	418	81	Pass
555.6966	476	381	80	Pass
574.2494	437	351	80	Pass
592.8023	409	336	82	Pass
611.3552	380	315	82	Pass
629.9080	352	292	82	Pass
648.4609	325	275	84	Pass
667.0137	306	251	82	Pass
685.5666	288	234	81	Pass
704.1194	262	218	83	Pass
722.6723	238	208	87	Pass
741.2251	224	197	87	Pass
759.7780	213	175	82	Pass
778.3308	196	161	82	Pass
796.8837	181	148	81	Pass
815.4365	166	139	83	Pass
833.9894	154	130	84	Pass
852.5422	139	124	89	Pass
871.0951	133	119	89	Pass
889.6479	128	110	85	Pass
908.2008	118	101	85	Pass
926.7536	108	90	83	Pass
945.3065	103	83	80	Pass
963.8593	96	80	83	Pass
982.4122	90	76	84	Pass
1000.9651	87	70	80	Pass
1019.5179	82	62	75	Pass
1038.0708	77	59	76	Pass
1056.6236	76	57	75	Pass
1075.1765	74	53	71	Pass
1093.7293	73	50	68	Pass
1112.2822	69	45	65	Pass
1130.8350	62	42	67	Pass
1149.3879	62	38	61	Pass
1167.9407	56	38	67	Pass
1186.4936	53	34	64	Pass
1205.0464	48	32	66	Pass

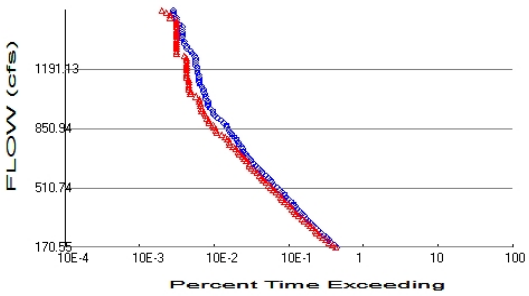
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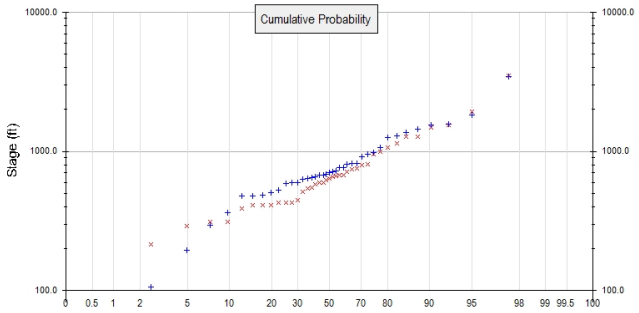
1223.5993	46	30	65	Pass
1242.1521	42	30	71	Pass
1260.7050	41	25	60	Pass
1279.2578	38	25	65	Pass
1297.8107	34	25	73	Pass
1316.3635	34	25	73	Pass
1334.9164	31	24	77	Pass
1353.4692	30	23	76	Pass
1372.0221	30	22	73	Pass
1390.5750	29	21	72	Pass
1409.1278	28	20	71	Pass
1427.6807	28	19	67	Pass
1446.2335	28	19	67	Pass
1464.7864	27	19	70	Pass
1483.3392	24	18	75	Pass
1501.8921	23	18	78	Pass
1520.4449	22	18	81	Pass
1538.9978	22	18	81	Pass
1557.5506	22	17	77	Pass
1576.1035	21	17	80	Pass
1594.6563	21	17	80	Pass
1613.2092	21	16	76	Pass
1631.7620	21	16	76	Pass
1650.3149	21	14	66	Pass
1668.8677	20	14	70	Pass
1687.4206	19	14	73	Pass
1705.9734	19	14	73	Pass
1724.5263	19	14	73	Pass
1743.0791	19	14	73	Pass
1761.6320	17	14	82	Pass
1780.1849	16	13	81	Pass
1798.7377	15	13	86	Pass
1817.2906	15	13	86	Pass
1835.8434	14	13	92	Pass
1854.3963	13	12	92	Pass
1872.9491	13	10	76	Pass
1891.5020	13	10	76	Pass
1910.0548	13	10	76	Pass
1928.6077	13	10	76	Pass
1947.1605	13	9	69	Pass
1965.7134	13	9	69	Pass
1984.2662	12	9	75	Pass
2002.8191	12	9	75	Pass
2021.3719	12	9	75	Pass
2039.9248	11	9	81	Pass
2058.4776	11	8	72	Pass
2077.0305	10	8	80	Pass

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POC 6





\+ Pre-Project x Mitigated

Pre-Project Landuse Totals for POC #6
Total Pervious Area: 3035.39
Total Impervious Area: 297.85

Mitigated Landuse Totals for POC #6
Total Pervious Area: 2049.6
Total Impervious Area: 1241.32

Flow Frequency Method: Log Pearson Type III 17B

Flow Frequency Return Periods for Pre-Project. POC #6

Return Period	**Flow(cfs)**
2 year	682.189341
5 year	1215.632439
10 year	1531.32439
25 year	2186.026341

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Flow Frequency Return Periods for Mitigated. POC #6

Return Period	**Flow(cfs)**
2 year	609.547244
5 year	1055.260415
10 year	1459.859268
25 year	2279.776829

Annual Peaks

Annual Peaks for Pre-Project and Mitigated. POC #6

Year	**Pre-Project**	**Mitigated**
1965	656.143	581.824
1966	294.402	310.954
1967	820.656	794.930
1968	477.695	429.079
1969	718.062	598.017
1970	709.596	637.473
1971	766.773	537.835
1972	361.503	289.258
1973	1258.760	1136.020
1974	958.147	749.785
1975	599.932	388.849
1976	105.495	214.580
1977	79.277	95.034
1978	1568.560	1484.830
1979	506.452	412.611

1980	671.642	549.391
1981	686.018	596.252
1982	979.692	951.973
1983	1299.360	1070.810
1984	678.543	621.654
1985	637.527	429.756
1986	1827.710	1932.930
1987	584.861	514.373
1988	593.667	654.246
1989	760.267	677.429
1990	527.275	426.782
1991	702.126	672.035
1992	1062.290	999.973
1993	810.700	664.877
1994	194.360	311.875
1995	3460.040	3513.010
1996	1442.220	1280.070
1997	1543.700	1542.780
1998	1364.690	1278.300
1999	486.710	412.676
2000	912.922	803.785
2001	629.107	446.530
2002	481.061	409.882
2003	651.712	717.762
2004	813.588	748.026

Ranked Annual Peaks

Ranked Annual Peaks for Pre-Project and Mitigated. POC #6

Rank	Pre-Project	Mitigated
1	3460.0400	3513.0100
2	1827.7100	1932.9300
3	1568.5600	1542.7800
4	1543.7000	1484.8300
5	1442.2200	1280.0700
6	1364.6900	1278.3000
7	1299.3600	1136.0200
8	1258.7600	1070.8100
9	1062.2900	999.9730
10	979.6920	951.9730
11	958.1470	803.7850
12	912.9220	794.9300
13	820.6560	749.7850
14	813.5880	748.0260
15	810.7000	717.7620
16	766.7730	677.4290
17	760.2670	672.0350
18	718.0620	664.8770
19	709.5960	654.2460
20	702.1260	637.4730
21	686.0180	621.6540
22	678.5430	598.0170
23	671.6420	596.2520
24	656.1430	581.8240
25	651.7120	549.3910
26	637.5270	537.8350
27	629.1070	514.3730
28	599.9320	446.5300
29	593.6670	429.7560

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30	584.8610	429.0790
31	527.2750	426.7820
32	506.4520	412.6760
33	486.7100	412.6110
34	481.0610	409.8820
35	477.6950	388.8490
36	361.5030	311.8750
37	294.4020	310.9540
38	194.3600	289.2580
39	105.4950	214.5800
40	79.2772	95.0343

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Duration Flows

The Facility PASSED

Flow(cfs)	Predev	Mit	Percentage	Pass/Fail
170.5473	1555	1499	96	Pass
184.2926	1421	1354	95	Pass
198.0378	1306	1230	94	Pass
211.7830	1209	1113	92	Pass
225.5282	1120	1003	89	Pass
239.2734	1036	911	87	Pass
253.0187	949	845	89	Pass
266.7639	880	795	90	Pass
280.5091	804	735	91	Pass
294.2543	750	676	90	Pass
307.9996	702	629	89	Pass
321.7448	643	575	89	Pass
335.4900	608	531	87	Pass
349.2352	565	475	84	Pass
362.9805	522	438	83	Pass
376.7257	487	412	84	Pass
390.4709	457	392	85	Pass
404.2161	432	365	84	Pass
417.9613	408	340	83	Pass
431.7066	378	308	81	Pass
445.4518	347	287	82	Pass
459.1970	329	274	83	Pass
472.9422	309	260	84	Pass
486.6875	284	237	83	Pass
500.4327	263	219	83	Pass
514.1779	242	205	84	Pass
527.9231	223	188	84	Pass
541.6684	210	173	82	Pass
555.4136	201	160	79	Pass
569.1588	187	151	80	Pass
582.9040	174	142	81	Pass
596.6492	155	132	85	Pass
610.3945	148	120	81	Pass
624.1397	138	111	80	Pass
637.8849	127	106	83	Pass
651.6301	118	103	87	Pass
665.3754	109	96	88	Pass
679.1206	103	89	86	Pass
692.8658	98	84	85	Pass
706.6110	94	78	82	Pass
720.3562	88	73	82	Pass
734.1015	84	68	80	Pass
747.8467	81	63	77	Pass
761.5919	75	57	76	Pass
775.3371	73	56	76	Pass
789.0824	70	53	75	Pass
802.8276	65	49	75	Pass
816.5728	61	44	72	Pass
830.3180	58	38	65	Pass
844.0633	55	37	67	Pass
857.8085	52	35	67	Pass
871.5537	51	34	66	Pass
885.2989	47	30	63	Pass

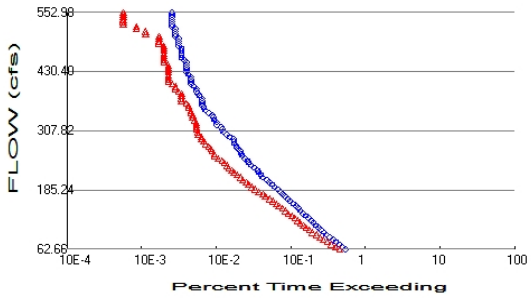
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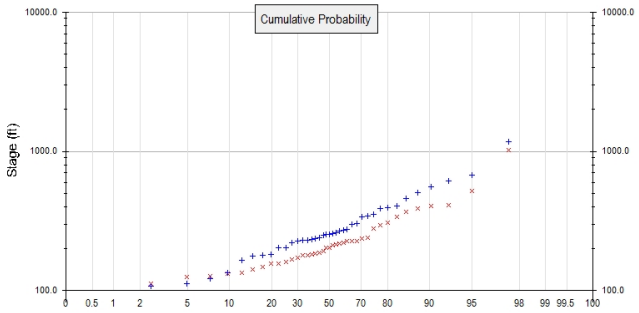
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912.7894	39	28	71	Pass
926.5346	36	27	75	Pass
940.2798	34	26	76	Pass
954.0250	34	24	70	Pass
967.7703	31	24	77	Pass
981.5155	29	23	79	Pass
995.2607	29	23	79	Pass
1009.0059	29	22	75	Pass
1022.7511	27	22	81	Pass
1036.4964	27	20	74	Pass
1050.2416	26	17	65	Pass
1063.9868	25	17	68	Pass
1077.7320	25	16	64	Pass
1091.4773	24	16	66	Pass
1105.2225	23	16	69	Pass
1118.9677	22	16	72	Pass
1132.7129	22	16	72	Pass
1146.4582	22	15	68	Pass
1160.2034	22	15	68	Pass
1173.9486	21	15	71	Pass
1187.6938	21	15	71	Pass
1201.4390	21	15	71	Pass
1215.1843	20	15	75	Pass
1228.9295	20	15	75	Pass
1242.6747	20	15	75	Pass
1256.4199	20	15	75	Pass
1270.1652	19	14	73	Pass
1283.9104	18	11	61	Pass
1297.6556	17	11	64	Pass
1311.4008	15	11	73	Pass
1325.1460	15	11	73	Pass
1338.8913	14	11	78	Pass
1352.6365	14	11	78	Pass
1366.3817	13	11	84	Pass
1380.1269	13	11	84	Pass
1393.8722	13	11	84	Pass
1407.6174	13	11	84	Pass
1421.3626	13	11	84	Pass
1435.1078	13	11	84	Pass
1448.8531	12	11	91	Pass
1462.5983	11	11	100	Pass
1476.3435	11	11	100	Pass
1490.0887	11	9	81	Pass
1503.8339	10	9	90	Pass
1517.5792	10	8	80	Pass
1531.3244	10	7	70	Pass

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POC 7





\+ Pre-Project x Mitigated

Pre-Project Landuse Totals for POC #7
Total Pervious Area: 735.38
Total Impervious Area: 297.85

Mitigated Landuse Totals for POC #7
Total Pervious Area: 278.76
Total Impervious Area: 617.11

Flow Frequency Method: Log Pearson Type III 17B

Flow Frequency Return Periods for Pre-Project. POC #7

Return Period	**Flow(cfs)**
2 year	250.628585
5 year	393.893366
10 year	552.983683
25 year	780.31839

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Flow Frequency Return Periods for Mitigated. POC #7

Return Period	**Flow(cfs)**
2 year	197.076707
5 year	303.889561
10 year	401.529024
25 year	626.149317

Annual Peaks

Annual Peaks for Pre-Project and Mitigated. POC #7

Year	**Pre-Project**	**Mitigated**
1965	231.705	179.454
1966	122.204	112.645
1967	261.671	235.839
1968	178.262	126.597
1969	266.484	185.593
1970	226.564	203.093
1971	304.666	181.570
1972	134.276	155.740
1973	395.876	340.512
1974	386.844	227.401
1975	270.074	168.551
1976	107.160	125.165
1977	79.389	83.550
1978	610.340	388.202
1979	181.922	157.188

1980	219.276	202.801
1981	257.469	226.474
1982	351.281	278.117
1983	403.766	305.879
1984	240.534	214.943
1985	248.352	161.178
1986	671.882	516.006
1987	204.370	178.537
1988	230.201	221.373
1989	253.019	212.889
1990	203.534	133.055
1991	236.771	186.408
1992	338.650	296.816
1993	299.456	191.625
1994	112.422	148.614
1995	1165.870	1017.770
1996	502.747	403.380
1997	559.961	408.899
1998	458.546	366.970
1999	165.935	135.128
2000	342.871	238.481
2001	229.417	142.221
2002	176.497	171.005
2003	253.443	217.689
2004	275.061	227.276

Ranked Annual Peaks

Ranked Annual Peaks for Pre-Project and Mitigated. POC #7

Rank	Pre-Project	Mitigated
1	1165.8700	1017.7700
2	671.8820	516.0060
3	610.3400	408.8990
4	559.9610	403.3800
5	502.7470	388.2020
6	458.5460	366.9700
7	403.7660	340.5120
8	395.8760	305.8790
9	386.8440	296.8160
10	351.2810	278.1170
11	342.8710	238.4810
12	338.6500	235.8390
13	304.6660	227.4010
14	299.4560	227.2760
15	275.0610	226.4740
16	270.0740	221.3730
17	266.4840	217.6890
18	261.6710	214.9430
19	257.4690	212.8890
20	253.4430	203.0930
21	253.0190	202.8010
22	248.3520	191.6250
23	240.5340	186.4080
24	236.7710	185.5930
25	231.7050	181.5700
26	230.2010	179.4540
27	229.4170	178.5370
28	226.5640	171.0050
29	219.2760	168.5510

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30	204.3700	161.1780
31	203.5340	157.1880
32	181.9220	155.7400
33	178.2620	148.6140
34	176.4970	142.2210
35	165.9350	135.1280
36	134.2760	133.0550
37	122.2040	126.5970
38	112.4220	125.1650
39	107.1600	112.6450
40	79.3886	83.5499

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Duration Flows

The Facility PASSED

Flow(cfs)	Predev	Mit	Percentage	Pass/Fail
62.6571	1874	1592	84	Pass
67.6099	1707	1400	82	Pass
72.5627	1563	1230	78	Pass
77.5155	1420	1086	76	Pass
82.4683	1289	960	74	Pass
87.4211	1168	856	73	Pass
92.3739	1063	777	73	Pass
97.3267	973	687	70	Pass
102.2795	893	621	69	Pass
107.2323	822	560	68	Pass
112.1851	758	519	68	Pass
117.1379	707	472	66	Pass
122.0907	660	436	66	Pass
127.0435	600	397	66	Pass
131.9963	556	363	65	Pass
136.9490	514	325	63	Pass
141.9018	471	297	63	Pass
146.8546	445	272	61	Pass
151.8074	413	242	58	Pass
156.7602	380	224	58	Pass
161.7130	344	202	58	Pass
166.6658	319	184	57	Pass
171.6186	291	160	54	Pass
176.5714	274	150	54	Pass
181.5242	257	130	50	Pass
186.4770	235	117	49	Pass
191.4298	214	105	49	Pass
196.3826	197	95	48	Pass
201.3354	181	89	49	Pass
206.2882	167	79	47	Pass
211.2409	147	75	51	Pass
216.1937	139	67	48	Pass
221.1465	131	61	46	Pass
226.0993	126	57	45	Pass
231.0521	114	52	45	Pass
236.0049	105	49	46	Pass
240.9577	95	45	47	Pass
245.9105	92	42	45	Pass
250.8633	84	37	44	Pass
255.8161	79	34	43	Pass
260.7689	77	33	42	Pass
265.7217	74	31	41	Pass
270.6745	69	30	43	Pass
275.6273	65	28	43	Pass
280.5801	62	25	40	Pass
285.5328	61	24	39	Pass
290.4856	60	22	36	Pass
295.4384	53	22	41	Pass
300.3912	49	20	40	Pass
305.3440	44	20	45	Pass
310.2968	42	19	45	Pass
315.2496	41	19	46	Pass
320.2024	36	19	52	Pass

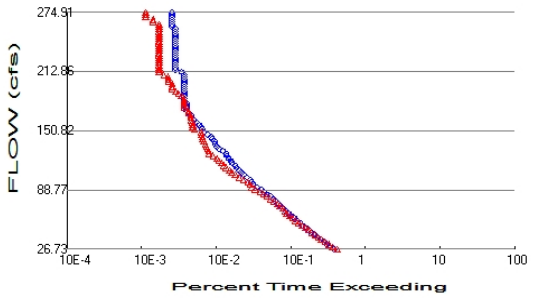
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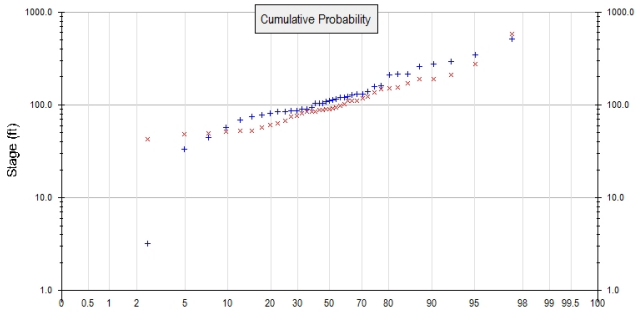
325.1552	36	19	52	Pass
330.1080	33	18	54	Pass
335.0608	32	17	53	Pass
340.0136	31	17	54	Pass
344.9664	28	16	57	Pass
349.9192	25	16	64	Pass
354.8720	24	15	62	Pass
359.8247	23	15	65	Pass
364.7775	23	14	60	Pass
369.7303	23	12	52	Pass
374.6831	23	12	52	Pass
379.6359	21	12	57	Pass
384.5887	20	12	60	Pass
389.5415	19	11	57	Pass
394.4943	19	10	52	Pass
399.4471	18	10	55	Pass
404.3999	16	9	56	Pass
409.3527	16	8	50	Pass
414.3055	16	8	50	Pass
419.2583	16	8	50	Pass
424.2111	15	8	53	Pass
429.1639	14	8	57	Pass
434.1166	14	8	57	Pass
439.0694	14	8	57	Pass
444.0222	14	8	57	Pass
448.9750	14	7	50	Pass
453.9278	13	7	53	Pass
458.8806	12	7	58	Pass
463.8334	12	7	58	Pass
468.7862	12	7	58	Pass
473.7390	12	7	58	Pass
478.6918	12	7	58	Pass
483.6446	11	7	63	Pass
488.5974	11	6	54	Pass
493.5502	11	6	54	Pass
498.5030	11	6	54	Pass
503.4557	10	6	60	Pass
508.4085	10	4	40	Pass
513.3613	10	4	40	Pass
518.3141	10	3	30	Pass
523.2669	9	3	33	Pass
528.2197	9	2	22	Pass
533.1725	9	2	22	Pass
538.1253	9	2	22	Pass
543.0781	9	2	22	Pass
548.0309	9	2	22	Pass
552.9837	9	2	22	Pass

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POC 8





\+ Pre-Project x Mitigated

Pre-Project Landuse Totals for POC #8
Total Pervious Area: 430.61
Total Impervious Area: 8.93

Mitigated Landuse Totals for POC #8
Total Pervious Area: 142.59
Total Impervious Area: 325.6

Flow Frequency Method: Log Pearson Type III 17B

Flow Frequency Return Periods for Pre-Project. POC #8

Return Period	**Flow(cfs)**
2 year	106.918317
5 year	200.295171
10 year	274.905854
25 year	384.138439

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Flow Frequency Return Periods for Mitigated. POC #8

Return Period	**Flow(cfs)**
2 year	89.17429
5 year	151.206268
10 year	190.509854
25 year	342.98339

Annual Peaks

Annual Peaks for Pre-Project and Mitigated. POC #8

Year	**Pre-Project**	**Mitigated**
1965	115.082	88.342
1966	44.934	52.319
1967	122.310	117.478
1968	75.065	57.116
1969	119.475	84.485
1970	104.274	97.403
1971	120.108	85.108
1972	57.426	48.097
1973	214.681	152.968
1974	160.310	88.728
1975	81.695	42.777
1976	3.234	49.487
1977	2.843	8.992
1978	293.905	189.184
1979	85.857	67.736

1980	90.470	90.327
1981	103.632	91.696
1982	159.029	137.052
1983	213.923	151.669
1984	110.800	102.235
1985	89.502	60.701
1986	348.390	277.495
1987	84.079	81.799
1988	94.377	110.391
1989	131.331	89.643
1990	84.369	52.416
1991	104.651	94.807
1992	138.007	149.561
1993	112.940	84.294
1994	33.105	75.439
1995	511.244	575.831
1996	259.216	172.325
1997	277.085	210.542
1998	211.541	190.694
1999	68.973	63.457
2000	130.866	122.909
2001	86.777	51.192
2002	77.278	75.978
2003	109.299	111.080
2004	129.045	110.917

Ranked Annual Peaks

Ranked Annual Peaks for Pre-Project and Mitigated. POC #8

Rank	Pre-Project	Mitigated
1	511.2440	575.8310
2	348.3900	277.4950
3	293.9050	210.5420
4	277.0850	190.6940
5	259.2160	189.1840
6	214.6810	172.3250
7	213.9230	152.9680
8	211.5410	151.6690
9	160.3100	149.5610
10	159.0290	137.0520
11	138.0070	122.9090
12	131.3310	117.4780
13	130.8660	111.0800
14	129.0450	110.9170
15	122.3100	110.3910
16	120.1080	102.2350
17	119.4750	97.4032
18	115.0820	94.8069
19	112.9400	91.6962
20	110.8000	90.3272
21	109.2990	89.6430
22	104.6510	88.7279
23	104.2740	88.3418
24	103.6320	85.1084
25	94.3773	84.4846
26	90.4699	84.2935
27	89.5024	81.7988
28	86.7765	75.9775
29	85.8570	75.4389

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30	84.3694	67.7361
31	84.0788	63.4569
32	81.6951	60.7008
33	77.2779	57.1156
34	75.0648	52.4161
35	68.9727	52.3192
36	57.4260	51.1919
37	44.9343	49.4865
38	33.1053	48.0968
39	3.2339	42.7772
40	2.8427	8.9924

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Duration Flows

The Facility PASSED

Flow(cfs)	Predev	Mit	Percentage	Pass/Fail
26.7296	1344	1458	108	Pass
29.2364	1189	1266	106	Pass
31.7432	1074	1129	105	Pass
34.2501	988	1006	101	Pass
36.7569	881	905	102	Pass
39.2637	801	819	102	Pass
41.7706	735	738	100	Pass
44.2774	666	669	100	Pass
46.7842	608	604	99	Pass
49.2911	555	549	98	Pass
51.7979	503	496	98	Pass
54.3047	466	445	95	Pass
56.8116	431	408	94	Pass
59.3184	393	373	94	Pass
61.8252	355	339	95	Pass
64.3320	330	310	93	Pass
66.8389	300	293	97	Pass
69.3457	273	274	100	Pass
71.8525	255	250	98	Pass
74.3594	240	231	96	Pass
76.8662	218	208	95	Pass
79.3730	205	187	91	Pass
81.8799	189	167	88	Pass
84.3867	165	152	92	Pass
86.8935	151	136	90	Pass
89.4004	141	118	83	Pass
91.9072	124	106	85	Pass
94.4140	109	100	91	Pass
96.9208	103	93	90	Pass
99.4277	101	81	80	Pass
101.9345	90	72	80	Pass
104.4413	81	63	77	Pass
106.9482	76	57	75	Pass
109.4550	72	53	73	Pass
111.9618	67	48	71	Pass
114.4687	63	44	69	Pass
116.9755	57	41	71	Pass
119.4823	55	38	69	Pass
121.9892	51	36	70	Pass
124.4960	49	32	65	Pass
127.0028	48	28	58	Pass
129.5097	43	28	65	Pass
132.0165	38	27	71	Pass
134.5233	36	26	72	Pass
137.0301	34	25	73	Pass
139.5370	33	24	72	Pass
142.0438	31	23	74	Pass
144.5506	30	23	76	Pass
147.0575	27	22	81	Pass
149.5643	24	22	91	Pass
152.0711	23	18	78	Pass
154.5780	22	17	77	Pass
157.0848	21	17	80	Pass

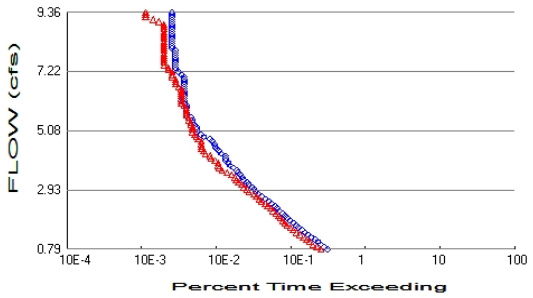
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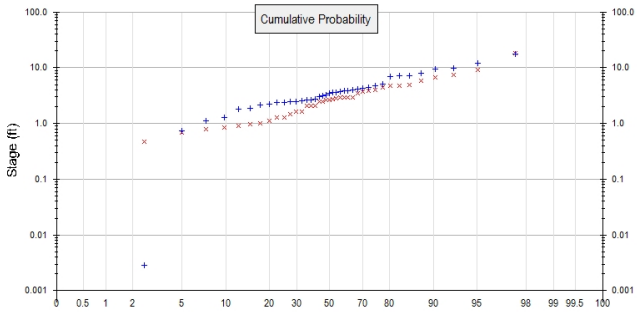
159.5916	19	17	89	Pass
162.0985	18	16	88	Pass
164.6053	16	16	100	Pass
167.1121	16	16	100	Pass
169.6189	15	15	100	Pass
172.1258	14	15	107	Pass
174.6326	14	13	92	Pass
177.1394	14	13	92	Pass
179.6463	14	13	92	Pass
182.1531	13	13	100	Pass
184.6599	13	13	100	Pass
187.1668	13	12	92	Pass
189.6736	13	11	84	Pass
192.1804	13	10	76	Pass
194.6873	13	9	69	Pass
197.1941	13	9	69	Pass
199.7009	13	9	69	Pass
202.2078	13	8	61	Pass
204.7146	13	8	61	Pass
207.2214	13	8	61	Pass
209.7282	13	7	53	Pass
212.2351	12	6	50	Pass
214.7419	10	6	60	Pass
217.2487	10	6	60	Pass
219.7556	10	6	60	Pass
222.2624	10	6	60	Pass
224.7692	10	6	60	Pass
227.2761	10	6	60	Pass
229.7829	10	6	60	Pass
232.2897	10	6	60	Pass
234.7966	10	6	60	Pass
237.3034	10	6	60	Pass
239.8102	10	6	60	Pass
242.3171	10	6	60	Pass
244.8239	10	6	60	Pass
247.3307	10	6	60	Pass
249.8375	10	6	60	Pass
252.3444	10	6	60	Pass
254.8512	10	6	60	Pass
257.3580	10	6	60	Pass
259.8649	9	6	66	Pass
262.3717	9	6	66	Pass
264.8785	9	5	55	Pass
267.3854	9	5	55	Pass
269.8922	9	4	44	Pass
272.3990	9	4	44	Pass
274.9059	9	4	44	Pass

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POC 9





+ Pre-Project x Mitigated

Pre-Project Landuse Totals for POC #9
Total Pervious Area: 15.68
Total Impervious Area: 0

Mitigated Landuse Totals for POC #9
Total Pervious Area: 13.94
Total Impervious Area: 3.08

Flow Frequency Method: Log Pearson Type III 17B

Flow Frequency Return Periods for Pre-Project. POC #9

Return Period	**Flow(cfs)**
2 year	3.162086
5 year	6.599494
10 year	9.359542
25 year	13.355822

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Flow Frequency Return Periods for Mitigated. POC #9

Return Period	**Flow(cfs)**
2 year	2.54053
5 year	4.670228
10 year	6.602012
25 year	11.170896

Annual Peaks

Annual Peaks for Pre-Project and Mitigated. POC #9

Year	**Pre-Project**	**Mitigated**
1965	3.650	2.747
1966	1.115	0.693
1967	3.909	3.690
1968	2.159	1.267
1969	3.943	2.642
1970	3.050	2.920
1971	3.843	2.456
1972	1.263	1.022
1973	7.044	4.756
1974	5.019	2.446
1975	2.357	0.897
1976	0.003	0.471
1977	0.003	0.088
1978	9.899	5.897
1979	2.684	1.641

1980	2.734	2.096
1981	2.677	2.077
1982	4.791	4.366
1983	7.156	4.981
1984	3.454	2.902
1985	2.199	1.660
1986	12.076	9.158
1987	2.457	1.479
1988	2.549	2.805
1989	4.193	2.100
1990	2.410	0.853
1991	3.226	2.943
1992	4.450	4.794
1993	3.548	2.962
1994	0.726	0.972
1995	17.906	18.329
1996	8.026	4.058
1997	9.545	7.376
1998	7.279	6.700
1999	1.877	1.283
2000	4.231	3.913
2001	2.445	1.100
2002	1.802	0.800
2003	3.101	2.629
2004	3.786	3.512

Ranked Annual Peaks

Ranked Annual Peaks for Pre-Project and Mitigated. POC #9

Rank	Pre-Project	Mitigated
1	17.9063	18.3285
2	12.0760	9.1578
3	9.8989	7.3757
4	9.5447	6.6999
5	8.0261	5.8972
6	7.2794	4.9808
7	7.1561	4.7944
8	7.0439	4.7557
9	5.0194	4.3663
10	4.7905	4.0584
11	4.4499	3.9129
12	4.2313	3.6900
13	4.1925	3.5119
14	3.9432	2.9618
15	3.9090	2.9433
16	3.8427	2.9198
17	3.7864	2.9023
18	3.6497	2.8046
19	3.5482	2.7468
20	3.4544	2.6422
21	3.2261	2.6291
22	3.1011	2.4562
23	3.0502	2.4465
24	2.7341	2.0999
25	2.6844	2.0958
26	2.6767	2.0772
27	2.5493	1.6601
28	2.4571	1.6408
29	2.4451	1.4789

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30	2.4098	1.2827
31	2.3572	1.2666
32	2.1994	1.0997
33	2.1593	1.0224
34	1.8771	0.9720
35	1.8022	0.8972
36	1.2632	0.8531
37	1.1153	0.8002
38	0.7264	0.6933
39	0.0029	0.4708
40	0.0028	0.0884

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Duration Flows

The Facility PASSED

Flow(cfs)	Predev	Mit	Percentage	Pass/Fail
0.7905	1092	895	81	Pass
0.8771	988	781	79	Pass
0.9636	891	691	77	Pass
1.0502	815	622	76	Pass
1.1367	737	566	76	Pass
1.2233	660	516	78	Pass
1.3099	597	465	77	Pass
1.3964	542	417	76	Pass
1.4830	494	374	75	Pass
1.5695	444	348	78	Pass
1.6561	410	314	76	Pass
1.7426	378	290	76	Pass
1.8292	342	273	79	Pass
1.9157	315	254	80	Pass
2.0023	290	239	82	Pass
2.0889	271	221	81	Pass
2.1754	249	203	81	Pass
2.2620	229	188	82	Pass
2.3485	213	172	80	Pass
2.4351	196	161	82	Pass
2.5216	178	142	79	Pass
2.6082	160	132	82	Pass
2.6947	142	120	84	Pass
2.7813	129	112	86	Pass
2.8679	118	97	82	Pass
2.9544	114	91	79	Pass
3.0410	106	82	77	Pass
3.1275	95	77	81	Pass
3.2141	91	70	76	Pass
3.3006	81	65	80	Pass
3.3872	79	62	78	Pass
3.4738	74	56	75	Pass
3.5603	69	49	71	Pass
3.6469	66	42	63	Pass
3.7334	60	39	65	Pass
3.8200	54	37	68	Pass
3.9065	51	37	72	Pass
3.9931	47	34	72	Pass
4.0796	47	30	63	Pass
4.1662	47	29	61	Pass
4.2528	41	25	60	Pass
4.3393	38	24	63	Pass
4.4259	36	22	61	Pass
4.5124	34	22	64	Pass
4.5990	33	22	66	Pass
4.6855	31	22	70	Pass
4.7721	29	20	68	Pass
4.8586	24	19	79	Pass
4.9452	22	18	81	Pass
5.0318	19	17	89	Pass
5.1183	19	17	89	Pass
5.2049	19	17	89	Pass
5.2914	18	16	88	Pass

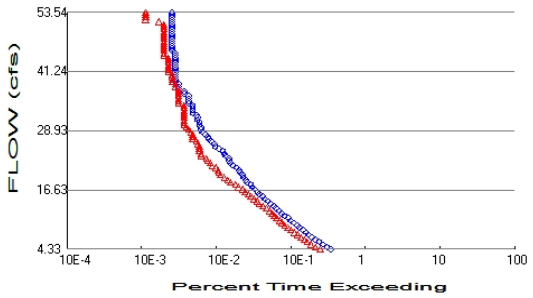
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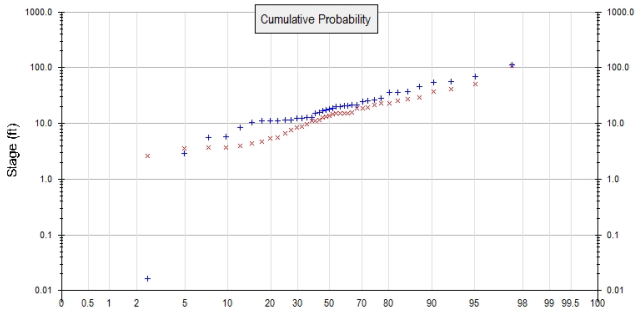
5.3780	17	16	94	Pass
5.4645	17	15	88	Pass
5.5511	16	15	93	Pass
5.6376	14	14	100	Pass
5.7242	14	14	100	Pass
5.8108	14	14	100	Pass
5.8973	14	14	100	Pass
5.9839	14	13	92	Pass
6.0704	13	12	92	Pass
6.1570	13	12	92	Pass
6.2435	13	12	92	Pass
6.3301	13	12	92	Pass
6.4166	13	12	92	Pass
6.5032	13	12	92	Pass
6.5898	13	12	92	Pass
6.6763	13	11	84	Pass
6.7629	13	10	76	Pass
6.8494	13	10	76	Pass
6.9360	13	10	76	Pass
7.0225	13	9	69	Pass
7.1091	12	9	75	Pass
7.1956	11	9	81	Pass
7.2822	10	8	80	Pass
7.3688	10	8	80	Pass
7.4553	10	7	70	Pass
7.5419	10	7	70	Pass
7.6284	10	7	70	Pass
7.7150	10	7	70	Pass
7.8015	10	7	70	Pass
7.8881	10	7	70	Pass
7.9746	10	7	70	Pass
8.0612	9	7	77	Pass
8.1478	9	7	77	Pass
8.2343	9	7	77	Pass
8.3209	9	7	77	Pass
8.4074	9	7	77	Pass
8.4940	9	7	77	Pass
8.5805	9	7	77	Pass
8.6671	9	7	77	Pass
8.7537	9	7	77	Pass
8.8402	9	7	77	Pass
8.9268	9	7	77	Pass
9.0133	9	6	66	Pass
9.0999	9	5	55	Pass
9.1864	9	4	44	Pass
9.2730	9	4	44	Pass
9.3595	9	4	44	Pass

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POC 10





\+ Pre-Project x Mitigated

Pre-Project Landuse Totals for POC #10
Total Pervious Area: 107.26
Total Impervious Area: 0

Mitigated Landuse Totals for POC #10
Total Pervious Area: 78.51
Total Impervious Area: 21.86

Flow Frequency Method: Log Pearson Type III 17B

Flow Frequency Return Periods for Pre-Project. POC #10

Return Period	**Flow(cfs)**
2 year	17.311561
5 year	34.566117
10 year	53.540612
25 year	79.828537

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Flow Frequency Return Periods for Mitigated. POC #10

Return Period	**Flow(cfs)**
2 year	12.98791
5 year	23.358232
10 year	36.698783
25 year	64.472044

Annual Peaks

Annual Peaks for Pre-Project and Mitigated. POC #10

Year	**Pre-Project**	**Mitigated**
1965	18.014	14.685
1966	5.849	3.567
1967	20.961	19.688
1968	11.146	5.401
1969	21.423	13.771
1970	15.628	15.057
1971	20.945	13.135
1972	5.546	5.685
1973	36.581	23.298
1974	25.915	11.561
1975	12.557	3.643
1976	0.016	2.601
1977	0.015	0.581
1978	54.677	29.414
1979	12.997	8.566

1980	16.888	11.267
1981	12.585	11.131
1982	26.249	23.375
1983	36.448	27.114
1984	17.756	15.715
1985	11.164	8.834
1986	70.445	51.706
1987	11.259	7.577
1988	11.658	15.072
1989	20.023	9.654
1990	11.732	3.656
1991	18.716	15.070
1992	27.876	25.725
1993	21.596	15.018
1994	2.955	4.763
1995	113.194	109.861
1996	37.318	18.922
1997	55.628	41.011
1998	45.362	37.711
1999	10.557	6.690
2000	24.926	21.360
2001	12.997	4.458
2002	8.358	3.915
2003	15.472	12.848
2004	20.186	18.541

Ranked Annual Peaks

Ranked Annual Peaks for Pre-Project and Mitigated. POC #10

Rank	Pre-Project	Mitigated
1	113.1940	109.8610
2	70.4445	51.7064
3	55.6284	41.0105
4	54.6766	37.7106
5	45.3615	29.4137
6	37.3176	27.1136
7	36.5808	25.7254
8	36.4476	23.3752
9	27.8764	23.2979
10	26.2486	21.3603
11	25.9148	19.6877
12	24.9263	18.9224
13	21.5958	18.5412
14	21.4232	15.7151
15	20.9609	15.0721
16	20.9452	15.0696
17	20.1859	15.0571
18	20.0234	15.0176
19	18.7158	14.6847
20	18.0143	13.7705
21	17.7563	13.1345
22	16.8880	12.8483
23	15.6279	11.5607
24	15.4715	11.2674
25	12.9972	11.1306
26	12.9965	9.6545
27	12.5849	8.8344
28	12.5566	8.5656
29	11.7315	7.5768

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30	11.6584	6.6901
31	11.2594	5.6852
32	11.1636	5.4007
33	11.1460	4.7627
34	10.5571	4.4582
35	8.3582	3.9149
36	5.8486	3.6555
37	5.5465	3.6435
38	2.9545	3.5673
39	0.0162	2.6009
40	0.0147	0.5806

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Duration Flows

The Facility PASSED

Flow(cfs)	Predev	Mit	Percentage	Pass/Fail
4.3279	1202	870	72	Pass
4.8250	1077	751	69	Pass
5.3221	957	653	68	Pass
5.8192	839	584	69	Pass
6.3163	747	528	70	Pass
6.8134	678	476	70	Pass
7.3105	610	432	70	Pass
7.8076	561	392	69	Pass
8.3047	509	350	68	Pass
8.8018	459	318	69	Pass
9.2989	424	290	68	Pass
9.7960	386	270	69	Pass
10.2931	348	250	71	Pass
10.7902	323	227	70	Pass
11.2873	289	211	73	Pass
11.7844	266	197	74	Pass
12.2815	246	183	74	Pass
12.7786	224	165	73	Pass
13.2757	206	148	71	Pass
13.7728	189	132	69	Pass
14.2699	174	124	71	Pass
14.7670	158	112	70	Pass
15.2641	147	102	69	Pass
15.7611	134	94	70	Pass
16.2582	126	85	67	Pass
16.7553	116	79	68	Pass
17.2524	107	70	65	Pass
17.7495	102	64	62	Pass
18.2466	91	54	59	Pass
18.7437	87	50	57	Pass
19.2408	82	45	54	Pass
19.7379	79	40	50	Pass
20.2350	73	38	52	Pass
20.7321	72	37	51	Pass
21.2292	67	35	52	Pass
21.7263	59	31	52	Pass
22.2234	54	29	53	Pass
22.7205	52	27	51	Pass
23.2176	52	26	50	Pass
23.7147	47	22	46	Pass
24.2118	45	22	48	Pass
24.7089	43	21	48	Pass
25.2060	38	21	55	Pass
25.7031	34	21	61	Pass
26.2002	33	20	60	Pass
26.6973	30	19	63	Pass
27.1944	28	17	60	Pass
27.6915	27	17	62	Pass
28.1886	25	17	68	Pass
28.6857	23	16	69	Pass
29.1828	22	15	68	Pass
29.6799	22	14	63	Pass
30.1770	21	13	61	Pass

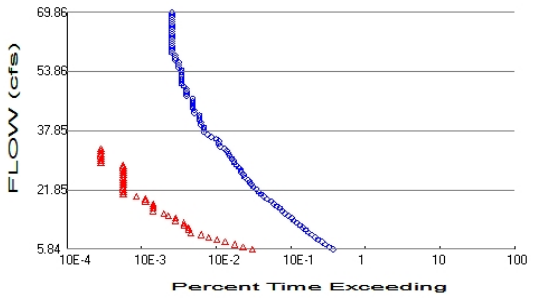
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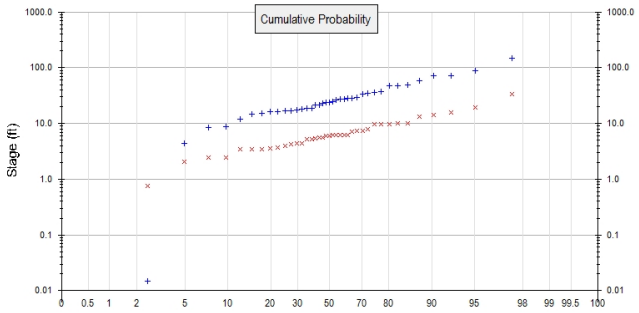
30.6741	21	13	61	Pass
31.1712	20	13	65	Pass
31.6683	20	13	65	Pass
32.1654	19	13	68	Pass
32.6625	17	13	76	Pass
33.1596	17	13	76	Pass
33.6567	17	13	76	Pass
34.1538	17	13	76	Pass
34.6509	15	11	73	Pass
35.1480	15	11	73	Pass
35.6451	15	11	73	Pass
36.1422	15	11	73	Pass
36.6393	13	11	84	Pass
37.1364	13	11	84	Pass
37.6335	11	11	100	Pass
38.1306	11	10	90	Pass
38.6277	11	10	90	Pass
39.1248	10	9	90	Pass
39.6219	10	9	90	Pass
40.1190	10	9	90	Pass
40.6161	10	9	90	Pass
41.1132	10	8	80	Pass
41.6103	10	8	80	Pass
42.1074	10	8	80	Pass
42.6045	10	8	80	Pass
43.1015	10	8	80	Pass
43.5986	10	8	80	Pass
44.0957	10	8	80	Pass
44.5928	10	7	70	Pass
45.0899	10	7	70	Pass
45.5870	9	7	77	Pass
46.0841	9	7	77	Pass
46.5812	9	7	77	Pass
47.0783	9	7	77	Pass
47.5754	9	7	77	Pass
48.0725	9	7	77	Pass
48.5696	9	7	77	Pass
49.0667	9	7	77	Pass
49.5638	9	7	77	Pass
50.0609	9	7	77	Pass
50.5580	9	7	77	Pass
51.0551	9	7	77	Pass
51.5522	9	6	66	Pass
52.0493	9	4	44	Pass
52.5464	9	4	44	Pass
53.0435	9	4	44	Pass
53.5406	9	4	44	Pass

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POC 11





\+ Pre-Project x Mitigated

Pre-Project Landuse Totals for POC #11
Total Pervious Area: 137.95
Total Impervious Area: 0

Mitigated Landuse Totals for POC #11
Total Pervious Area: 26.77
Total Impervious Area: 3.62

Flow Frequency Method: Log Pearson Type III 17B

Flow Frequency Return Periods for Pre-Project. POC #11

Return Period	**Flow(cfs)**
2 year	23.375039
5 year	44.823759
10 year	69.858924
25 year	102.673429

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Flow Frequency Return Periods for Mitigated. POC #11

Return Period	**Flow(cfs)**
2 year	5.78647
5 year	9.720834
10 year	14.29279
25 year	22.655615

Annual Peaks

Annual Peaks for Pre-Project and Mitigated. POC #11

Year	**Pre-Project**	**Mitigated**
1965	23.802	5.583
1966	8.518	2.408
1967	27.694	7.325
1968	15.379	3.951
1969	28.576	5.959
1970	21.347	6.276
1971	28.819	5.622
1972	8.843	2.410
1973	47.002	9.696
1974	35.725	7.445
1975	18.202	3.528
1976	0.015	0.749
1977	0.014	0.096
1978	71.504	14.421
1979	17.263	3.754

1980	22.969	5.227
1981	19.036	5.150
1982	35.212	9.728
1983	46.917	9.618
1984	23.866	6.168
1985	16.937	4.406
1986	89.765	19.593
1987	16.302	4.438
1988	16.688	6.016
1989	26.057	5.419
1990	16.473	3.466
1991	24.522	6.196
1992	37.380	9.926
1993	29.779	6.180
1994	4.385	2.036
1995	148.569	33.544
1996	49.714	10.162
1997	71.468	15.985
1998	58.274	13.367
1999	14.744	3.490
2000	34.124	7.866
2001	18.596	4.297
2002	12.090	3.466
2003	21.476	6.238
2004	27.095	7.092

Ranked Annual Peaks

Ranked Annual Peaks for Pre-Project and Mitigated. POC #11

Rank	Pre-Project	Mitigated
1	148.5690	33.5442
2	89.7653	19.5932
3	71.5043	15.9852
4	71.4679	14.4214
5	58.2743	13.3668
6	49.7143	10.1620
7	47.0024	9.9262
8	46.9174	9.7278
9	37.3797	9.6960
10	35.7247	9.6181
11	35.2119	7.8658
12	34.1242	7.4446
13	29.7794	7.3252
14	28.8194	7.0924
15	28.5761	6.2763
16	27.6943	6.2380
17	27.0946	6.1964
18	26.0573	6.1803
19	24.5218	6.1680
20	23.8661	6.0160
21	23.8018	5.9591
22	22.9686	5.6221
23	21.4764	5.5829
24	21.3466	5.4191
25	19.0360	5.2275
26	18.5960	5.1500
27	18.2024	4.4383
28	17.2634	4.4058
29	16.9369	4.2975

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30	16.6876	3.9511
31	16.4734	3.7538
32	16.3023	3.5279
33	15.3791	3.4896
34	14.7443	3.4659
35	12.0899	3.4658
36	8.8427	2.4104
37	8.5177	2.4083
38	4.3849	2.0361
39	0.0148	0.7492
40	0.0145	0.0961

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Duration Flows

The Facility PASSED

Flow(cfs)	Predev	Mit	Percentage	Pass/Fail
5.8438	1287	107	8	Pass
6.4904	1142	80	7	Pass
7.1370	1023	62	6	Pass
7.7836	916	46	5	Pass
8.4302	809	36	4	Pass
9.0768	737	28	3	Pass
9.7235	667	22	3	Pass
10.3701	602	16	2	Pass
11.0167	554	15	2	Pass
11.6633	510	15	2	Pass
12.3099	466	13	2	Pass
12.9566	421	13	3	Pass
13.6032	391	10	2	Pass
14.2498	357	10	2	Pass
14.8964	323	8	2	Pass
15.5430	291	7	2	Pass
16.1896	269	5	1	Pass
16.8363	251	5	1	Pass
17.4829	227	5	2	Pass
18.1295	210	5	2	Pass
18.7761	192	4	2	Pass
19.4227	169	4	2	Pass
20.0694	151	3	1	Pass
20.7160	140	2	1	Pass
21.3626	130	2	1	Pass
22.0092	122	2	1	Pass
22.6558	111	2	1	Pass
23.3024	103	2	1	Pass
23.9491	99	2	2	Pass
24.5957	93	2	2	Pass
25.2423	85	2	2	Pass
25.8889	82	2	2	Pass
26.5355	77	2	2	Pass
27.1821	75	2	2	Pass
27.8288	71	2	2	Pass
28.4754	66	2	3	Pass
29.1220	61	1	1	Pass
29.7686	60	1	1	Pass
30.4152	57	1	1	Pass
31.0619	53	1	1	Pass
31.7085	51	1	1	Pass
32.3551	49	1	2	Pass
33.0017	45	1	2	Pass
33.6483	40	0	0	Pass
34.2949	38	0	0	Pass
34.9416	38	0	0	Pass
35.5882	35	0	0	Pass
36.2348	30	0	0	Pass
36.8814	27	0	0	Pass
37.5280	24	0	0	Pass
38.1747	24	0	0	Pass
38.8213	24	0	0	Pass
39.4679	22	0	0	Pass

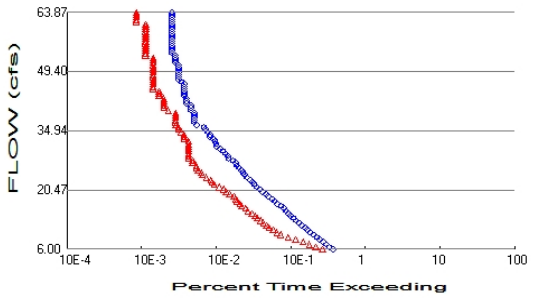
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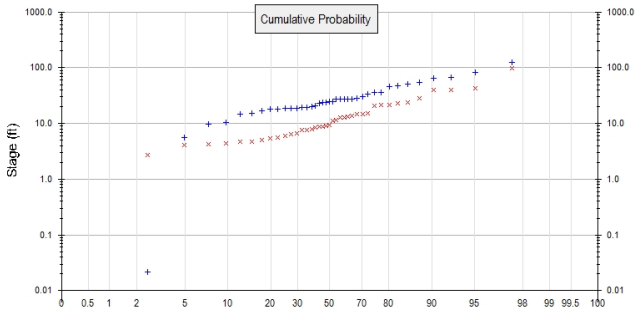
40.1145	22	0	0	Pass
40.7611	21	0	0	Pass
41.4077	21	0	0	Pass
42.0544	21	0	0	Pass
42.7010	18	0	0	Pass
43.3476	18	0	0	Pass
43.9942	17	0	0	Pass
44.6408	17	0	0	Pass
45.2874	17	0	0	Pass
45.9341	17	0	0	Pass
46.5807	17	0	0	Pass
47.2273	14	0	0	Pass
47.8739	14	0	0	Pass
48.5205	14	0	0	Pass
49.1672	14	0	0	Pass
49.8138	13	0	0	Pass
50.4604	12	0	0	Pass
51.1070	12	0	0	Pass
51.7536	12	0	0	Pass
52.4002	12	0	0	Pass
53.0469	12	0	0	Pass
53.6935	12	0	0	Pass
54.3401	12	0	0	Pass
54.9867	11	0	0	Pass
55.6333	11	0	0	Pass
56.2799	11	0	0	Pass
56.9266	10	0	0	Pass
57.5732	10	0	0	Pass
58.2198	10	0	0	Pass
58.8664	9	0	0	Pass
59.5130	9	0	0	Pass
60.1597	9	0	0	Pass
60.8063	9	0	0	Pass
61.4529	9	0	0	Pass
62.0995	9	0	0	Pass
62.7461	9	0	0	Pass
63.3927	9	0	0	Pass
64.0394	9	0	0	Pass
64.6860	9	0	0	Pass
65.3326	9	0	0	Pass
65.9792	9	0	0	Pass
66.6258	9	0	0	Pass
67.2725	9	0	0	Pass
67.9191	9	0	0	Pass
68.5657	9	0	0	Pass
69.2123	9	0	0	Pass
69.8589	9	0	0	Pass

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POC 12





\+ Pre-Project x Mitigated

Pre-Project Landuse Totals for POC #12
Total Pervious Area: 111.26
Total Impervious Area: 0

Mitigated Landuse Totals for POC #12
Total Pervious Area: 77.3
Total Impervious Area: 27.63

Flow Frequency Method: Log Pearson Type III 17B

Flow Frequency Return Periods for Pre-Project. POC #12

Return Period	**Flow(cfs)**
2 year	24.010654
5 year	44.465346
10 year	63.869739
25 year	91.16999

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Flow Frequency Return Periods for Mitigated. POC #12

Return Period	**Flow(cfs)**
2 year	8.994538
5 year	21.60348
10 year	38.09329
25 year	54.916183

Annual Peaks

Annual Peaks for Pre-Project and Mitigated. POC #12

Year	**Pre-Project**	**Mitigated**
1965	24.861	13.047
1966	9.712	4.400
1967	27.927	20.946
1968	16.734	5.441
1969	27.692	8.703
1970	22.703	11.115
1971	27.637	15.094
1972	10.586	6.033
1973	47.055	14.905
1974	36.378	8.395
1975	18.558	4.296
1976	0.022	2.673
1977	0.020	0.624
1978	67.489	23.344
1979	18.561	7.544

1980	21.027	7.836
1981	19.694	9.077
1982	36.370	21.666
1983	46.740	28.160
1984	23.807	13.030
1985	18.519	7.623
1986	81.691	43.006
1987	17.799	6.518
1988	19.319	13.642
1989	27.676	6.605
1990	18.261	4.097
1991	24.730	9.343
1992	34.091	21.382
1993	27.159	11.653
1994	5.644	5.011
1995	124.872	97.264
1996	53.761	12.939
1997	65.274	40.410
1998	51.215	39.473
1999	15.070	5.678
2000	30.518	23.744
2001	19.846	4.681
2002	14.617	4.718
2003	24.225	8.916
2004	27.326	14.583

Ranked Annual Peaks

Ranked Annual Peaks for Pre-Project and Mitigated. POC #12

Rank	Pre-Project	Mitigated
1	124.8720	97.2635
2	81.6913	43.0060
3	67.4892	40.4095
4	65.2738	39.4729
5	53.7605	28.1601
6	51.2146	23.7438
7	47.0547	23.3443
8	46.7398	21.6658
9	36.3784	21.3819
10	36.3704	20.9455
11	34.0906	15.0938
12	30.5181	14.9053
13	27.9272	14.5834
14	27.6915	13.6419
15	27.6758	13.0470
16	27.6370	13.0302
17	27.3262	12.9391
18	27.1592	11.6533
19	24.8606	11.1153
20	24.7300	9.3428
21	24.2247	9.0765
22	23.8068	8.9165
23	22.7026	8.7030
24	21.0268	8.3955
25	19.8456	7.8358
26	19.6940	7.6234
27	19.3186	7.5437
28	18.5605	6.6047
29	18.5580	6.5182

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30	18.5188	6.0332
31	18.2612	5.6775
32	17.7987	5.4413
33	16.7344	5.0108
34	15.0699	4.7177
35	14.6170	4.6808
36	10.5860	4.3996
37	9.7116	4.2964
38	5.6442	4.0971
39	0.0219	2.6729
40	0.0197	0.6236

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Duration Flows

The Facility PASSED

Flow(cfs)	Predev	Mit	Percentage	Pass/Fail
6.0027	1292	938	72	Pass
6.5872	1146	754	65	Pass
7.1717	1041	622	59	Pass
7.7562	940	510	54	Pass
8.3407	856	407	47	Pass
8.9252	787	322	40	Pass
9.5098	708	258	36	Pass
10.0943	641	229	35	Pass
10.6788	588	203	34	Pass
11.2633	543	179	32	Pass
11.8478	498	165	33	Pass
12.4323	454	152	33	Pass
13.0169	417	138	33	Pass
13.6014	380	124	32	Pass
14.1859	352	116	32	Pass
14.7704	323	106	32	Pass
15.3549	302	93	30	Pass
15.9394	281	87	30	Pass
16.5239	260	77	29	Pass
17.1085	233	73	31	Pass
17.6930	216	67	31	Pass
18.2775	198	64	32	Pass
18.8620	175	61	34	Pass
19.4465	162	53	32	Pass
20.0310	148	48	32	Pass
20.6156	135	44	32	Pass
21.2001	124	39	31	Pass
21.7846	114	33	28	Pass
22.3691	108	31	28	Pass
22.9536	101	30	29	Pass
23.5381	91	26	28	Pass
24.1227	84	23	27	Pass
24.7072	80	22	27	Pass
25.2917	77	20	25	Pass
25.8762	71	19	26	Pass
26.4607	66	19	28	Pass
27.0452	64	17	26	Pass
27.6298	59	17	28	Pass
28.2143	51	15	29	Pass
28.7988	50	15	30	Pass
29.3833	47	15	31	Pass
29.9678	43	15	34	Pass
30.5523	40	15	37	Pass
31.1368	36	15	41	Pass
31.7214	35	15	42	Pass
32.3059	34	15	44	Pass
32.8904	32	13	40	Pass
33.4749	29	13	44	Pass
34.0594	29	13	44	Pass
34.6439	27	12	44	Pass
35.2285	25	11	44	Pass
35.8130	24	11	45	Pass
36.3975	19	10	52	Pass

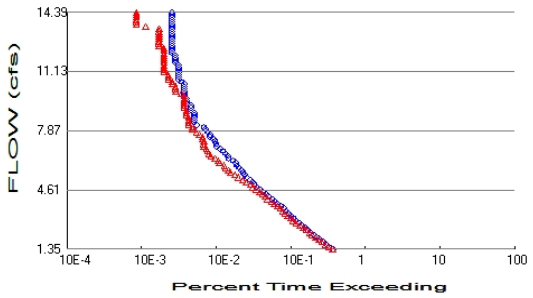
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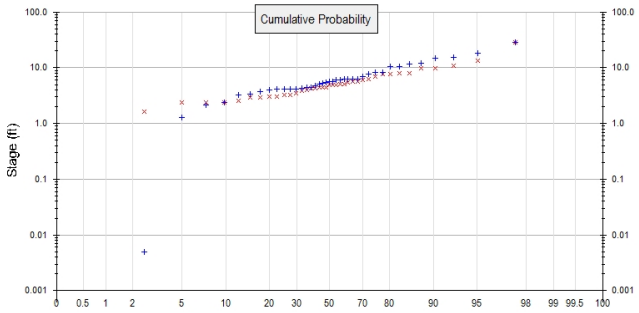
36.9820	18	10	55	Pass
37.5665	18	10	55	Pass
38.1510	18	10	55	Pass
38.7356	18	10	55	Pass
39.3201	18	10	55	Pass
39.9046	16	8	50	Pass
40.4891	16	7	43	Pass
41.0736	16	7	43	Pass
41.6581	14	7	50	Pass
42.2427	14	7	50	Pass
42.8272	14	7	50	Pass
43.4117	13	6	46	Pass
43.9962	13	6	46	Pass
44.5807	13	6	46	Pass
45.1652	13	5	38	Pass
45.7497	13	5	38	Pass
46.3343	13	5	38	Pass
46.9188	12	5	41	Pass
47.5033	11	5	45	Pass
48.0878	11	5	45	Pass
48.6723	11	5	45	Pass
49.2568	11	5	45	Pass
49.8414	11	5	45	Pass
50.4259	11	5	45	Pass
51.0104	11	5	45	Pass
51.5949	10	5	50	Pass
52.1794	10	5	50	Pass
52.7639	10	5	50	Pass
53.3485	10	4	40	Pass
53.9330	9	4	44	Pass
54.5175	9	4	44	Pass
55.1020	9	4	44	Pass
55.6865	9	4	44	Pass
56.2710	9	4	44	Pass
56.8555	9	4	44	Pass
57.4401	9	4	44	Pass
58.0246	9	4	44	Pass
58.6091	9	4	44	Pass
59.1936	9	4	44	Pass
59.7781	9	4	44	Pass
60.3626	9	4	44	Pass
60.9472	9	4	44	Pass
61.5317	9	3	33	Pass
62.1162	9	3	33	Pass
62.7007	9	3	33	Pass
63.2852	9	3	33	Pass
63.8697	9	3	33	Pass

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POC 13





\+ Pre-Project x Mitigated

Pre-Project Landuse Totals for POC #13
Total Pervious Area: 25.07
Total Impervious Area: 0

Mitigated Landuse Totals for POC #13
Total Pervious Area: 14.25
Total Impervious Area: 10.18

Flow Frequency Method: Log Pearson Type III 17B

Flow Frequency Return Periods for Pre-Project. POC #13

Return Period	**Flow(cfs)**
2 year	5.410272
5 year	10.019298
10 year	14.391634
25 year	20.543232

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Flow Frequency Return Periods for Mitigated. POC #13

Return Period	**Flow(cfs)**
2 year	4.46541
5 year	7.788975
10 year	9.92085
25 year	16.862849

Annual Peaks

Annual Peaks for Pre-Project and Mitigated. POC #13

Year	**Pre-Project**	**Mitigated**
1965	5.602	4.511
1966	2.188	2.369
1967	6.293	5.992
1968	3.771	3.215
1969	6.240	4.216
1970	5.116	4.959
1971	6.227	4.262
1972	2.385	2.356
1973	10.603	8.119
1974	8.197	4.876
1975	4.182	2.363
1976	0.005	1.657
1977	0.004	0.383
1978	15.207	9.909
1979	4.182	3.246

1980	4.738	4.008
1981	4.438	4.412
1982	8.195	7.000
1983	10.532	7.789
1984	5.364	4.927
1985	4.173	3.090
1986	18.407	13.579
1987	4.011	3.812
1988	4.353	5.416
1989	6.236	4.422
1990	4.115	2.518
1991	5.572	5.100
1992	7.682	7.789
1993	6.120	5.036
1994	1.272	3.446
1995	28.137	28.538
1996	12.114	8.070
1997	14.708	10.969
1998	11.540	9.923
1999	3.396	2.983
2000	6.877	6.300
2001	4.472	3.065
2002	3.294	2.909
2003	5.459	5.562
2004	6.157	5.743

Ranked Annual Peaks

Ranked Annual Peaks for Pre-Project and Mitigated. POC #13

Rank	Pre-Project	Mitigated
1	28.1373	28.5384
2	18.4074	13.5791
3	15.2072	10.9688
4	14.7080	9.9226
5	12.1138	9.9085
6	11.5401	8.1188
7	10.6027	8.0704
8	10.5318	7.7890
9	8.1971	7.7888
10	8.1953	7.0001
11	7.6816	6.2999
12	6.8766	5.9916
13	6.2928	5.7431
14	6.2397	5.5624
15	6.2361	5.4159
16	6.2274	5.0997
17	6.1574	5.0358
18	6.1197	4.9588
19	5.6018	4.9272
20	5.5724	4.8760
21	5.4585	4.5110
22	5.3643	4.4220
23	5.1155	4.4120
24	4.7379	4.2623
25	4.4718	4.2158
26	4.4376	4.0077
27	4.3530	3.8116
28	4.1822	3.4464
29	4.1816	3.2460

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30	4.1728	3.2152
31	4.1148	3.0903
32	4.0106	3.0647
33	3.7707	2.9827
34	3.3957	2.9094
35	3.2936	2.5181
36	2.3853	2.3694
37	2.1883	2.3625
38	1.2718	2.3563
39	0.0049	1.6567
40	0.0044	0.3830

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Duration Flows

The Facility PASSED

Flow(cfs)	Predev	Mit	Percentage	Pass/Fail
1.3526	1293	1271	98	Pass
1.4843	1147	1128	98	Pass
1.6160	1042	1014	97	Pass
1.7477	940	907	96	Pass
1.8794	856	833	97	Pass
2.0111	787	750	95	Pass
2.1428	708	685	96	Pass
2.2745	641	626	97	Pass
2.4062	588	565	96	Pass
2.5379	543	512	94	Pass
2.6696	498	467	93	Pass
2.8014	454	414	91	Pass
2.9331	417	380	91	Pass
3.0648	380	350	92	Pass
3.1965	352	320	90	Pass
3.3282	323	291	90	Pass
3.4599	301	273	90	Pass
3.5916	281	253	90	Pass
3.7233	259	232	89	Pass
3.8550	232	210	90	Pass
3.9867	216	192	88	Pass
4.1184	198	171	86	Pass
4.2501	175	159	90	Pass
4.3818	162	147	90	Pass
4.5136	148	133	89	Pass
4.6453	135	122	90	Pass
4.7770	124	110	88	Pass
4.9087	114	101	88	Pass
5.0404	108	88	81	Pass
5.1721	101	79	78	Pass
5.3038	91	69	75	Pass
5.4355	84	62	73	Pass
5.5672	80	54	67	Pass
5.6989	77	51	66	Pass
5.8306	71	47	66	Pass
5.9623	66	45	68	Pass
6.0940	64	39	60	Pass
6.2258	59	37	62	Pass
6.3575	51	34	66	Pass
6.4892	50	30	60	Pass
6.6209	47	28	59	Pass
6.7526	43	27	62	Pass
6.8843	40	26	65	Pass
7.0160	36	24	66	Pass
7.1477	35	24	68	Pass
7.2794	34	24	70	Pass
7.4111	32	23	71	Pass
7.5428	29	23	79	Pass
7.6745	29	21	72	Pass
7.8062	27	19	70	Pass
7.9380	25	17	68	Pass
8.0697	24	17	70	Pass
8.2014	19	15	78	Pass

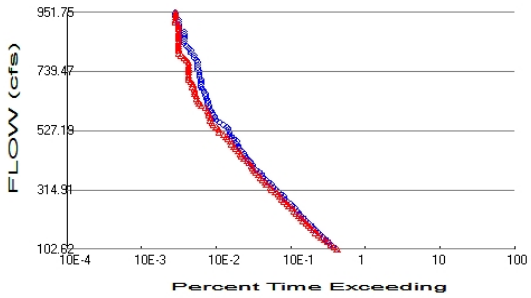
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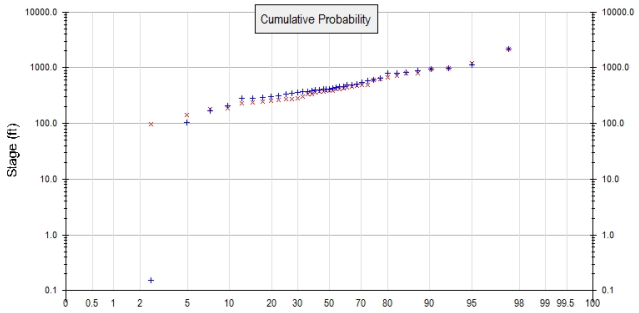
8.3331	18	15	83	Pass
8.4648	18	15	83	Pass
8.5965	18	15	83	Pass
8.7282	18	14	77	Pass
8.8599	18	14	77	Pass
8.9916	16	14	87	Pass
9.1233	16	13	81	Pass
9.2550	16	13	81	Pass
9.3867	14	13	92	Pass
9.5184	14	13	92	Pass
9.6502	14	13	92	Pass
9.7819	13	13	100	Pass
9.9136	13	12	92	Pass
10.0453	13	10	76	Pass
10.1770	13	10	76	Pass
10.3087	13	10	76	Pass
10.4404	13	9	69	Pass
10.5721	12	9	75	Pass
10.7038	11	8	72	Pass
10.8355	11	8	72	Pass
10.9672	11	8	72	Pass
11.0989	11	7	63	Pass
11.2306	11	7	63	Pass
11.3624	11	7	63	Pass
11.4941	11	7	63	Pass
11.6258	10	7	70	Pass
11.7575	10	7	70	Pass
11.8892	10	7	70	Pass
12.0209	10	7	70	Pass
12.1526	9	7	77	Pass
12.2843	9	7	77	Pass
12.4160	9	7	77	Pass
12.5477	9	6	66	Pass
12.6794	9	6	66	Pass
12.8111	9	6	66	Pass
12.9428	9	6	66	Pass
13.0746	9	6	66	Pass
13.2063	9	6	66	Pass
13.3380	9	6	66	Pass
13.4697	9	6	66	Pass
13.6014	9	4	44	Pass
13.7331	9	3	33	Pass
13.8648	9	3	33	Pass
13.9965	9	3	33	Pass
14.1282	9	3	33	Pass
14.2599	9	3	33	Pass
14.3916	9	3	33	Pass

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POC 17





\+ Pre-Project x Mitigated

Pre-Project Landuse Totals for POC #17
Total Pervious Area: 2031.62
Total Impervious Area: 0

Mitigated Landuse Totals for POC #17
Total Pervious Area: 1547.47
Total Impervious Area: 528.79

Flow Frequency Method: Log Pearson Type III 17B

Flow Frequency Return Periods for Pre-Project. POC #17

Return Period	**Flow(cfs)**
2 year	410.498976
5 year	754.378317
10 year	951.747366
25 year	1364.519756

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Flow Frequency Return Periods for Mitigated. POC #17

Return Period	**Flow(cfs)**
2 year	380.105366
5 year	665.184634
10 year	934.161512
25 year	1432.703415

Annual Peaks

Annual Peaks for Pre-Project and Mitigated. POC #17

Year	**Pre-Project**	**Mitigated**
1965	398.697	365.651
1966	166.705	184.256
1967	500.364	495.582
1968	279.463	269.556
1969	440.743	381.371
1970	436.241	387.850
1971	462.308	342.154
1972	210.580	181.595
1973	785.058	709.748
1974	578.282	475.033
1975	331.115	231.239
1976	0.155	95.907
1977	0.107	16.720
1978	976.391	952.387
1979	307.015	252.147

1980	413.503	331.286
1981	407.638	371.025
1982	605.967	601.381
1983	800.594	677.980
1984	405.670	378.900
1985	375.323	270.742
1986	1137.610	1221.210
1987	352.006	300.764
1988	355.908	385.590
1989	467.016	418.337
1990	314.665	260.405
1991	419.905	424.393
1992	645.295	619.690
1993	496.113	421.076
1994	103.203	144.024
1995	2171.310	2184.680
1996	888.174	788.448
1997	960.577	983.326
1998	831.168	802.938
1999	298.441	246.328
2000	552.470	494.352
2001	373.125	283.514
2002	288.029	237.804
2003	385.285	442.645
2004	502.274	463.242

Ranked Annual Peaks

Ranked Annual Peaks for Pre-Project and Mitigated. POC #17

Rank	Pre-Project	Mitigated
1	2171.3100	2184.6800
2	1137.6100	1221.2100
3	976.3910	983.3260
4	960.5770	952.3870
5	888.1740	802.9380
6	831.1680	788.4480
7	800.5940	709.7480
8	785.0580	677.9800
9	645.2950	619.6900
10	605.9670	601.3810
11	578.2820	495.5820
12	552.4700	494.3520
13	502.2740	475.0330
14	500.3640	463.2420
15	496.1130	442.6450
16	467.0160	424.3930
17	462.3080	421.0760
18	440.7430	418.3370
19	436.2410	387.8500
20	419.9050	385.5900
21	413.5030	381.3710
22	407.6380	378.9000
23	405.6700	371.0250
24	398.6970	365.6510
25	385.2850	342.1540
26	375.3230	331.2860
27	373.1250	300.7640
28	355.9080	283.5140
29	352.0060	270.7420

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30	331.1150	269.5560
31	314.6650	260.4050
32	307.0150	252.1470
33	298.4410	246.3280
34	288.0290	237.8040
35	279.4630	231.2390
36	210.5800	184.2560
37	166.7050	181.5950
38	103.2030	144.0240
39	0.1554	95.9066
40	0.1066	16.7196

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Duration Flows

The Facility PASSED

Flow(cfs)	Predev	Mit	Percentage	Pass/Fail
102.6247	1426	1457	102	Pass
111.2017	1312	1327	101	Pass
119.7787	1207	1195	99	Pass
128.3557	1115	1079	96	Pass
136.9327	1033	987	95	Pass
145.5097	950	899	94	Pass
154.0867	879	824	93	Pass
162.6637	810	762	94	Pass
171.2407	743	698	93	Pass
179.8177	703	649	92	Pass
188.3947	657	599	91	Pass
196.9717	608	559	91	Pass
205.5487	565	520	92	Pass
214.1257	518	478	92	Pass
222.7027	478	446	93	Pass
231.2797	454	414	91	Pass
239.8567	426	391	91	Pass
248.4337	399	365	91	Pass
257.0107	368	332	90	Pass
265.5877	345	311	90	Pass
274.1647	312	284	91	Pass
282.7417	295	263	89	Pass
291.3187	281	251	89	Pass
299.8957	259	237	91	Pass
308.4727	241	219	90	Pass
317.0496	222	198	89	Pass
325.6266	203	186	91	Pass
334.2036	192	166	86	Pass
342.7806	177	159	89	Pass
351.3576	163	147	90	Pass
359.9346	151	140	92	Pass
368.5116	144	130	90	Pass
377.0886	135	119	88	Pass
385.6656	122	113	92	Pass
394.2426	111	108	97	Pass
402.8196	109	104	95	Pass
411.3966	102	97	95	Pass
419.9736	98	92	93	Pass
428.5506	90	82	91	Pass
437.1276	86	76	88	Pass
445.7046	83	74	89	Pass
454.2816	76	70	92	Pass
462.8586	72	64	88	Pass
471.4356	70	61	87	Pass
480.0126	67	57	85	Pass
488.5896	66	55	83	Pass
497.1666	61	50	81	Pass
505.7436	57	48	84	Pass
514.3206	53	44	83	Pass
522.8976	53	38	71	Pass
531.4746	51	38	74	Pass
540.0515	49	35	71	Pass
548.6285	44	32	72	Pass

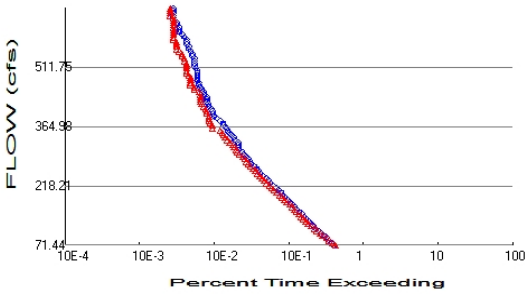
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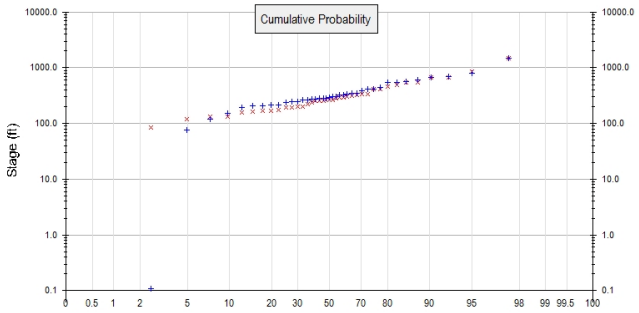
557.2055	39	31	79	Pass
565.7825	36	29	80	Pass
574.3595	34	29	85	Pass
582.9365	32	28	87	Pass
591.5135	31	28	90	Pass
600.0905	30	27	90	Pass
608.6675	28	25	89	Pass
617.2445	28	22	78	Pass
625.8215	27	21	77	Pass
634.3985	27	20	74	Pass
642.9755	26	19	73	Pass
651.5525	25	19	76	Pass
660.1295	25	18	72	Pass
668.7065	24	18	75	Pass
677.2835	23	18	78	Pass
685.8605	22	17	77	Pass
694.4375	22	17	77	Pass
703.0145	22	16	72	Pass
711.5915	22	15	68	Pass
720.1685	21	15	71	Pass
728.7455	21	15	71	Pass
737.3225	21	15	71	Pass
745.8995	20	15	75	Pass
754.4765	20	15	75	Pass
763.0535	20	15	75	Pass
771.6304	20	15	75	Pass
780.2074	19	14	73	Pass
788.7844	18	13	72	Pass
797.3614	18	12	66	Pass
805.9384	16	11	68	Pass
814.5154	16	11	68	Pass
823.0924	15	11	73	Pass
831.6694	14	11	78	Pass
840.2464	13	11	84	Pass
848.8234	13	11	84	Pass
857.4004	13	11	84	Pass
865.9774	13	11	84	Pass
874.5544	13	11	84	Pass
883.1314	13	11	84	Pass
891.7084	11	11	100	Pass
900.2854	11	11	100	Pass
908.8624	11	11	100	Pass
917.4394	11	10	90	Pass
926.0164	11	10	90	Pass
934.5934	10	10	100	Pass
943.1704	10	10	100	Pass
951.7474	10	10	100	Pass

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POC 20





+ Pre-Project x Mitigated

Pre-Project Landuse Totals for POC #20
Total Pervious Area: 1366.4
Total Impervious Area: 0

Mitigated Landuse Totals for POC #20
Total Pervious Area: 946.33
Total Impervious Area: 429.06

Flow Frequency Method: Log Pearson Type III 17B

Flow Frequency Return Periods for Pre-Project. POC #20

Return Period	**Flow(cfs)**
2 year	285.778927
5 year	517.75161
10 year	658.519805
25 year	941.967024

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Flow Frequency Return Periods for Mitigated. POC #20

Return Period	**Flow(cfs)**
2 year	259.500195
5 year	453.598854
10 year	657.746561
25 year	993.965317

Annual Peaks

Annual Peaks for Pre-Project and Mitigated. POC #20

Year	**Pre-Project**	**Mitigated**
1965	272.651	254.092
1966	118.476	132.312
1967	341.584	333.366
1968	193.250	194.428
1969	308.053	261.592
1970	301.042	254.930
1971	328.256	237.956
1972	150.565	132.901
1973	539.860	487.121
1974	411.415	334.498
1975	237.242	157.428
1976	0.108	83.597
1977	0.075	13.813
1978	688.028	672.019
1979	211.701	171.889

1980	285.316	224.093
1981	289.850	265.210
1982	415.642	418.921
1983	549.387	463.352
1984	281.245	257.508
1985	270.358	195.636
1986	785.279	848.749
1987	244.395	202.245
1988	247.376	265.299
1989	324.049	293.094
1990	215.712	177.283
1991	286.265	294.920
1992	439.144	411.766
1993	349.683	284.303
1994	77.209	118.621
1995	1499.080	1510.290
1996	615.592	548.501
1997	664.482	677.542
1998	564.744	554.985
1999	205.822	162.360
2000	388.694	329.129
2001	262.171	200.282
2002	205.014	170.623
2003	265.660	314.712
2004	348.207	306.493

Ranked Annual Peaks

Ranked Annual Peaks for Pre-Project and Mitigated. POC #20

Rank	Pre-Project	Mitigated
1	1499.0800	1510.2900
2	785.2790	848.7490
3	688.0280	677.5420
4	664.4820	672.0190
5	615.5920	554.9850
6	564.7440	548.5010
7	549.3870	487.1210
8	539.8600	463.3520
9	439.1440	418.9210
10	415.6420	411.7660
11	411.4150	334.4980
12	388.6940	333.3660
13	349.6830	329.1290
14	348.2070	314.7120
15	341.5840	306.4930
16	328.2560	294.9200
17	324.0490	293.0940
18	308.0530	284.3030
19	301.0420	265.2990
20	289.8500	265.2100
21	286.2650	261.5920
22	285.3160	257.5080
23	281.2450	254.9300
24	272.6510	254.0920
25	270.3580	237.9560
26	265.6600	224.0930
27	262.1710	202.2450
28	247.3760	200.2820
29	244.3950	195.6360

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30	237.2420	194.4280
31	215.7120	177.2830
32	211.7010	171.8890
33	205.8220	170.6230
34	205.0140	162.3600
35	193.2500	157.4280
36	150.5650	132.9010
37	118.4760	132.3120
38	77.2089	118.6210
39	0.1079	83.5968
40	0.0751	13.8125

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Duration Flows

The Facility PASSED

Flow(cfs)	Predev	Mit	Percentage	Pass/Fail
71.4447	1416	1475	104	Pass
77.3748	1313	1360	103	Pass
83.3048	1212	1233	101	Pass
89.2349	1131	1122	99	Pass
95.1649	1029	1004	97	Pass
101.0950	956	918	96	Pass
107.0250	878	840	95	Pass
112.9551	806	776	96	Pass
118.8851	748	704	94	Pass
124.8152	692	640	92	Pass
130.7452	655	596	90	Pass
136.6753	609	556	91	Pass
142.6053	561	520	92	Pass
148.5354	524	482	91	Pass
154.4654	485	443	91	Pass
160.3955	448	417	93	Pass
166.3256	421	389	92	Pass
172.2556	391	362	92	Pass
178.1857	362	332	91	Pass
184.1157	335	307	91	Pass
190.0458	311	289	92	Pass
195.9758	290	267	92	Pass
201.9059	278	242	87	Pass
207.8359	258	222	86	Pass
213.7660	236	207	87	Pass
219.6960	214	195	91	Pass
225.6261	200	176	88	Pass
231.5561	187	164	87	Pass
237.4862	174	153	87	Pass
243.4162	158	143	90	Pass
249.3463	147	134	91	Pass
255.2763	138	126	91	Pass
261.2064	131	117	89	Pass
267.1364	121	107	88	Pass
273.0665	110	101	91	Pass
278.9965	106	96	90	Pass
284.9266	100	90	90	Pass
290.8566	94	86	91	Pass
296.7867	87	76	87	Pass
302.7167	83	72	86	Pass
308.6468	77	69	89	Pass
314.5768	75	65	86	Pass
320.5069	74	62	83	Pass
326.4369	73	57	78	Pass
332.3670	66	53	80	Pass
338.2970	64	49	76	Pass
344.2271	60	47	78	Pass
350.1571	56	45	80	Pass
356.0872	53	42	79	Pass
362.0172	51	33	64	Pass
367.9473	47	33	70	Pass
373.8773	46	31	67	Pass
379.8074	42	30	71	Pass

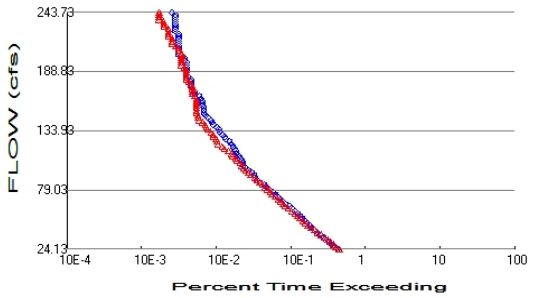
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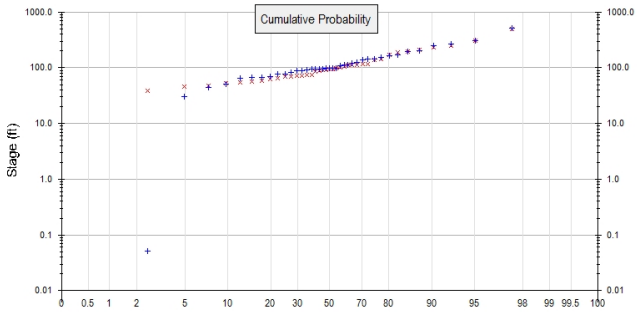
385.7374	38	30	78	Pass
391.6675	35	30	85	Pass
397.5976	34	28	82	Pass
403.5276	33	28	84	Pass
409.4577	32	27	84	Pass
415.3877	30	25	83	Pass
421.3178	29	24	82	Pass
427.2478	28	23	82	Pass
433.1779	28	23	82	Pass
439.1079	28	23	82	Pass
445.0380	26	23	88	Pass
450.9680	25	22	88	Pass
456.8981	24	19	79	Pass
462.8281	23	19	82	Pass
468.7582	22	17	77	Pass
474.6882	22	17	77	Pass
480.6183	21	17	80	Pass
486.5483	21	17	80	Pass
492.4784	21	16	76	Pass
498.4084	21	15	71	Pass
504.3385	21	15	71	Pass
510.2685	20	15	75	Pass
516.1986	19	15	78	Pass
522.1286	19	15	78	Pass
528.0587	19	14	73	Pass
533.9887	19	14	73	Pass
539.9188	18	13	72	Pass
545.8488	18	13	72	Pass
551.7789	17	12	70	Pass
557.7089	16	11	68	Pass
563.6390	16	11	68	Pass
569.5690	15	11	73	Pass
575.4991	15	11	73	Pass
581.4291	15	10	66	Pass
587.3592	14	10	71	Pass
593.2892	13	10	76	Pass
599.2193	12	10	83	Pass
605.1493	12	10	83	Pass
611.0794	12	10	83	Pass
617.0094	11	10	90	Pass
622.9395	11	10	90	Pass
628.8695	10	10	100	Pass
634.7996	10	10	100	Pass
640.7297	10	9	90	Pass
646.6597	10	9	90	Pass
652.5898	10	9	90	Pass
658.5198	10	9	90	Pass

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POC 21





\+ Pre-Project x Mitigated

Pre-Project Landuse Totals for POC #21
Total Pervious Area: 448.69
Total Impervious Area: 0

Mitigated Landuse Totals for POC #21
Total Pervious Area: 265.84
Total Impervious Area: 202.14

Flow Frequency Method: Log Pearson Type III 17B

Flow Frequency Return Periods for Pre-Project. POC #21

Return Period	**Flow(cfs)**
2 year	96.534468
5 year	164.718878
10 year	243.728927
25 year	351.837537

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Flow Frequency Return Periods for Mitigated. POC #21

Return Period	**Flow(cfs)**
2 year	91.515007
5 year	163.175293
10 year	233.061122
25 year	349.44361

Annual Peaks

Annual Peaks for Pre-Project and Mitigated. POC #21

Year	**Pre-Project**	**Mitigated**
1965	90.624	98.412
1966	43.694	47.179
1967	108.588	117.386
1968	68.275	65.323
1969	112.166	86.096
1970	95.314	87.030
1971	121.582	75.391
1972	51.403	46.481
1973	167.328	193.724
1974	155.442	113.717
1975	87.968	52.289
1976	0.051	39.336
1977	0.029	7.371
1978	266.317	247.902
1979	69.576	58.468

1980	93.923	74.084
1981	99.232	91.215
1982	144.813	145.747
1983	171.537	168.077
1984	96.874	94.392
1985	94.638	69.703
1986	303.794	305.753
1987	78.350	73.088
1988	82.423	95.444
1989	99.805	115.769
1990	77.021	63.305
1991	96.211	100.109
1992	144.538	140.527
1993	123.914	91.830
1994	29.917	54.031
1995	522.659	504.788
1996	202.566	212.578
1997	249.446	235.906
1998	197.955	192.124
1999	65.395	56.563
2000	137.757	113.605
2001	89.743	71.409
2002	67.219	70.383
2003	98.176	113.076
2004	112.492	105.211

Ranked Annual Peaks

Ranked Annual Peaks for Pre-Project and Mitigated. POC #21

Rank	Pre-Project	Mitigated
1	522.6590	504.7880
2	303.7940	305.7530
3	266.3170	247.9020
4	249.4460	235.9060
5	202.5660	212.5780
6	197.9550	193.7240
7	171.5370	192.1240
8	167.3280	168.0770
9	155.4420	145.7470
10	144.8130	140.5270
11	144.5380	117.3860
12	137.7570	115.7690
13	123.9140	113.7170
14	121.5820	113.6050
15	112.4920	113.0760
16	112.1660	105.2110
17	108.5880	100.1090
18	99.8053	98.4120
19	99.2320	95.4436
20	98.1762	94.3919
21	96.8739	91.8297
22	96.2112	91.2153
23	95.3140	87.0298
24	94.6375	86.0964
25	93.9225	75.3907
26	90.6240	74.0835
27	89.7434	73.0884
28	87.9677	71.4089
29	82.4226	70.3826

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30	78.3498	69.7028
31	77.0208	65.3228
32	69.5762	63.3053
33	68.2753	58.4678
34	67.2188	56.5628
35	65.3952	54.0307
36	51.4032	52.2885
37	43.6937	47.1788
38	29.9168	46.4812
39	0.0507	39.3358
40	0.0286	7.3708

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Duration Flows

The Facility PASSED

Flow(cfs)	Predev	Mit	Percentage	Pass/Fail
24.1336	1487	1558	104	Pass
26.3518	1366	1416	103	Pass
28.5699	1246	1302	104	Pass
30.7880	1146	1192	104	Pass
33.0062	1024	1093	106	Pass
35.2243	941	997	105	Pass
37.4424	868	886	102	Pass
39.6606	795	795	100	Pass
41.8787	727	729	100	Pass
44.0968	658	655	99	Pass
46.3150	620	597	96	Pass
48.5331	579	543	93	Pass
50.7512	545	512	93	Pass
52.9694	502	467	93	Pass
55.1875	468	429	91	Pass
57.4056	435	398	91	Pass
59.6238	398	357	89	Pass
61.8419	362	322	88	Pass
64.0600	334	293	87	Pass
66.2782	300	277	92	Pass
68.4963	276	257	93	Pass
70.7144	257	238	92	Pass
72.9326	233	218	93	Pass
75.1507	218	195	89	Pass
77.3688	200	186	93	Pass
79.5870	181	172	95	Pass
81.8051	167	161	96	Pass
84.0232	155	147	94	Pass
86.2414	135	135	100	Pass
88.4595	125	123	98	Pass
90.6777	117	115	98	Pass
92.8958	114	102	89	Pass
95.1139	106	94	88	Pass
97.3321	95	87	91	Pass
99.5502	86	83	96	Pass
101.7683	82	77	93	Pass
103.9865	80	73	91	Pass
106.2046	78	66	84	Pass
108.4227	73	64	87	Pass
110.6409	71	59	83	Pass
112.8590	67	56	83	Pass
115.0771	64	51	79	Pass
117.2953	62	45	72	Pass
119.5134	59	42	71	Pass
121.7315	56	37	66	Pass
123.9497	53	36	67	Pass
126.1678	47	35	74	Pass
128.3859	45	32	71	Pass
130.6041	42	32	76	Pass
132.8222	39	30	76	Pass
135.0403	38	27	71	Pass
137.2585	36	26	72	Pass
139.4766	32	25	78	Pass

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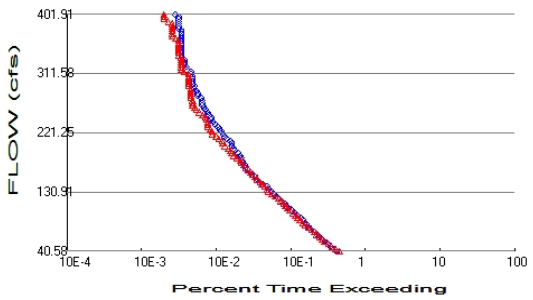
141.6947	31	23	74	Pass
143.9129	30	21	70	Pass
146.1310	27	20	74	Pass
148.3491	25	20	80	Pass
150.5673	24	19	79	Pass
152.7854	24	19	79	Pass
155.0035	24	19	79	Pass
157.2217	23	19	82	Pass
159.4398	23	19	82	Pass
161.6580	23	19	82	Pass
163.8761	22	19	86	Pass
166.0942	21	18	85	Pass
168.3124	18	17	94	Pass
170.5305	18	17	94	Pass
172.7486	17	17	100	Pass
174.9668	16	17	106	Pass
177.1849	16	16	100	Pass
179.4030	16	15	93	Pass
181.6212	16	14	87	Pass
183.8393	15	14	93	Pass
186.0574	14	14	100	Pass
188.2756	14	14	100	Pass
190.4937	14	14	100	Pass
192.7118	14	13	92	Pass
194.9300	14	12	85	Pass
197.1481	14	12	85	Pass
199.3662	13	12	92	Pass
201.5844	13	12	92	Pass
203.8025	11	12	109	Pass
206.0206	11	12	109	Pass
208.2388	11	11	100	Pass
210.4569	11	11	100	Pass
212.6750	11	10	90	Pass
214.8932	11	9	81	Pass
217.1113	11	9	81	Pass
219.3294	11	9	81	Pass
221.5476	11	8	72	Pass
223.7657	11	8	72	Pass
225.9839	10	8	80	Pass
228.2020	10	8	80	Pass
230.4201	10	7	70	Pass
232.6383	10	7	70	Pass
234.8564	10	7	70	Pass
237.0745	10	6	60	Pass
239.2927	10	6	60	Pass
241.5108	10	6	60	Pass
243.7289	9	6	66	Pass

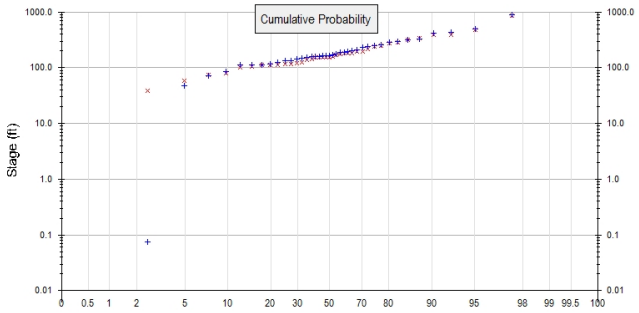
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The development has an increase in flow durations for more than 10% of the flows for the range of the duration analysis.

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POC 22





\+ Pre-Project x Mitigated

Pre-Project Landuse Totals for POC #22
Total Pervious Area: 774.31
Total Impervious Area: 0

Mitigated Landuse Totals for POC #22
Total Pervious Area: 604.89
Total Impervious Area: 188.27

Flow Frequency Method: Log Pearson Type III 17B

Flow Frequency Return Periods for Pre-Project. POC #22

Return Period	**Flow(cfs)**
2 year	162.317756
5 year	278.623317
10 year	401.912976
25 year	581.017537

Flow Frequency Return Periods for Mitigated. POC #22

Return Period	**Flow(cfs)**
2 year	154.468537
5 year	266.410634
10 year	384.285683
25 year	567.786

Annual Peaks

Annual Peaks for Pre-Project and Mitigated. POC #22

Year	**Pre-Project**	**Mitigated**
1965	147.016	152.620
1966	71.847	74.601
1967	187.995	196.783
1968	113.835	116.192
1969	186.720	154.370
1970	164.742	155.773
1971	200.645	160.549
1972	85.319	79.845
1973	285.327	289.536
1974	254.788	217.046
1975	144.308	114.281
1976	0.074	38.067
1977	0.056	5.772
1978	433.663	390.643
1979	114.686	113.003

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1980	161.317	137.121
1981	167.632	142.174
1982	239.358	241.658
1983	295.672	272.411
1984	161.591	154.572
1985	157.608	116.156
1986	495.651	487.767
1987	133.751	124.433
1988	134.875	154.324
1989	175.890	182.148
1990	124.705	114.261
1991	162.559	172.004
1992	247.707	245.076
1993	207.323	174.155
1994	47.202	58.444
1995	884.543	852.298
1996	322.737	338.513
1997	411.432	393.429
1998	333.376	317.253
1999	113.011	100.094
2000	231.098	193.315
2001	151.698	120.215
2002	114.215	106.872
2003	162.088	182.030
2004	193.687	185.048

Ranked Annual Peaks

Ranked Annual Peaks for Pre-Project and Mitigated. POC #22

Rank	Pre-Project	Mitigated
1	884.5430	852.2980
2	495.6510	487.7670
3	433.6630	393.4290
4	411.4320	390.6430
5	333.3760	338.5130
6	322.7370	317.2530
7	295.6720	289.5360
8	285.3270	272.4110
9	254.7880	245.0760
10	247.7070	241.6580
11	239.3580	217.0460
12	231.0980	196.7830
13	207.3230	193.3150
14	200.6450	185.0480
15	193.6870	182.1480
16	187.9950	182.0300
17	186.7200	174.1550
18	175.8900	172.0040
19	167.6320	160.5490
20	164.7420	155.7730
21	162.5590	154.5720
22	162.0880	154.3700
23	161.5910	154.3240
24	161.3170	152.6200
25	157.6080	142.1740
26	151.6980	137.1210
27	147.0160	124.4330
28	144.3080	120.2150
29	134.8750	116.1920

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30	133.7510	116.1560
31	124.7050	114.2810
32	114.6860	114.2610
33	114.2150	113.0030
34	113.8350	106.8720
35	113.0110	100.0940
36	85.3189	79.8451
37	71.8474	74.6010
38	47.2022	58.4441
39	0.0739	38.0674
40	0.0560	5.7715

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Duration Flows

The Facility PASSED

Flow(cfs)	Predev	Mit	Percentage	Pass/Fail
40.5794	1456	1562	107	Pass
44.2293	1334	1394	104	Pass
47.8791	1205	1241	102	Pass
51.5289	1098	1123	102	Pass
55.1788	1000	1002	100	Pass
58.8286	921	922	100	Pass
62.4784	854	855	100	Pass
66.1283	784	788	100	Pass
69.7781	725	734	101	Pass
73.4279	655	670	102	Pass
77.0778	617	602	97	Pass
80.7276	576	556	96	Pass
84.3774	542	506	93	Pass
88.0273	506	466	92	Pass
91.6771	476	435	91	Pass
95.3269	430	407	94	Pass
98.9768	401	374	93	Pass
102.6266	363	343	94	Pass
106.2764	332	317	95	Pass
109.9263	307	300	97	Pass
113.5761	291	281	96	Pass
117.2259	260	260	100	Pass
120.8758	241	240	99	Pass
124.5256	225	217	96	Pass
128.1754	208	198	95	Pass
131.8253	191	177	92	Pass
135.4751	180	169	93	Pass
139.1249	170	157	92	Pass
142.7748	148	145	97	Pass
146.4246	134	137	102	Pass
150.0745	123	126	102	Pass
153.7243	117	118	100	Pass
157.3741	106	107	100	Pass
161.0240	100	102	102	Pass
164.6738	92	94	102	Pass
168.3236	87	87	100	Pass
171.9735	85	82	96	Pass
175.6233	80	76	95	Pass
179.2731	77	74	96	Pass
182.9230	76	66	86	Pass
186.5728	73	61	83	Pass
190.2226	68	57	83	Pass
193.8725	62	54	87	Pass
197.5223	60	51	85	Pass
201.1721	57	46	80	Pass
204.8220	57	43	75	Pass
208.4718	54	42	77	Pass
212.1216	49	38	77	Pass
215.7715	45	35	77	Pass
219.4213	43	31	72	Pass
223.0711	41	31	75	Pass
226.7210	39	29	74	Pass
230.3708	37	27	72	Pass

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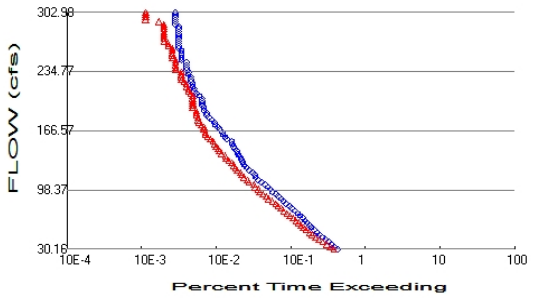
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237.6705	32	27	84	Pass
241.3203	30	26	86	Pass
244.9701	30	25	83	Pass
248.6200	28	23	82	Pass
252.2698	27	21	77	Pass
255.9196	25	19	76	Pass
259.5695	24	18	75	Pass
263.2193	23	17	73	Pass
266.8691	23	17	73	Pass
270.5190	23	17	73	Pass
274.1688	22	16	72	Pass
277.8186	20	16	80	Pass
281.4685	20	16	80	Pass
285.1183	19	16	84	Pass
288.7681	18	16	88	Pass
292.4180	18	15	83	Pass
296.0678	17	15	88	Pass
299.7176	17	15	88	Pass
303.3675	17	15	88	Pass
307.0173	17	15	88	Pass
310.6671	16	15	93	Pass
314.3170	16	13	81	Pass
317.9668	14	12	85	Pass
321.6166	14	12	85	Pass
325.2665	13	12	92	Pass
328.9163	13	12	92	Pass
332.5661	13	12	92	Pass
336.2160	12	12	100	Pass
339.8658	12	11	91	Pass
343.5156	12	11	91	Pass
347.1655	12	11	91	Pass
350.8153	12	11	91	Pass
354.4651	12	11	91	Pass
358.1150	12	11	91	Pass
361.7648	12	11	91	Pass
365.4146	12	10	83	Pass
369.0645	12	9	75	Pass
372.7143	12	9	75	Pass
376.3641	12	9	75	Pass
380.0140	11	9	81	Pass
383.6638	11	9	81	Pass
387.3136	11	9	81	Pass
390.9635	11	8	72	Pass
394.6133	11	7	63	Pass
398.2631	11	7	63	Pass
401.9130	10	7	70	Pass

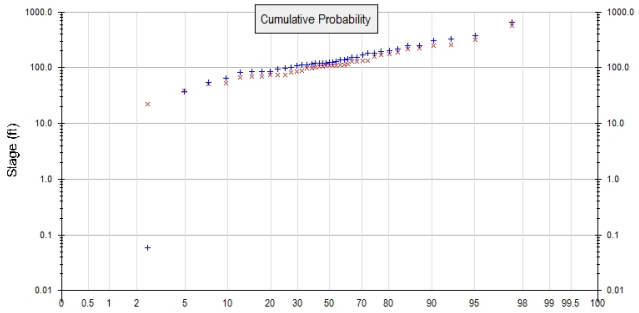
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The development has an increase in flow durations for more than 10% of the flows for the range of the duration analysis.

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POC 23





\+ Pre-Project x Mitigated

Pre-Project Landuse Totals for POC #23
Total Pervious Area: 564.6
Total Impervious Area: 0

Mitigated Landuse Totals for POC #23
Total Pervious Area: 429.94
Total Impervious Area: 99.29

Flow Frequency Method: Log Pearson Type III 17B

Flow Frequency Return Periods for Pre-Project. POC #23

Return Period	**Flow(cfs)**
2 year	120.650366
5 year	203.44761
10 year	302.977683
25 year	438.359366

Flow Frequency Return Periods for Mitigated. POC #23

Return Period	**Flow(cfs)**
2 year	106.416244
5 year	174.027902
10 year	246.112976
25 year	373.389829

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Annual Peaks

Annual Peaks for Pre-Project and Mitigated. POC #23

Year	**Pre-Project**	**Mitigated**
1965	112.507	97.697
1966	54.905	51.240
1967	137.158	132.683
1968	85.525	73.471
1969	140.694	107.099
1970	120.105	109.766
1971	152.358	100.833
1972	64.324	53.651
1973	205.990	190.803
1974	194.408	131.193
1975	109.996	67.301
1976	0.059	22.614
1977	0.049	3.098
1978	330.898	248.997
1979	86.332	68.785

1980	118.304	99.688
1981	126.030	105.766
1982	181.421	161.226
1983	215.022	174.290
1984	121.223	105.724
1985	119.446	85.923
1986	376.811	315.533
1987	98.057	88.255
1988	102.736	107.150
1989	128.563	113.417
1990	95.953	73.250
1991	119.372	108.617
1992	181.575	173.096
1993	155.379	116.346
1994	37.210	38.907
1995	657.198	579.103
1996	246.351	215.988
1997	310.700	262.390
1998	247.377	225.348
1999	82.379	70.042
2000	173.255	135.349
2001	113.471	82.266
2002	85.254	74.456
2003	123.160	111.385
2004	143.446	128.323

Ranked Annual Peaks

Ranked Annual Peaks for Pre-Project and Mitigated. POC #23

Rank	Pre-Project	Mitigated
1	657.1980	579.1030
2	376.8110	315.5330
3	330.8980	262.3900
4	310.7000	248.9970
5	247.3770	225.3480
6	246.3510	215.9880
7	215.0220	190.8030
8	205.9900	174.2900
9	194.4080	173.0960
10	181.5750	161.2260
11	181.4210	135.3490
12	173.2550	132.6830
13	155.3790	131.1930
14	152.3580	128.3230
15	143.4460	116.3460
16	140.6940	113.4170
17	137.1580	111.3850
18	128.5630	109.7660
19	126.0300	108.6170
20	123.1600	107.1500
21	121.2230	107.0990
22	120.1050	105.7660
23	119.4460	105.7240
24	119.3720	100.8330
25	118.3040	99.6878
26	113.4710	97.6968
27	112.5070	88.2547
28	109.9960	85.9228
29	102.7360	82.2655

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30	98.0574	74.4561
31	95.9531	73.4714
32	86.3315	73.2496
33	85.5254	70.0415
34	85.2537	68.7853
35	82.3789	67.3012
36	64.3242	53.6509
37	54.9053	51.2400
38	37.2095	38.9072
39	0.0591	22.6141
40	0.0488	3.0983

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Duration Flows

The Facility PASSED

Flow(cfs)	Predev	Mit	Percentage	Pass/Fail
30.1626	1471	1330	90	Pass
32.9183	1347	1192	88	Pass
35.6740	1234	1071	86	Pass
38.4297	1130	949	83	Pass
41.1854	1014	827	81	Pass
43.9411	938	753	80	Pass
46.6968	865	674	77	Pass
49.4525	799	623	77	Pass
52.2083	725	560	77	Pass
54.9640	660	518	78	Pass
57.7197	622	476	76	Pass
60.4754	582	444	76	Pass
63.2311	545	411	75	Pass
65.9868	508	375	73	Pass
68.7425	468	338	72	Pass
71.4982	438	311	71	Pass
74.2539	401	283	70	Pass
77.0096	362	260	71	Pass
79.7653	333	238	71	Pass
82.5210	303	220	72	Pass
85.2768	280	199	71	Pass
88.0325	262	176	67	Pass
90.7882	240	164	68	Pass
93.5439	220	148	67	Pass
96.2996	198	133	67	Pass
99.0553	186	129	69	Pass
101.8110	173	118	68	Pass
104.5667	159	112	70	Pass
107.3224	142	97	68	Pass
110.0781	127	92	72	Pass
112.8338	120	82	68	Pass
115.5895	115	77	66	Pass
118.3452	107	74	69	Pass
121.1010	97	67	69	Pass
123.8567	90	64	71	Pass
126.6124	84	60	71	Pass
129.3681	80	57	71	Pass
132.1238	78	52	66	Pass
134.8795	75	48	64	Pass
137.6352	71	47	66	Pass
140.3909	69	41	59	Pass
143.1466	67	39	58	Pass
145.9023	62	37	59	Pass
148.6580	60	35	58	Pass
151.4137	58	33	56	Pass
154.1695	57	32	56	Pass
156.9252	49	29	59	Pass
159.6809	46	27	58	Pass
162.4366	43	25	58	Pass
165.1923	42	25	59	Pass
167.9480	39	24	61	Pass
170.7037	37	24	64	Pass
173.4594	34	22	64	Pass

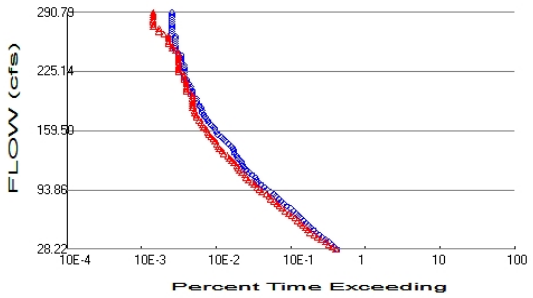
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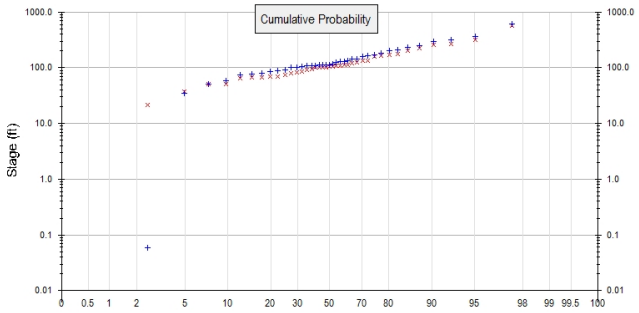
176.2151	33	21	63	Pass
178.9708	31	20	64	Pass
181.7265	28	20	71	Pass
184.4822	26	19	73	Pass
187.2379	26	19	73	Pass
189.9937	24	19	79	Pass
192.7494	24	17	70	Pass
195.5051	23	17	73	Pass
198.2608	23	17	73	Pass
201.0165	23	17	73	Pass
203.7722	23	17	73	Pass
206.5279	21	17	80	Pass
209.2836	19	16	84	Pass
212.0393	18	15	83	Pass
214.7950	18	15	83	Pass
217.5507	17	14	82	Pass
220.3064	17	14	82	Pass
223.0622	16	13	81	Pass
225.8179	16	12	75	Pass
228.5736	16	12	75	Pass
231.3293	15	12	80	Pass
234.0850	15	12	80	Pass
236.8407	14	10	71	Pass
239.5964	14	10	71	Pass
242.3521	14	10	71	Pass
245.1078	14	10	71	Pass
247.8635	12	10	83	Pass
250.6192	12	9	75	Pass
253.3749	12	9	75	Pass
256.1306	12	9	75	Pass
258.8864	12	9	75	Pass
261.6421	11	9	81	Pass
264.3978	11	8	72	Pass
267.1535	11	8	72	Pass
269.9092	11	7	63	Pass
272.6649	11	7	63	Pass
275.4206	11	7	63	Pass
278.1763	11	7	63	Pass
280.9320	11	7	63	Pass
283.6877	11	7	63	Pass
286.4434	11	7	63	Pass
289.1991	10	7	70	Pass
291.9549	10	6	60	Pass
294.7106	10	4	40	Pass
297.4663	10	4	40	Pass
300.2220	10	4	40	Pass
302.9777	10	4	40	Pass

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POC 24





\+ Pre-Project x Mitigated

Pre-Project Landuse Totals for POC #24
Total Pervious Area: 520.36
Total Impervious Area: 0

Mitigated Landuse Totals for POC #24
Total Pervious Area: 420.96
Total Impervious Area: 94.54

Flow Frequency Method: Log Pearson Type III 17B

Flow Frequency Return Periods for Pre-Project. POC #24

Return Period	**Flow(cfs)**
2 year	112.868098
5 year	200.842732
10 year	290.785268
25 year	417.79339

Flow Frequency Return Periods for Mitigated. POC #24

Return Period	**Flow(cfs)**
2 year	103.178268
5 year	167.305122
10 year	250.322976
25 year	376.290341

Annual Peaks

Annual Peaks for Pre-Project and Mitigated. POC #24

Year	**Pre-Project**	**Mitigated**
1965	112.252	93.050
1966	51.562	50.346
1967	128.577	126.523
1968	80.974	73.334
1969	132.910	107.147
1970	107.505	104.906
1971	142.486	100.993
1972	57.695	51.221
1973	205.726	177.266
1974	183.480	132.503
1975	101.963	66.735
1976	0.059	21.507
1977	0.052	2.927
1978	316.890	254.032
1979	84.610	65.000

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1980	107.262	96.257
1981	113.515	101.561
1982	172.640	161.608
1983	208.903	163.910
1984	114.378	103.314
1985	108.995	83.795
1986	363.942	321.436
1987	88.034	84.382
1988	100.058	103.049
1989	122.974	105.557
1990	91.711	69.362
1991	111.922	107.573
1992	166.788	168.260
1993	142.887	114.492
1994	34.777	37.686
1995	609.265	571.328
1996	247.256	200.204
1997	296.831	264.680
1998	233.309	223.618
1999	74.416	67.088
2000	159.619	132.691
2001	104.681	81.166
2002	75.924	70.710
2003	117.345	111.266
2004	127.744	121.072

Ranked Annual Peaks

Ranked Annual Peaks for Pre-Project and Mitigated. POC #24

Rank	Pre-Project	Mitigated
1	609.2650	571.3280
2	363.9420	321.4360
3	316.8900	264.6800
4	296.8310	254.0320
5	247.2560	223.6180
6	233.3090	200.2040
7	208.9030	177.2660
8	205.7260	168.2600
9	183.4800	163.9100
10	172.6400	161.6080
11	166.7880	132.6910
12	159.6190	132.5030
13	142.8870	126.5230
14	142.4860	121.0720
15	132.9100	114.4920
16	128.5770	111.2660
17	127.7440	107.5730
18	122.9740	107.1470
19	117.3450	105.5570
20	114.3780	104.9060
21	113.5150	103.3140
22	112.2520	103.0490
23	111.9220	101.5610
24	108.9950	100.9930
25	107.5050	96.2565
26	107.2620	93.0504
27	104.6810	84.3816
28	101.9630	83.7949
29	100.0580	81.1661

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30	91.7112	73.3338
31	88.0338	70.7104
32	84.6095	69.3616
33	80.9740	67.0879
34	75.9241	66.7347
35	74.4156	65.0002
36	57.6947	51.2208
37	51.5621	50.3463
38	34.7772	37.6863
39	0.0587	21.5073
40	0.0516	2.9274

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Duration Flows

The Facility PASSED

Flow(cfs)	Predev	Mit	Percentage	Pass/Fail
28.2170	1467	1409	96	Pass
30.8692	1350	1258	93	Pass
33.5214	1237	1128	91	Pass
36.1736	1116	1018	91	Pass
38.8258	1010	896	88	Pass
41.4780	920	795	86	Pass
44.1303	842	721	85	Pass
46.7825	772	640	82	Pass
49.4347	710	597	84	Pass
52.0869	650	552	84	Pass
54.7391	602	508	84	Pass
57.3913	567	472	83	Pass
60.0435	521	432	82	Pass
62.6957	477	398	83	Pass
65.3479	445	357	80	Pass
68.0001	414	327	78	Pass
70.6523	385	293	76	Pass
73.3045	348	270	77	Pass
75.9567	308	245	79	Pass
78.6089	284	229	80	Pass
81.2611	263	211	80	Pass
83.9133	243	190	78	Pass
86.5655	224	180	80	Pass
89.2177	206	164	79	Pass
91.8699	186	143	76	Pass
94.5221	168	134	79	Pass
97.1743	154	123	79	Pass
99.8265	139	113	81	Pass
102.4787	128	106	82	Pass
105.1310	122	94	77	Pass
107.7832	117	89	76	Pass
110.4354	106	85	80	Pass
113.0876	98	78	79	Pass
115.7398	89	72	80	Pass
118.3920	85	69	81	Pass
121.0442	80	66	82	Pass
123.6964	78	61	78	Pass
126.3486	74	57	77	Pass
129.0008	69	53	76	Pass
131.6530	66	50	75	Pass
134.3052	62	44	70	Pass
136.9574	61	42	68	Pass
139.6096	59	39	66	Pass
142.2618	56	37	66	Pass
144.9140	51	36	70	Pass
147.5662	47	34	72	Pass
150.2184	44	32	72	Pass
152.8706	41	30	73	Pass
155.5228	37	28	75	Pass
158.1750	36	27	75	Pass
160.8272	34	26	76	Pass
163.4795	32	24	75	Pass
166.1317	30	23	76	Pass

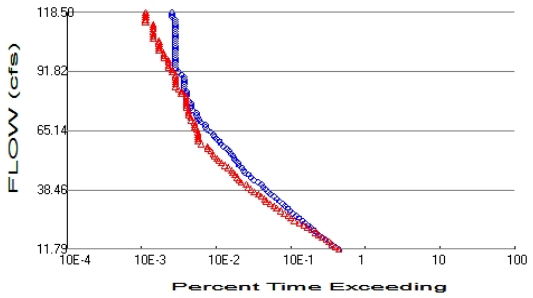
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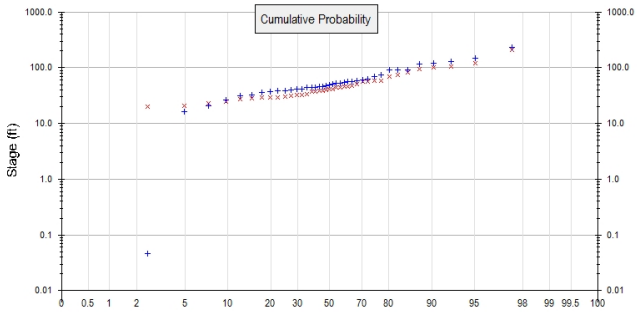
168.7839	28	22	78	Pass
171.4361	27	21	77	Pass
174.0883	25	19	76	Pass
176.7405	24	19	79	Pass
179.3927	23	18	78	Pass
182.0449	23	18	78	Pass
184.6971	22	17	77	Pass
187.3493	21	17	80	Pass
190.0015	19	17	89	Pass
192.6537	19	17	89	Pass
195.3059	19	17	89	Pass
197.9581	17	17	100	Pass
200.6103	17	16	94	Pass
203.2625	17	14	82	Pass
205.9147	16	14	87	Pass
208.5669	16	14	87	Pass
211.2191	15	14	93	Pass
213.8713	14	14	100	Pass
216.5235	14	13	92	Pass
219.1757	13	13	100	Pass
221.8280	13	13	100	Pass
224.4802	13	11	84	Pass
227.1324	13	11	84	Pass
229.7846	13	11	84	Pass
232.4368	13	11	84	Pass
235.0890	12	11	91	Pass
237.7412	12	11	91	Pass
240.3934	12	11	91	Pass
243.0456	12	11	91	Pass
245.6978	11	11	100	Pass
248.3500	10	10	100	Pass
251.0022	10	9	90	Pass
253.6544	10	9	90	Pass
256.3066	10	8	80	Pass
258.9588	10	8	80	Pass
261.6110	10	8	80	Pass
264.2632	10	8	80	Pass
266.9154	9	7	77	Pass
269.5676	9	6	66	Pass
272.2198	9	6	66	Pass
274.8720	9	5	55	Pass
277.5242	9	5	55	Pass
280.1765	9	5	55	Pass
282.8287	9	5	55	Pass
285.4809	9	5	55	Pass
288.1331	9	5	55	Pass
290.7853	9	5	55	Pass

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POC 25





\+ Pre-Project x Mitigated

Pre-Project Landuse Totals for POC #25
Total Pervious Area: 189.79
Total Impervious Area: 0

Mitigated Landuse Totals for POC #25
Total Pervious Area: 117.67
Total Impervious Area: 76.08

Flow Frequency Method: Log Pearson Type III 17B

Flow Frequency Return Periods for Pre-Project. POC #25

Return Period	**Flow(cfs)**
2 year	47.14169
5 year	86.850132
10 year	118.499293
25 year	165.974707

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Flow Frequency Return Periods for Mitigated. POC #25

Return Period	**Flow(cfs)**
2 year	38.858827
5 year	67.064517
10 year	99.274098
25 year	139.456878

Annual Peaks

Annual Peaks for Pre-Project and Mitigated. POC #25

Year	**Pre-Project**	**Mitigated**
1965	50.216	44.107
1966	20.898	20.576
1967	52.944	47.395
1968	32.846	30.088
1969	52.629	36.945
1970	46.445	36.956
1971	56.755	39.374
1972	26.915	27.823
1973	91.756	83.957
1974	74.204	58.203
1975	40.833	28.622
1976	0.047	20.374
1977	0.020	5.550
1978	129.714	100.111
1979	36.840	33.848

1980	41.430	32.322
1981	45.679	46.394
1982	69.451	58.807
1983	91.346	69.387
1984	48.806	44.960
1985	44.044	28.890
1986	148.176	118.729
1987	38.402	31.699
1988	44.483	38.250
1989	57.117	56.058
1990	38.699	28.927
1991	44.003	41.611
1992	61.887	56.666
1993	54.662	38.368
1994	16.401	23.005
1995	229.259	213.156
1996	115.895	105.975
1997	118.861	93.248
1998	90.407	75.207
1999	31.945	25.032
2000	61.030	51.215
2001	39.889	28.922
2002	35.701	32.140
2003	47.873	45.907
2004	58.366	41.821

Ranked Annual Peaks

Ranked Annual Peaks for Pre-Project and Mitigated. POC #25

Rank	Pre-Project	Mitigated
1	229.2590	213.1560
2	148.1760	118.7290
3	129.7140	105.9750
4	118.8610	100.1110
5	115.8950	93.2484
6	91.7559	83.9572
7	91.3464	75.2074
8	90.4068	69.3870
9	74.2042	58.8068
10	69.4512	58.2031
11	61.8872	56.6664
12	61.0303	56.0579
13	58.3660	51.2151
14	57.1174	47.3945
15	56.7554	46.3936
16	54.6618	45.9074
17	52.9443	44.9602
18	52.6290	44.1071
19	50.2160	41.8205
20	48.8062	41.6106
21	47.8729	39.3743
22	46.4453	38.3679
23	45.6785	38.2501
24	44.4834	36.9564
25	44.0435	36.9451
26	44.0027	33.8480
27	41.4297	32.3221
28	40.8328	32.1404
29	39.8891	31.6994

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30	38.6986	30.0884
31	38.4017	28.9267
32	36.8400	28.9218
33	35.7005	28.8895
34	32.8464	28.6216
35	31.9446	27.8230
36	26.9153	25.0324
37	20.8984	23.0054
38	16.4009	20.5762
39	0.0467	20.3740
40	0.0204	5.5502

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Duration Flows

The Facility PASSED

Flow(cfs)	Predev	Mit	Percentage	Pass/Fail
11.7854	1527	1540	100	Pass
12.8633	1395	1386	99	Pass
13.9413	1251	1248	99	Pass
15.0192	1135	1144	100	Pass
16.0971	1009	1041	103	Pass
17.1750	910	922	101	Pass
18.2529	833	822	98	Pass
19.3308	772	747	96	Pass
20.4088	708	665	93	Pass
21.4867	649	581	89	Pass
22.5646	596	523	87	Pass
23.6425	546	458	83	Pass
24.7204	501	394	78	Pass
25.7984	453	352	77	Pass
26.8763	416	324	77	Pass
27.9542	375	287	76	Pass
29.0321	346	256	73	Pass
30.1100	319	227	71	Pass
31.1879	296	209	70	Pass
32.2659	276	186	67	Pass
33.3438	249	165	66	Pass
34.4217	229	156	68	Pass
35.4996	209	141	67	Pass
36.5775	189	129	68	Pass
37.6555	175	114	65	Pass
38.7334	160	103	64	Pass
39.8113	150	93	62	Pass
40.8892	141	89	63	Pass
41.9671	127	76	59	Pass
43.0450	111	71	63	Pass
44.1230	102	67	65	Pass
45.2009	95	62	65	Pass
46.2788	85	59	69	Pass
47.3567	82	56	68	Pass
48.4346	78	51	65	Pass
49.5125	72	46	63	Pass
50.5905	68	41	60	Pass
51.6684	64	38	59	Pass
52.7463	61	36	59	Pass
53.8242	59	33	55	Pass
54.9021	55	32	58	Pass
55.9801	52	30	57	Pass
57.0580	49	27	55	Pass
58.1359	44	27	61	Pass
59.2138	41	22	53	Pass
60.2917	39	20	51	Pass
61.3696	36	20	55	Pass
62.4476	33	20	60	Pass
63.5255	32	20	62	Pass
64.6034	30	20	66	Pass
65.6813	26	19	73	Pass
66.7592	25	18	72	Pass
67.8372	25	18	72	Pass

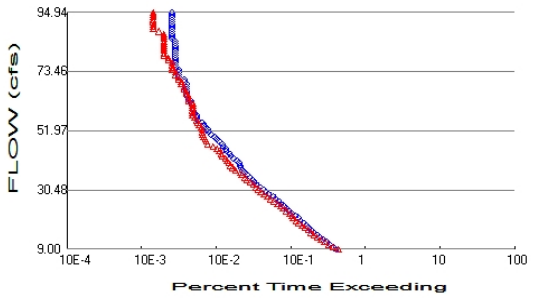
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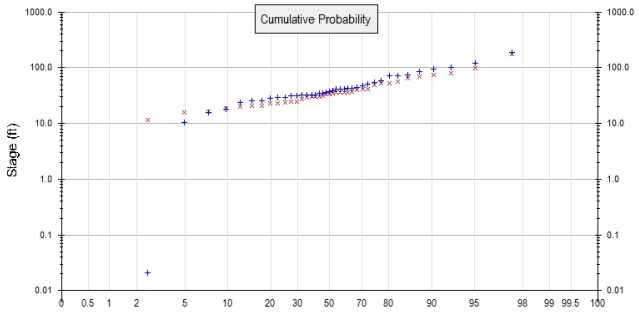
68.9151	22	18	81	Pass
69.9930	21	16	76	Pass
71.0709	20	16	80	Pass
72.1488	19	15	78	Pass
73.2267	19	15	78	Pass
74.3047	17	15	88	Pass
75.3826	16	14	87	Pass
76.4605	16	14	87	Pass
77.5384	16	14	87	Pass
78.6163	15	14	93	Pass
79.6942	14	14	100	Pass
80.7722	14	14	100	Pass
81.8501	14	12	85	Pass
82.9280	14	12	85	Pass
84.0059	13	11	84	Pass
85.0838	13	10	76	Pass
86.1618	13	10	76	Pass
87.2397	13	10	76	Pass
88.3176	13	10	76	Pass
89.3955	13	10	76	Pass
90.4734	12	10	83	Pass
91.5513	11	9	81	Pass
92.6293	10	9	90	Pass
93.7072	10	8	80	Pass
94.7851	10	8	80	Pass
95.8630	10	8	80	Pass
96.9409	10	8	80	Pass
98.0189	10	7	70	Pass
99.0968	10	7	70	Pass
100.1747	10	7	70	Pass
101.2526	10	6	60	Pass
102.3305	10	6	60	Pass
103.4084	10	6	60	Pass
104.4864	10	6	60	Pass
105.5643	10	6	60	Pass
106.6422	10	5	50	Pass
107.7201	10	5	50	Pass
108.7980	10	5	50	Pass
109.8759	10	5	50	Pass
110.9539	10	5	50	Pass
112.0318	10	5	50	Pass
113.1097	10	5	50	Pass
114.1876	10	4	40	Pass
115.2655	10	4	40	Pass
116.3435	9	4	44	Pass
117.4214	9	4	44	Pass
118.4993	9	4	44	Pass

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POC 26





\+ Pre-Project x Mitigated

Pre-Project Landuse Totals for POC #26
Total Pervious Area: 159.74
Total Impervious Area: 0

Mitigated Landuse Totals for POC #26
Total Pervious Area: 113.13
Total Impervious Area: 47.85

Flow Frequency Method: Log Pearson Type III 17B

Flow Frequency Return Periods for Pre-Project. POC #26

Return Period	**Flow(cfs)**
2 year	35.985907
5 year	67.896602
10 year	94.943346
25 year	134.879805

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Flow Frequency Return Periods for Mitigated. POC #26

Return Period	**Flow(cfs)**
2 year	32.591276
5 year	53.315568
10 year	72.81419
25 year	114.639746

Annual Peaks

Annual Peaks for Pre-Project and Mitigated. POC #26

Year	**Pre-Project**	**Mitigated**
1965	38.297	30.424
1966	16.018	16.491
1967	41.884	40.805
1968	25.705	24.152
1969	42.120	30.186
1970	35.350	34.318
1971	44.084	29.536
1972	18.395	15.687
1973	70.775	57.275
1974	57.662	36.348
1975	30.951	19.040
1976	0.021	11.751
1977	0.020	1.750
1978	102.695	73.368
1979	28.225	20.456

1980	32.303	29.891
1981	32.978	31.736
1982	55.339	49.808
1983	70.801	52.835
1984	36.653	33.489
1985	32.168	24.630
1986	120.131	97.473
1987	28.894	27.621
1988	32.647	35.554
1989	42.448	33.626
1990	29.344	23.157
1991	35.342	35.531
1992	50.673	53.451
1993	43.047	35.830
1994	10.557	19.893
1995	187.320	175.676
1996	85.163	64.879
1997	96.302	78.665
1998	74.319	68.828
1999	24.127	20.630
2000	48.251	41.845
2001	31.770	25.040
2002	25.171	23.250
2003	37.591	36.805
2004	41.893	39.494

Ranked Annual Peaks

Ranked Annual Peaks for Pre-Project and Mitigated. POC #26

Rank	Pre-Project	Mitigated
1	187.3200	175.6760
2	120.1310	97.4733
3	102.6950	78.6650
4	96.3017	73.3678
5	85.1632	68.8282
6	74.3186	64.8791
7	70.8006	57.2751
8	70.7750	53.4507
9	57.6623	52.8351
10	55.3393	49.8079
11	50.6725	41.8447
12	48.2505	40.8048
13	44.0837	39.4943
14	43.0467	36.8045
15	42.4475	36.3479
16	42.1198	35.8304
17	41.8934	35.5535
18	41.8843	35.5310
19	38.2968	34.3179
20	37.5912	33.6257
21	36.6534	33.4890
22	35.3502	31.7363
23	35.3422	30.4240
24	32.9779	30.1860
25	32.6465	29.8908
26	32.3032	29.5364
27	32.1678	27.6208
28	31.7698	25.0399
29	30.9511	24.6298

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30	29.3442	24.1519
31	28.8942	23.2502
32	28.2248	23.1573
33	25.7053	20.6300
34	25.1705	20.4558
35	24.1274	19.8933
36	18.3947	19.0400
37	16.0182	16.4908
38	10.5566	15.6874
39	0.0209	11.7508
40	0.0201	1.7503

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Duration Flows

The Facility PASSED

Flow(cfs)	Predev	Mit	Percentage	Pass/Fail
8.9965	1414	1522	107	Pass
9.8646	1304	1293	99	Pass
10.7328	1174	1123	95	Pass
11.6009	1055	994	94	Pass
12.4691	954	891	93	Pass
13.3372	860	797	92	Pass
14.2054	787	718	91	Pass
15.0735	720	664	92	Pass
15.9417	655	600	91	Pass
16.8098	600	541	90	Pass
17.6780	564	497	88	Pass
18.5461	516	450	87	Pass
19.4143	473	414	87	Pass
20.2824	440	381	86	Pass
21.1506	405	362	89	Pass
22.0187	362	337	93	Pass
22.8869	330	307	93	Pass
23.7550	304	278	91	Pass
24.6232	283	257	90	Pass
25.4913	260	231	88	Pass
26.3595	242	209	86	Pass
27.2276	219	187	85	Pass
28.0958	203	170	83	Pass
28.9639	178	153	85	Pass
29.8321	160	140	87	Pass
30.7002	153	129	84	Pass
31.5684	136	119	87	Pass
32.4365	121	111	91	Pass
33.3047	113	100	88	Pass
34.1728	107	90	84	Pass
35.0410	100	86	86	Pass
35.9091	91	78	85	Pass
36.7773	84	75	89	Pass
37.6454	79	64	81	Pass
38.5136	75	59	78	Pass
39.3817	74	55	74	Pass
40.2499	71	52	73	Pass
41.1180	66	49	74	Pass
41.9862	60	47	78	Pass
42.8543	56	42	75	Pass
43.7225	53	41	77	Pass
44.5906	48	39	81	Pass
45.4588	47	36	76	Pass
46.3269	43	32	74	Pass
47.1951	42	27	64	Pass
48.0632	38	26	68	Pass
48.9314	36	25	69	Pass
49.7995	33	24	72	Pass
50.6677	30	23	76	Pass
51.5358	28	23	82	Pass
52.4040	27	23	85	Pass
53.2721	25	22	88	Pass
54.1403	24	21	87	Pass

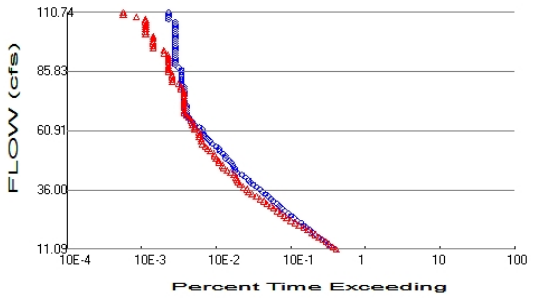
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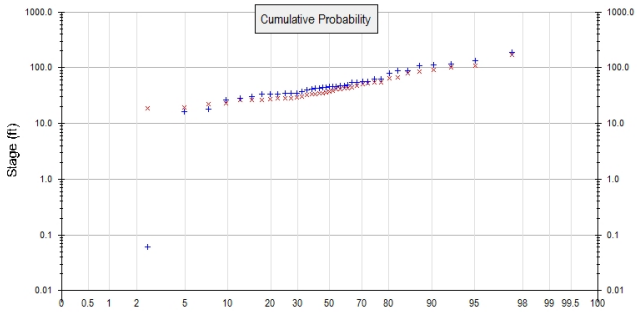
55.0084	23	20	86	Pass
55.8766	20	19	95	Pass
56.7447	19	18	94	Pass
57.6129	19	17	89	Pass
58.4810	18	17	94	Pass
59.3492	17	17	100	Pass
60.2173	17	17	100	Pass
61.0855	17	17	100	Pass
61.9536	16	17	106	Pass
62.8218	16	15	93	Pass
63.6899	15	15	100	Pass
64.5581	14	15	107	Pass
65.4262	14	14	100	Pass
66.2944	14	14	100	Pass
67.1625	14	13	92	Pass
68.0307	14	13	92	Pass
68.8988	14	12	85	Pass
69.7670	13	12	92	Pass
70.6351	13	11	84	Pass
71.5033	11	11	100	Pass
72.3714	11	10	90	Pass
73.2396	11	10	90	Pass
74.1077	11	9	81	Pass
74.9759	10	9	90	Pass
75.8440	10	9	90	Pass
76.7122	10	9	90	Pass
77.5803	10	8	80	Pass
78.4485	10	8	80	Pass
79.3166	10	7	70	Pass
80.1848	10	7	70	Pass
81.0529	10	7	70	Pass
81.9211	10	7	70	Pass
82.7892	10	7	70	Pass
83.6574	10	7	70	Pass
84.5255	10	7	70	Pass
85.3937	9	7	77	Pass
86.2618	9	7	77	Pass
87.1300	9	7	77	Pass
87.9981	9	6	66	Pass
88.8663	9	5	55	Pass
89.7344	9	5	55	Pass
90.6026	9	5	55	Pass
91.4707	9	5	55	Pass
92.3389	9	5	55	Pass
93.2070	9	5	55	Pass
94.0752	9	5	55	Pass
94.9433	9	5	55	Pass

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POC 27





\+ Pre-Project x Mitigated

Pre-Project Landuse Totals for POC #27
Total Pervious Area: 161.4
Total Impervious Area: 0

Mitigated Landuse Totals for POC #27
Total Pervious Area: 80.21
Total Impervious Area: 66.69

Flow Frequency Method: Log Pearson Type III 17B

Flow Frequency Return Periods for Pre-Project. POC #27

Return Period	**Flow(cfs)**
2 year	44.36741
5 year	76.696068
10 year	110.737049
25 year	147.810537

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Flow Frequency Return Periods for Mitigated. POC #27

Return Period	**Flow(cfs)**
2 year	35.761295
5 year	62.401951
10 year	91.901371
25 year	122.776463

Annual Peaks

Annual Peaks for Pre-Project and Mitigated. POC #27

Year	**Pre-Project**	**Mitigated**
1965	47.455	41.659
1966	18.147	18.617
1967	48.600	42.872
1968	30.073	27.987
1969	46.642	33.913
1970	42.784	33.172
1971	47.276	36.429
1972	26.382	28.100
1973	88.243	80.184
1974	63.377	55.110
1975	33.348	26.835
1976	0.061	19.565
1977	0.031	5.454
1978	116.104	92.789
1979	35.332	32.172

1980	37.054	29.556
1981	45.784	44.265
1982	62.276	53.701
1983	87.466	64.453
1984	46.068	42.372
1985	42.391	27.115
1986	135.326	109.692
1987	34.477	28.489
1988	39.656	34.985
1989	55.682	53.465
1990	34.695	26.096
1991	41.280	38.156
1992	54.190	51.625
1993	44.976	35.125
1994	16.301	22.831
1995	192.200	169.299
1996	111.229	100.810
1997	107.195	85.513
1998	80.442	66.766
1999	28.189	22.057
2000	54.736	48.386
2001	33.819	26.230
2002	34.093	30.857
2003	43.788	42.116
2004	56.501	37.586

Ranked Annual Peaks

Ranked Annual Peaks for Pre-Project and Mitigated. POC #27

Rank	Pre-Project	Mitigated
1	192.2000	169.2990
2	135.3260	109.6920
3	116.1040	100.8100
4	111.2290	92.7887
5	107.1950	85.5126
6	88.2433	80.1844
7	87.4664	66.7660
8	80.4420	64.4527
9	63.3772	55.1104
10	62.2762	53.7011
11	56.5008	53.4648
12	55.6815	51.6254
13	54.7357	48.3855
14	54.1903	44.2650
15	48.5997	42.8716
16	47.4551	42.3720
17	47.2759	42.1160
18	46.6422	41.6587
19	46.0679	38.1560
20	45.7835	37.5864
21	44.9760	36.4293
22	43.7878	35.1251
23	42.7840	34.9848
24	42.3905	33.9125
25	41.2802	33.1716
26	39.6555	32.1724
27	37.0536	30.8574
28	35.3322	29.5556
29	34.6954	28.4888

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30	34.4768	28.1003
31	34.0929	27.9865
32	33.8185	27.1148
33	33.3480	26.8348
34	30.0726	26.2302
35	28.1890	26.0960
36	26.3817	22.8314
37	18.1468	22.0574
38	16.3013	19.5651
39	0.0610	18.6172
40	0.0307	5.4536

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Duration Flows

The Facility PASSED

Flow(cfs)	Predev	Mit	Percentage	Pass/Fail
11.0919	1381	1433	103	Pass
12.0984	1245	1294	103	Pass
13.1049	1108	1158	104	Pass
14.1114	1013	1050	103	Pass
15.1179	916	943	102	Pass
16.1244	830	833	100	Pass
17.1310	742	750	101	Pass
18.1375	687	669	97	Pass
19.1440	629	597	94	Pass
20.1505	563	526	93	Pass
21.1570	519	452	87	Pass
22.1635	482	401	83	Pass
23.1701	424	356	83	Pass
24.1766	385	310	80	Pass
25.1831	353	284	80	Pass
26.1896	322	254	78	Pass
27.1961	296	231	78	Pass
28.2026	265	207	78	Pass
29.2092	247	190	76	Pass
30.2157	232	168	72	Pass
31.2222	205	153	74	Pass
32.2287	191	136	71	Pass
33.2352	175	122	69	Pass
34.2417	160	106	66	Pass
35.2483	147	95	64	Pass
36.2548	135	92	68	Pass
37.2613	124	81	65	Pass
38.2678	110	73	66	Pass
39.2743	101	68	67	Pass
40.2808	96	66	68	Pass
41.2874	87	65	74	Pass
42.2939	78	60	76	Pass
43.3004	66	55	83	Pass
44.3069	63	49	77	Pass
45.3134	62	44	70	Pass
46.3200	59	43	72	Pass
47.3265	56	38	67	Pass
48.3330	52	38	73	Pass
49.3395	47	35	74	Pass
50.3460	47	34	72	Pass
51.3525	43	33	76	Pass
52.3591	39	29	74	Pass
53.3656	38	27	71	Pass
54.3721	35	25	71	Pass
55.3786	31	23	74	Pass
56.3851	29	22	75	Pass
57.3916	27	22	81	Pass
58.3982	25	21	84	Pass
59.4047	24	21	87	Pass
60.4112	23	21	91	Pass
61.4177	23	18	78	Pass
62.4242	21	18	85	Pass
63.4307	18	17	94	Pass

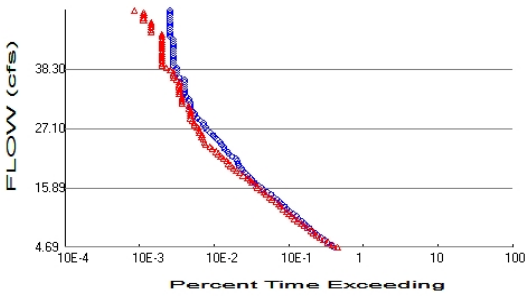
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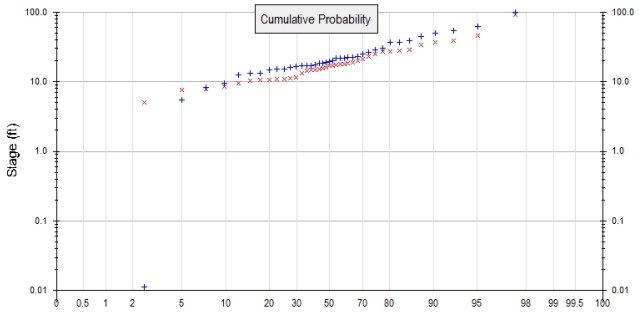
64.4373	17	17	100	Pass
65.4438	16	16	100	Pass
66.4503	15	15	100	Pass
67.4568	14	14	100	Pass
68.4633	14	13	92	Pass
69.4698	14	13	92	Pass
70.4764	14	13	92	Pass
71.4829	14	13	92	Pass
72.4894	13	13	100	Pass
73.4959	13	13	100	Pass
74.5024	13	13	100	Pass
75.5089	13	13	100	Pass
76.5155	13	13	100	Pass
77.5220	13	13	100	Pass
78.5285	13	12	92	Pass
79.5350	13	12	92	Pass
80.5415	12	11	91	Pass
81.5481	12	9	75	Pass
82.5546	12	9	75	Pass
83.5611	12	9	75	Pass
84.5676	12	9	75	Pass
85.5741	12	8	66	Pass
86.5806	12	8	66	Pass
87.5872	11	8	72	Pass
88.5937	10	8	80	Pass
89.6002	10	8	80	Pass
90.6067	10	8	80	Pass
91.6132	10	8	80	Pass
92.6197	10	8	80	Pass
93.6263	10	7	70	Pass
94.6328	10	7	70	Pass
95.6393	10	5	50	Pass
96.6458	10	5	50	Pass
97.6523	10	5	50	Pass
98.6588	10	5	50	Pass
99.6654	10	5	50	Pass
100.6719	10	5	50	Pass
101.6784	10	4	40	Pass
102.6849	10	4	40	Pass
103.6914	10	4	40	Pass
104.6979	10	4	40	Pass
105.7045	10	4	40	Pass
106.7110	10	4	40	Pass
107.7175	8	4	50	Pass
108.7240	8	3	37	Pass
109.7305	8	2	25	Pass
110.7370	8	2	25	Pass

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POC 28





\+ Pre-Project x Mitigated

Pre-Project Landuse Totals for POC #28
Total Pervious Area: 83.53
Total Impervious Area: 0

Mitigated Landuse Totals for POC #28
Total Pervious Area: 68.94
Total Impervious Area: 21.85

Flow Frequency Method: Log Pearson Type III 17B

Flow Frequency Return Periods for Pre-Project. POC #28

Return Period	**Flow(cfs)**
2 year	18.75231
5 year	35.348273
10 year	49.5095
25 year	70.3791

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Flow Frequency Return Periods for Mitigated. POC #28

Return Period	**Flow(cfs)**
2 year	15.907829
5 year	27.391934
10 year	36.118468
25 year	55.24231

Annual Peaks

Annual Peaks for Pre-Project and Mitigated. POC #28

Year	**Pre-Project**	**Mitigated**
1965	19.928	15.759
1966	8.373	7.914
1967	21.839	21.091
1968	13.416	11.209
1969	21.995	14.595
1970	18.424	17.179
1971	23.054	15.268
1972	9.569	7.588
1973	36.816	27.422
1974	30.130	16.882
1975	16.204	8.614
1976	0.011	5.006
1977	0.011	0.568
1978	53.578	33.374
1979	14.697	10.682

1980	16.875	14.483
1981	17.291	14.862
1982	28.881	24.819
1983	36.853	27.286
1984	19.075	17.672
1985	16.864	10.943
1986	62.617	45.399
1987	15.063	13.275
1988	17.025	18.378
1989	22.069	16.064
1990	15.316	10.272
1991	18.445	17.934
1992	26.512	27.719
1993	22.543	17.694
1994	5.526	9.564
1995	97.979	90.241
1996	44.297	28.817
1997	50.234	38.512
1998	38.792	36.500
1999	12.587	10.504
2000	25.263	22.852
2001	16.627	11.506
2002	13.097	10.887
2003	19.616	18.688
2004	21.846	20.004

Ranked Annual Peaks

Ranked Annual Peaks for Pre-Project and Mitigated. POC #28

Rank	Pre-Project	Mitigated
1	97.9791	90.2411
2	62.6166	45.3989
3	53.5781	38.5122
4	50.2335	36.4997
5	44.2967	33.3736
6	38.7916	28.8167
7	36.8530	27.7189
8	36.8158	27.4217
9	30.1304	27.2861
10	28.8805	24.8194
11	26.5123	22.8524
12	25.2634	21.0911
13	23.0539	20.0043
14	22.5427	18.6882
15	22.0688	18.3778
16	21.9945	17.9338
17	21.8460	17.6941
18	21.8389	17.6720
19	19.9277	17.1792
20	19.6156	16.8819
21	19.0753	16.0641
22	18.4447	15.7590
23	18.4243	15.2684
24	17.2908	14.8617
25	17.0249	14.5947
26	16.8754	14.4825
27	16.8644	13.2752
28	16.6266	11.5057
29	16.2036	11.2090

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30	15.3157	10.9426
31	15.0631	10.8869
32	14.6970	10.6822
33	13.4158	10.5042
34	13.0966	10.2723
35	12.5867	9.5637
36	9.5693	8.6137
37	8.3729	7.9135
38	5.5265	7.5878
39	0.0111	5.0060
40	0.0107	0.5678

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Duration Flows

The Facility PASSED

Flow(cfs)	Predev	Mit	Percentage	Pass/Fail
4.6881	1416	1570	110	Pass
5.1408	1311	1363	103	Pass
5.5936	1180	1184	100	Pass
6.0463	1061	1039	97	Pass
6.4990	956	915	95	Pass
6.9518	863	826	95	Pass
7.4045	788	752	95	Pass
7.8573	727	697	95	Pass
8.3100	658	625	94	Pass
8.7628	601	565	94	Pass
9.2155	562	511	90	Pass
9.6682	519	462	89	Pass
10.1210	476	420	88	Pass
10.5737	441	384	87	Pass
11.0265	404	353	87	Pass
11.4792	364	326	89	Pass
11.9319	332	293	88	Pass
12.3847	309	271	87	Pass
12.8374	286	256	89	Pass
13.2902	264	237	89	Pass
13.7429	244	209	85	Pass
14.1957	223	193	86	Pass
14.6484	203	173	85	Pass
15.1011	179	164	91	Pass
15.5539	160	150	93	Pass
16.0066	153	135	88	Pass
16.4594	136	127	93	Pass
16.9121	121	114	94	Pass
17.3648	113	107	94	Pass
17.8176	107	98	91	Pass
18.2703	101	86	85	Pass
18.7231	91	77	84	Pass
19.1758	84	69	82	Pass
19.6286	81	64	79	Pass
20.0813	75	59	78	Pass
20.5340	74	54	72	Pass
20.9868	71	52	73	Pass
21.4395	68	47	69	Pass
21.8923	61	43	70	Pass
22.3450	55	40	72	Pass
22.7977	53	37	69	Pass
23.2505	48	33	68	Pass
23.7032	47	31	65	Pass
24.1560	44	27	61	Pass
24.6087	42	26	61	Pass
25.0615	38	25	65	Pass
25.5142	36	24	66	Pass
25.9669	34	24	70	Pass
26.4197	31	22	70	Pass
26.8724	28	22	78	Pass
27.3252	27	21	77	Pass
27.7779	25	19	76	Pass
28.2306	25	19	76	Pass

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28.6834	23	18	78	Pass
29.1361	21	17	80	Pass
29.5889	19	17	89	Pass
30.0416	19	17	89	Pass
30.4944	18	17	94	Pass
30.9471	17	16	94	Pass
31.3998	17	16	94	Pass
31.8526	17	13	76	Pass
32.3053	16	13	81	Pass
32.7581	16	13	81	Pass
33.2108	15	13	86	Pass
33.6635	14	12	85	Pass
34.1163	14	12	85	Pass
34.5690	14	12	85	Pass
35.0218	14	12	85	Pass
35.4745	14	12	85	Pass
35.9273	14	12	85	Pass
36.3800	14	11	78	Pass
36.8327	12	10	83	Pass
37.2855	11	10	90	Pass
37.7382	11	10	90	Pass
38.1910	11	9	81	Pass
38.6437	11	8	72	Pass
39.0964	10	7	70	Pass
39.5492	10	7	70	Pass
40.0019	10	7	70	Pass
40.4547	10	7	70	Pass
40.9074	10	7	70	Pass
41.3602	10	7	70	Pass
41.8129	10	7	70	Pass
42.2656	10	7	70	Pass
42.7184	10	7	70	Pass
43.1711	10	7	70	Pass
43.6239	10	7	70	Pass
44.0766	10	7	70	Pass
44.5293	9	7	77	Pass
44.9821	9	7	77	Pass
45.4348	9	5	55	Pass
45.8876	9	5	55	Pass
46.3403	9	5	55	Pass
46.7931	9	5	55	Pass
47.2458	9	5	55	Pass
47.6985	9	4	44	Pass
48.1513	9	4	44	Pass
48.6040	9	4	44	Pass
49.0568	9	4	44	Pass
49.5095	9	3	33	Pass

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Model Default Modifications

Total of 0 changes have been made.

PERLND Changes

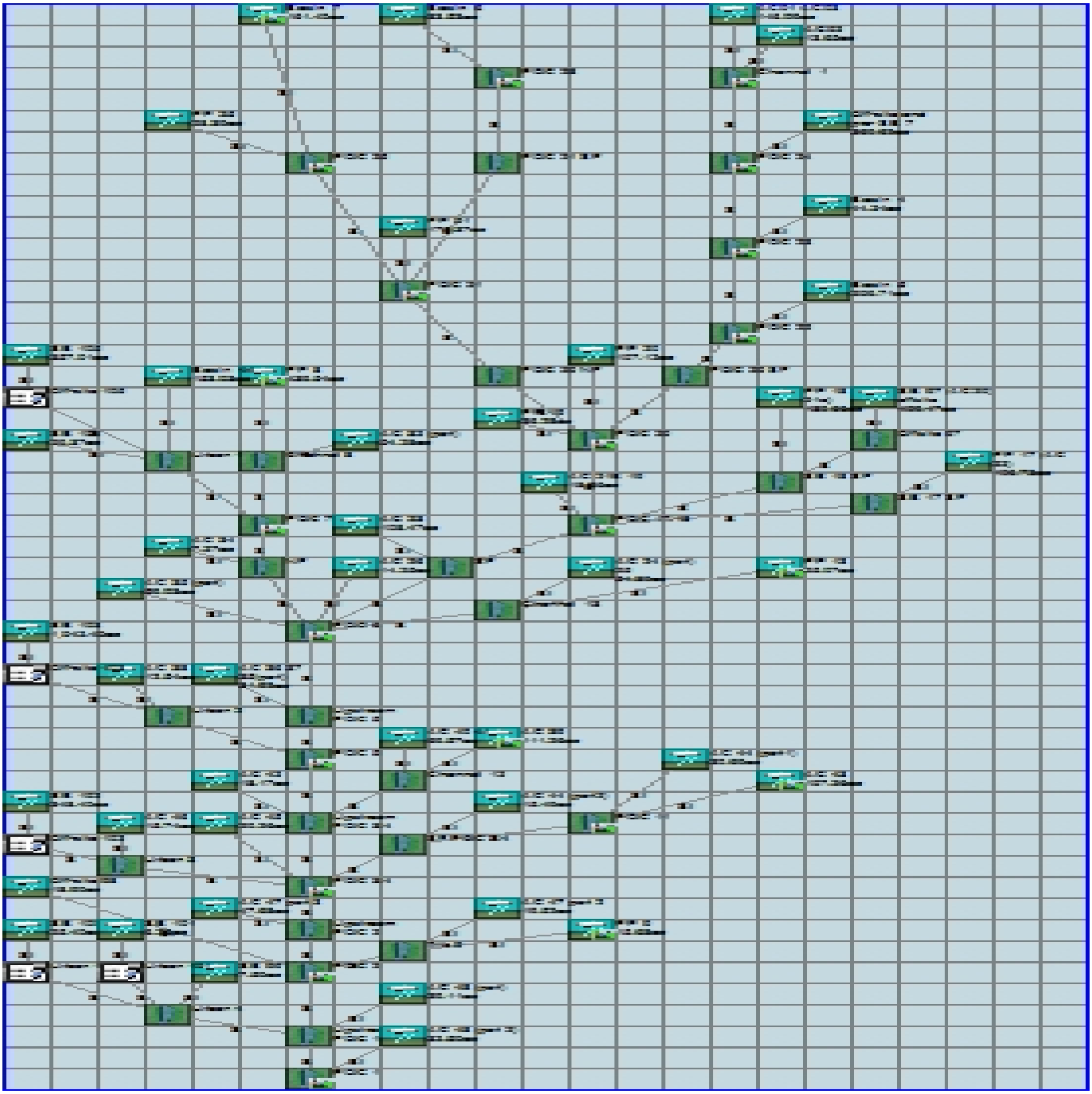
No PERLND changes have been made.

IMPLND Changes

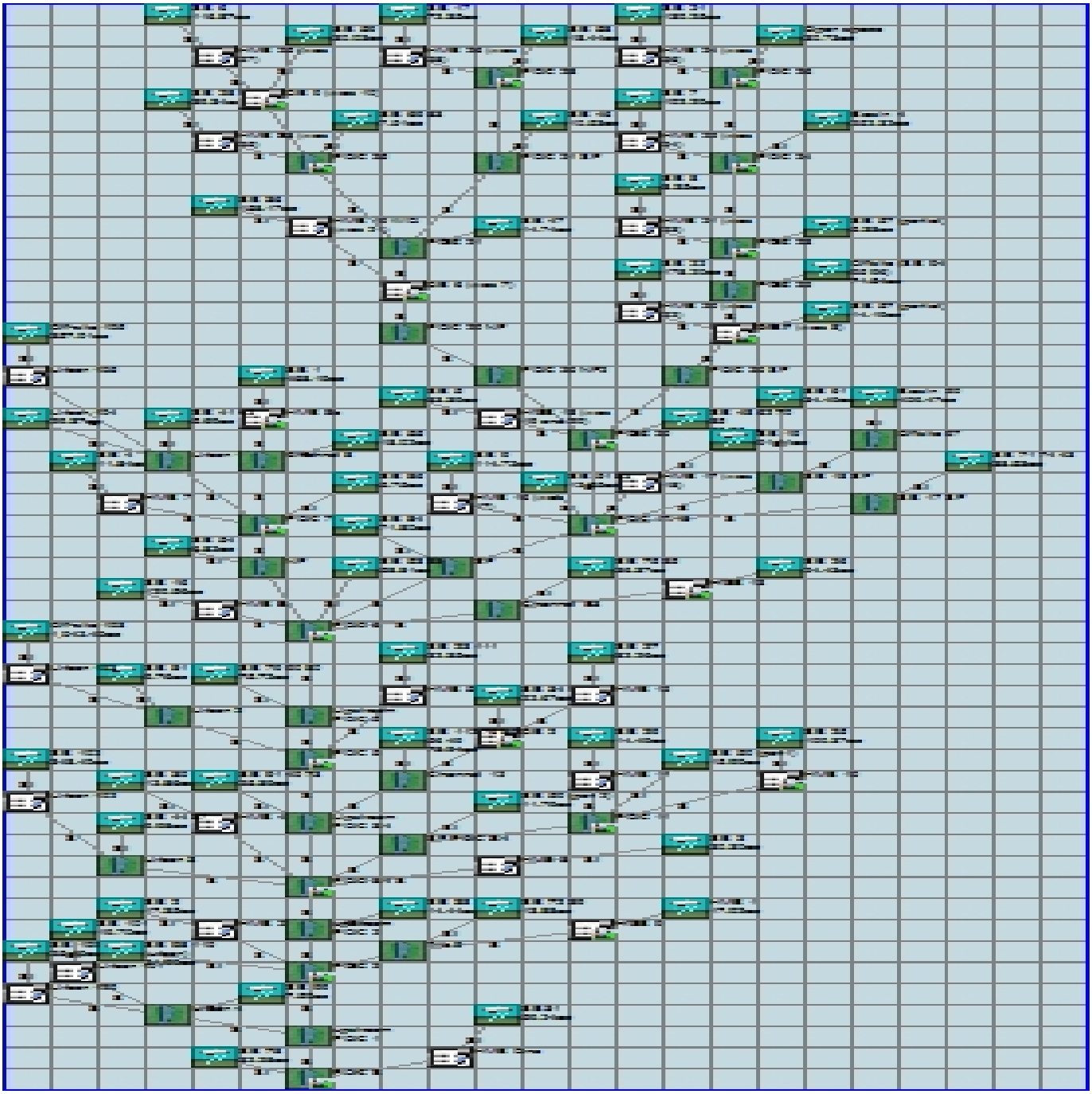
No IMPLND changes have been made.

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Appendix
Pre-Project Schematic



Mitigated Schematic



Pre-Project UCI File

```
RUN

GLOBAL
  WWHM4 model simulation
  START       1964 10 01        END    2004 09 30
  RUN INTERP OUTPUT LEVEL    3    0
  RESUME     0 RUN     1                    UNIT SYSTEM     1
END GLOBAL

FILES
<File>  <Un#>   <-----------File Name------------------------------>***
<-ID->                                                              ***
WDM         26   Folsom SOI_networked_ver 9-10a.wdm
MESSU       25   PreFolsom SOI_networked_ver 9-10a.MES
            27   PreFolsom SOI_networked_ver 9-10a.L61
            28   PreFolsom SOI_networked_ver 9-10a.L62
            30   POCFolsom SOI_networked_ver 9-10a1.dat
            31   POCFolsom SOI_networked_ver 9-10a2.dat
            32   POCFolsom SOI_networked_ver 9-10a3.dat
            33   POCFolsom SOI_networked_ver 9-10a4.dat
            34   POCFolsom SOI_networked_ver 9-10a5.dat
            35   POCFolsom SOI_networked_ver 9-10a6.dat
            36   POCFolsom SOI_networked_ver 9-10a7.dat
            37   POCFolsom SOI_networked_ver 9-10a8.dat
            38   POCFolsom SOI_networked_ver 9-10a9.dat
            39   POCFolsom SOI_networked_ver 9-10a10.dat
            40   POCFolsom SOI_networked_ver 9-10a11.dat
            41   POCFolsom SOI_networked_ver 9-10a12.dat
            42   POCFolsom SOI_networked_ver 9-10a13.dat
            43   POCFolsom SOI_networked_ver 9-10a14.dat
            44   POCFolsom SOI_networked_ver 9-10a15.dat
            45   POCFolsom SOI_networked_ver 9-10a16.dat
            46   POCFolsom SOI_networked_ver 9-10a17.dat
            47   POCFolsom SOI_networked_ver 9-10a18.dat
            48   POCFolsom SOI_networked_ver 9-10a19.dat
            49   POCFolsom SOI_networked_ver 9-10a20.dat
            50   POCFolsom SOI_networked_ver 9-10a21.dat
            51   POCFolsom SOI_networked_ver 9-10a22.dat
END FILES

OPN SEQUENCE
    INGRP              INDELT 00:60
      PERLND      51
      PERLND      50
      PERLND      52
      PERLND      49
      IMPLND       3
      PERLND      58
      IMPLND       2
      PERLND      41
      PERLND      34
      PERLND      33
      IMPLND       1
      PERLND      17
      PERLND      35
      PERLND      19
      RCHRES       1
      RCHRES       2
      RCHRES       3
      RCHRES       4
      RCHRES       5
      RCHRES       6
      RCHRES       7
      RCHRES       8
      RCHRES       9
      RCHRES      10
      RCHRES      11
      RCHRES      12
```

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```
RCHRES      13
RCHRES      14
RCHRES      15
RCHRES      16
RCHRES      17
RCHRES      18
RCHRES      19
RCHRES      20
RCHRES      21
RCHRES      22
RCHRES      23
RCHRES      24
RCHRES      25
RCHRES      26
RCHRES      27
RCHRES      28
RCHRES      29
RCHRES      30
RCHRES      31
RCHRES      32
RCHRES      33
RCHRES      34
RCHRES      35
RCHRES      36
RCHRES      37
RCHRES      38
RCHRES      39
RCHRES      40
RCHRES      41
RCHRES      42
COPY       527
COPY       508
COPY       513
COPY       512
COPY       510
COPY       509
COPY       528
COPY       526
COPY       525
COPY       511
COPY       524
COPY       523
COPY       521
COPY       522
COPY       507
COPY       520
COPY       517
COPY       506
COPY       505
COPY       503
COPY       502
COPY       501
DISPLY      27
DISPLY       8
DISPLY      13
DISPLY      12
DISPLY      10
DISPLY       9
DISPLY      28
DISPLY      26
DISPLY      25
DISPLY      11
DISPLY      24
DISPLY      23
DISPLY      21
DISPLY      22
DISPLY       7
DISPLY      20
DISPLY      17
DISPLY       6
```

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```
      DISPLY       5
      DISPLY       3
      DISPLY       2
      DISPLY       1
    END INGRP
END OPN SEQUENCE
DISPLY
  DISPLY-INFO1
    # -  #<----------Title---------->***TRAN PIVL DIG1 FIL1  PYR DIG2 FIL2 YRND
   27        Basin  7                  MAX                    1    2   56    9
    8        PP 8                      MAX                    1    2   37    9
   13        PP 13                     MAX                    1    2   42    9
   12        AC 39                     MAX                    1    2   41    9
   10        AC 43                     MAX                    1    2   39    9
    9        PP 9                      MAX                    1    2   38    9
   28        POC 28                    MAX                    1    2   57    9
   26        Channel  1                MAX                    1    2   55    9
   25        POC 25                    MAX                    1    2   54    9
   11        POC 11                    MAX                    1    2   40    9
   24        POC 24                    MAX                    1    2   53    9
   23        POC 23                    MAX                    1    2   52    9
   21        POC 21                    MAX                    1    2   50    9
   22        POC 22                    MAX                    1    2   51    9
    7        POC 7                     MAX                    1    2   36    9
   20        POC 20                    MAX                    1    2   49    9
   17        POC 17/18                 MAX                    1    2   46    9
    6        POC 6                     MAX                    1    2   35    9
    5        POC 5                     MAX                    1    2   34    9
    3        POC 3/4                   MAX                    1    2   32    9
    2        POC 2                     MAX                    1    2   31    9
    1        POC 1                     MAX                    1    2   30    9
  END DISPLY-INFO1
END DISPLY
COPY
  TIMESERIES
    # -  #  NPT  NMN ***
    1         1    1
  527         1    1
  508         1    1
  513         1    1
  512         1    1
  510         1    1
  509         1    1
  528         1    1
  526         1    1
  525         1    1
  511         1    1
  524         1    1
  523         1    1
  521         1    1
  522         1    1
  507         1    1
  520         1    1
  517         1    1
  506         1    1
  505         1    1
  503         1    1
  502         1    1
  501         1    1
  END TIMESERIES
END COPY
GENER
  OPCODE
    #    # OPCD ***
  END OPCODE
  PARM
    #    #         K ***
  END PARM
END GENER
PERLND
```

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```
GEN-INFO
  <PLS ><-------Name------->NBLKS   Unit-systems   Printer ***
  # -  #                          User  t-series Engl Metr ***
                                    in  out           ***
 51     D,Grass,Steep(2-5%)      1    1    1    1   27    0
 50     D,Grass,Mod (1-2%)       1    1    1    1   27    0
 52     D,Grass,VSteep(>5%)      1    1    1    1   27    0
 49     D,Grass,Flat(0-1%)       1    1    1    1   27    0
 58     D,Urban,Mod (1-2%)       1    1    1    1   27    0
 41     C,Urban,Flat(0-1%)       1    1    1    1   27    0
 34     C,Grass,Mod (1-2%)       1    1    1    1   27    0
 33     C,Grass,Flat(0-1%)       1    1    1    1   27    0
 17     B,Grass,Flat(0-1%)       1    1    1    1   27    0
 35     C,Grass,Steep(2-5%)      1    1    1    1   27    0
 19     B,Grass,Steep(2-5%)      1    1    1    1   27    0
END GEN-INFO
*** Section PWATER***

ACTIVITY
  <PLS > ************* Active Sections ******************************
  # -  # ATMP SNOW PWAT  SED  PST  PWG PQAL MSTL PEST NITR PHOS TRAC ***
 51         0    0    1    0    0    0    0    0    0    0    0    0
 50         0    0    1    0    0    0    0    0    0    0    0    0
 52         0    0    1    0    0    0    0    0    0    0    0    0
 49         0    0    1    0    0    0    0    0    0    0    0    0
 58         0    0    1    0    0    0    0    0    0    0    0    0
 41         0    0    1    0    0    0    0    0    0    0    0    0
 34         0    0    1    0    0    0    0    0    0    0    0    0
 33         0    0    1    0    0    0    0    0    0    0    0    0
 17         0    0    1    0    0    0    0    0    0    0    0    0
 35         0    0    1    0    0    0    0    0    0    0    0    0
 19         0    0    1    0    0    0    0    0    0    0    0    0
END ACTIVITY

PRINT-INFO
  <PLS > ***************** Print-flags ***************************** PIVL  PYR
  # -  # ATMP SNOW PWAT  SED  PST  PWG PQAL MSTL PEST NITR PHOS TRAC  *********
 51         0    0    4    0    0    0    0    0    0    0    0    0    1    9
 50         0    0    4    0    0    0    0    0    0    0    0    0    1    9
 52         0    0    4    0    0    0    0    0    0    0    0    0    1    9
 49         0    0    4    0    0    0    0    0    0    0    0    0    1    9
 58         0    0    4    0    0    0    0    0    0    0    0    0    1    9
 41         0    0    4    0    0    0    0    0    0    0    0    0    1    9
 34         0    0    4    0    0    0    0    0    0    0    0    0    1    9
 33         0    0    4    0    0    0    0    0    0    0    0    0    1    9
 17         0    0    4    0    0    0    0    0    0    0    0    0    1    9
 35         0    0    4    0    0    0    0    0    0    0    0    0    1    9
 19         0    0    4    0    0    0    0    0    0    0    0    0    1    9
END PRINT-INFO

PWAT-PARM1
  <PLS >  PWATER variable monthly parameter value flags  ***
  # -  # CSNO RTOP UZFG  VCS  VUZ  VNN VIFW VIRC  VLE INFC  HWT ***
 51         0    0    0    1    0    0    0    0    1    0    0
 50         0    0    0    1    0    0    0    0    1    0    0
 52         0    0    0    1    0    0    0    0    1    0    0
 49         0    0    0    1    0    0    0    0    1    0    0
 58         0    0    0    1    0    0    0    0    1    0    0
 41         0    0    0    1    0    0    0    0    1    0    0
 34         0    0    0    1    0    0    0    0    1    0    0
 33         0    0    0    1    0    0    0    0    1    0    0
 17         0    0    0    1    0    0    0    0    1    0    0
 35         0    0    0    1    0    0    0    0    1    0    0
 19         0    0    0    1    0    0    0    0    1    0    0
END PWAT-PARM1

PWAT-PARM2
  <PLS >      PWATER input info: Part 2         ***
  # -  # ***FOREST      LZSN    INFILT      LSUR     SLSUR     KVARY     AGWRC
 51              0       4.3     0.025       400      0.05         3      0.92
```

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 50              0      4.35     0.028       400      0.02         3      0.92
 52              0       4.2      0.02       350       0.1         3      0.92
 49              0       4.4      0.03       400      0.01         3      0.92
 58              0       4.4     0.018       400      0.02         3      0.92
 41              0      4.45     0.035       400      0.01         3      0.92
 34              0      4.45     0.043       400      0.02         3      0.92
 33              0       4.5     0.045       400      0.01         3      0.92
 17              0       4.7     0.065       400      0.01         3      0.92
 35              0       4.4      0.04       400      0.05         3      0.92
 19              0       4.6     0.055       400      0.05         3      0.92
END PWAT-PARM2

PWAT-PARM3
  <PLS >      PWATER input info: Part 3          ***
  # -  # ***PETMAX    PETMIN    INFEXP    INFILD    DEEPFR    BASETP    AGWETP
 51             40        35         2         2         0         0      0.05
 50             40        35         2         2         0         0      0.05
 52             40        35         2         2         0         0      0.05
 49             40        35         2         2         0         0      0.05
 58             40        35         2         2         0         0      0.05
 41             40        35         2         2         0         0      0.05
 34             40        35         2         2         0         0      0.05
 33             40        35         2         2         0         0      0.05
 17             40        35         2         2         0         0      0.05
 35             40        35         2         2         0         0      0.05
 19             40        35         2         2         0         0      0.05
END PWAT-PARM3
PWAT-PARM4
  <PLS >     PWATER input info: Part 4                                  ***
  # -  #     CEPSC      UZSN      NSUR     INTFW       IRC     LZETP ***
 51              0      0.27      0.25       0.6      0.45         0
 50              0      0.28      0.25      0.65      0.48         0
 52              0      0.25      0.25       0.5       0.4         0
 49              0       0.3      0.25       0.7       0.5         0
 58              0      0.28      0.25      0.48      0.38         0
 41              0       0.3      0.25       0.5       0.4         0
 34              0      0.28      0.25      0.65      0.48         0
 33              0       0.3      0.25       0.7       0.5         0
 17              0      0.35      0.25       1.5       0.5         0
 35              0      0.27      0.25       0.6      0.45         0
 19              0      0.32      0.25       1.4      0.45         0
END PWAT-PARM4
MON-LZETPARM
  <PLS >      PWATER input info: Part 3          ***
  # -  #  JAN  FEB  MAR  APR  MAY  JUN  JUL  AUG  SEP  OCT  NOV  DEC  ***
 51       0.4  0.4  0.4 0.45  0.5 0.55 0.55 0.55 0.55 0.55 0.45  0.4
 50       0.4  0.4  0.4 0.45  0.5 0.55 0.55 0.55 0.55 0.55 0.45  0.4
 52       0.4  0.4  0.4 0.45  0.5 0.55 0.55 0.55 0.55 0.55 0.45  0.4
 49       0.4  0.4  0.4 0.45  0.5 0.55 0.55 0.55 0.55 0.55 0.45  0.4
 58       0.5  0.5  0.5  0.6 0.65 0.65 0.65 0.65 0.65 0.65 0.55  0.5
 41       0.5  0.5  0.5  0.6 0.65 0.65 0.65 0.65 0.65 0.65 0.55  0.5
 34       0.4  0.4  0.4 0.45  0.5 0.55 0.55 0.55 0.55 0.55 0.45  0.4
 33       0.4  0.4  0.4 0.45  0.5 0.55 0.55 0.55 0.55 0.55 0.45  0.4
 17       0.4  0.4  0.4 0.45  0.5 0.55 0.55 0.55 0.55 0.55 0.45  0.4
 35       0.4  0.4  0.4 0.45  0.5 0.55 0.55 0.55 0.55 0.55 0.45  0.4
 19       0.4  0.4  0.4 0.45  0.5 0.55 0.55 0.55 0.55 0.55 0.45  0.4
END MON-LZETPARM
MON-INTERCEP
  <PLS >      PWATER input info: Part 3          ***
  # -  #  JAN  FEB  MAR  APR  MAY  JUN  JUL  AUG  SEP  OCT  NOV  DEC  ***
 51      0.12 0.12 0.12 0.11  0.1  0.1  0.1  0.1  0.1  0.1 0.11 0.12
 50      0.12 0.12 0.12 0.11  0.1  0.1  0.1  0.1  0.1  0.1 0.11 0.12
 52      0.12 0.12 0.12 0.11  0.1  0.1  0.1  0.1  0.1  0.1 0.11 0.12
 49      0.12 0.12 0.12 0.11  0.1  0.1  0.1  0.1  0.1  0.1 0.11 0.12
 58      0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11
 41      0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11
 34      0.12 0.12 0.12 0.11  0.1  0.1  0.1  0.1  0.1  0.1 0.11 0.12
 33      0.12 0.12 0.12 0.11  0.1  0.1  0.1  0.1  0.1  0.1 0.11 0.12
 17      0.12 0.12 0.12 0.11  0.1  0.1  0.1  0.1  0.1  0.1 0.11 0.12
 35      0.12 0.12 0.12 0.11  0.1  0.1  0.1  0.1  0.1  0.1 0.11 0.12
```

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```
   19      0.12 0.12 0.12 0.11  0.1  0.1  0.1  0.1  0.1  0.1 0.11 0.12
  END MON-INTERCEP

  PWAT-STATE1
    <PLS > *** Initial conditions at start of simulation
               ran from 1990 to end of 1992 (pat 1-11-95) RUN 21 ***
    # -  # ***  CEPS      SURS       UZS      IFWS       LZS      AGWS       GWVS
   51             0         0      0.15         0         4      0.05          0
   50             0         0      0.15         0         4      0.05          0
   52             0         0      0.15         0         4      0.05          0
   49             0         0      0.15         0         4      0.05          0
   58             0         0      0.15         0         4      0.05          0
   41             0         0      0.15         0         4      0.05          0
   34             0         0      0.15         0         4      0.05          0
   33             0         0      0.15         0         4      0.05          0
   17             0         0      0.15         0         4      0.05          0
   35             0         0      0.15         0         4      0.05          0
   19             0         0      0.15         0         4      0.05          0
  END PWAT-STATE1

END PERLND

IMPLND
  GEN-INFO
    <PLS ><-------Name------->   Unit-systems   Printer ***
    # -  #                     User  t-series Engl Metr ***
                                    in  out             ***
    3     Imperv,Steep(2-5%)      1    1    1   27    0
    2     Imperv,Mod (1-2%)       1    1    1   27    0
    1     Imperv,Flat(0-1%)       1    1    1   27    0
  END GEN-INFO
  *** Section IWATER***

  ACTIVITY
    <PLS > ************ Active Sections ******************************
    # -  # ATMP SNOW IWAT  SLD  IWG IQAL    ***
    3         0    0    1    0    0    0
    2         0    0    1    0    0    0
    1         0    0    1    0    0    0
  END ACTIVITY

  PRINT-INFO
    <ILS > ******** Print-flags ******** PIVL  PYR
    # -  # ATMP SNOW IWAT  SLD  IWG IQAL     *********
    3         0    0    4    0    0    0    1    9
    2         0    0    4    0    0    0    1    9
    1         0    0    4    0    0    0    1    9
  END PRINT-INFO

  IWAT-PARM1
    <PLS >  IWATER variable monthly parameter value flags  ***
    # -  # CSNO RTOP  VRS  VNN RTLI     ***
    3         0    0    0    0    0
    2         0    0    0    0    0
    1         0    0    0    0    0
  END IWAT-PARM1

  IWAT-PARM2
    <PLS >      IWATER input info: Part 2         ***
    # -  # ***  LSUR     SLSUR      NSUR     RETSC
    3            100      0.05      0.05     0.095
    2            100      0.02      0.05       0.1
    1            100      0.01      0.05       0.1
  END IWAT-PARM2

  IWAT-PARM3
    <PLS >      IWATER input info: Part 3         ***
    # -  # ***PETMAX    PETMIN
    3             0         0
    2             0         0
```

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```
    1              0         0
  END IWAT-PARM3

  IWAT-STATE1
    <PLS > *** Initial conditions at start of simulation
    # -  # ***  RETS      SURS
    3              0         0
    2              0         0
    1              0         0
  END IWAT-STATE1

END IMPLND

SCHEMATIC
<-Source->                  <--Area-->     <-Target->   MBLK   ***
<Name>   #                  <-factor->     <Name>   #   Tbl#   ***
AC01 AC03***
PERLND  51                      146.09     RCHRES   9      2
PERLND  51                      146.09     RCHRES   9      3
AC02***
PERLND  51                       13.65     RCHRES   9      2
PERLND  51                       13.65     RCHRES   9      3
Off-site and pre- SB 7***
PERLND  51                      360.62     RCHRES  20      2
PERLND  51                      360.62     RCHRES  20      3
Basin  4***
PERLND  50                       44.24     RCHRES  24      2
PERLND  50                       44.24     RCHRES  24      3
PP 20***
PERLND  49                      107.12     RCHRES  31      2
PERLND  49                      107.12     RCHRES  31      3
Basin  5***
PERLND  50                      209.71     RCHRES  26      2
PERLND  50                      209.71     RCHRES  26      3
Basin  6***
PERLND  51                       83.53     RCHRES   1      2
PERLND  51                       83.53     RCHRES   1      3
PP 25***
PERLND  51                       28.39     RCHRES  10      2
PERLND  51                       28.39     RCHRES  10      3
Basin  7***
PERLND  52                       161.4     RCHRES  10      2
PERLND  52                       161.4     RCHRES  10      3
PP 21***
PERLND  50                      175.37     RCHRES  25      2
PERLND  50                      175.37     RCHRES  25      3
PP 8***
PERLND  51                      430.61     RCHRES  13      2
PERLND  51                      430.61     RCHRES  13      3
IMPLND   3                        8.93     RCHRES  13      5
PP 13***
PERLND  50                       25.07     RCHRES  12      2
PERLND  50                       25.07     RCHRES  12      3
PP 19***
PERLND  50                       36.28     RCHRES  31      2
PERLND  50                       36.28     RCHRES  31      3
PP 18 (AC 21a)***
PERLND  50                      130.66     RCHRES  17      2
PERLND  50                      130.66     RCHRES  17      3
SB 97 (AC20) offsite***
PERLND  50                      409.47     RCHRES   3      2
PERLND  50                      409.47     RCHRES   3      3
AC 39***
PERLND  50                      111.26     RCHRES  14      2
PERLND  50                      111.26     RCHRES  14      3
PP 17 (AC 22)***
PERLND  50                      106.73     RCHRES   2      2
PERLND  50                      106.73     RCHRES   2      3
AC 21B 19***
PERLND  49                       18.36     RCHRES  32      2
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```
PERLND  49                    18.36     RCHRES  32      3
AC 32 (part)***
PERLND  50                    54.28     RCHRES  13      2
PERLND  50                    54.28     RCHRES  13      3
AC 34***
PERLND  51                     7.27     RCHRES  30      2
PERLND  51                     7.27     RCHRES  30      3
AC 23***
PERLND  49                   108.47     RCHRES  33      2
PERLND  49                   108.47     RCHRES  33      3
AC 24 (part) 25***
PERLND  51                     54.3     RCHRES  12      2
PERLND  51                     54.3     RCHRES  12      3
AC 43***
PERLND  17                    25.64     RCHRES  15      2
PERLND  17                    25.64     RCHRES  15      3
PERLND  49                    81.62     RCHRES  15      2
PERLND  49                    81.62     RCHRES  15      3
AC 26***
PERLND  50                    14.25     RCHRES  34      2
PERLND  50                    14.25     RCHRES  34      3
AC 35 (part)***
PERLND  50                    59.03     RCHRES  34      2
PERLND  50                    59.03     RCHRES  34      3
SB 102***
PERLND  58                   188.16     RCHRES   6      2
PERLND  58                   188.16     RCHRES   6      3
IMPLND   2                   160.24     RCHRES   6      5
PP 9***
PERLND  19                     1.66     RCHRES  16      2
PERLND  19                     1.66     RCHRES  16      3
PERLND  35                    14.02     RCHRES  16      2
PERLND  35                    14.02     RCHRES  16      3
AC 36 37 35(part)***
PERLND  50                    77.93     RCHRES  35      2
PERLND  50                    77.93     RCHRES  35      3
IMPLND   2                     3.99     RCHRES  35      5
AC 38***
PERLND  50                    10.82     RCHRES  18      2
PERLND  50                    10.82     RCHRES  18      3
IMPLND   2                     1.72     RCHRES  18      5
AC 40 41***
PERLND  51                    69.57     RCHRES  14      2
PERLND  51                    69.57     RCHRES  14      3
AC 42***
PERLND  41                     4.95     RCHRES  37      2
PERLND  41                     4.95     RCHRES  37      3
PERLND  49                    13.22     RCHRES  37      2
PERLND  49                    13.22     RCHRES  37      3
AC 45***
PERLND  34                    13.52     RCHRES  38      2
PERLND  34                    13.52     RCHRES  38      3
PERLND  50                     6.74     RCHRES  38      2
PERLND  50                     6.74     RCHRES  38      3
AC 46***
PERLND  33                     1.21     RCHRES  19      2
PERLND  33                     1.21     RCHRES  19      3
PERLND  49                    13.02     RCHRES  19      2
PERLND  49                    13.02     RCHRES  19      3
IMPLND   1                     1.51     RCHRES  19      5
AC 44 (part2)***
PERLND  35                     0.41     RCHRES  22      2
PERLND  35                     0.41     RCHRES  22      3
PERLND  51                    15.08     RCHRES  22      2
PERLND  51                    15.08     RCHRES  22      3
AC 44 (part1)***
PERLND  19                     2.86     RCHRES  15      2
PERLND  19                     2.86     RCHRES  15      3
PERLND  51                    27.83     RCHRES  15      2
PERLND  51                    27.83     RCHRES  15      3
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```
AC 47 part 2***
PERLND  33                    9.51     RCHRES  16      2
PERLND  33                    9.51     RCHRES  16      3
PERLND  35                   10.01     RCHRES  16      2
PERLND  35                   10.01     RCHRES  16      3
AC 47 part 3***
PERLND  50                   11.12     RCHRES  39      2
PERLND  50                   11.12     RCHRES  39      3
PERLND  34                   35.05     RCHRES  39      2
PERLND  34                   35.05     RCHRES  39      3
IMPLND   2                    1.51     RCHRES  39      5
AC 48 (part)***
PERLND  33                   26.47     RCHRES  41      2
PERLND  33                   26.47     RCHRES  41      3
PERLND  49                    6.02     RCHRES  41      2
PERLND  49                    6.02     RCHRES  41      3
IMPLND   1                    6.62     RCHRES  41      5
AC 48 (part 2)***
PERLND  34                   26.48     RCHRES  42      2
PERLND  34                   26.48     RCHRES  42      3
PERLND  50                    6.02     RCHRES  42      2
PERLND  50                    6.02     RCHRES  42      3
Basin  44***
PERLND  50                  153.03     RCHRES  21      2
PERLND  50                  153.03     RCHRES  21      3
SB 104***
PERLND  58                    16.7     RCHRES  21      2
PERLND  58                    16.7     RCHRES  21      3
IMPLND   2                   12.67     RCHRES  21      5
SB 105***
PERLND  58                   80.76     RCHRES   4      2
PERLND  58                   80.76     RCHRES   4      3
IMPLND   2                  276.25     RCHRES   4      5
SB 103***
PERLND  58                  437.79     RCHRES   5      2
PERLND  58                  437.79     RCHRES   5      3
IMPLND   2                  604.61     RCHRES   5      5
Off-site 98***
PERLND  58                    1.89     RCHRES  40      2
PERLND  58                    1.89     RCHRES  40      3
IMPLND   2                   17.01     RCHRES  40      5
SB 99***
PERLND  58                    6.49     RCHRES  23      2
PERLND  58                    6.49     RCHRES  23      3
IMPLND   2                    1.01     RCHRES  23      5
SB 100***
PERLND  58                    3.51     RCHRES   7      2
PERLND  58                    3.51     RCHRES   7      3
IMPLND   2                   21.89     RCHRES   7      5
SB 101***
PERLND  58                    3.14     RCHRES   8      2
PERLND  58                    3.14     RCHRES   8      3
IMPLND   2                    3.14     RCHRES   8      5
Basin  7***
PERLND  52                   161.4     COPY   527     12
PERLND  52                   161.4     COPY   527     13
PP 8***
PERLND  51                  430.61     COPY   508     12
PERLND  51                  430.61     COPY   508     13
IMPLND   3                    8.93     COPY   508     15
PP 13***
PERLND  50                   25.07     COPY   513     12
PERLND  50                   25.07     COPY   513     13
AC 39***
PERLND  50                  111.26     COPY   512     12
PERLND  50                  111.26     COPY   512     13
AC 43***
PERLND  17                   25.64     COPY   510     12
PERLND  17                   25.64     COPY   510     13
PERLND  49                   81.62     COPY   510     12
```

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```
PERLND  49                      81.62     COPY   510     13
PP 9***
PERLND  19                       1.66     COPY   509     12
PERLND  19                       1.66     COPY   509     13
PERLND  35                      14.02     COPY   509     12
PERLND  35                      14.02     COPY   509     13

******Routing******
RCHRES   9                          1     RCHRES  20      6
RCHRES  20                          1     RCHRES  24      6
RCHRES  24                          1     RCHRES  26      6
RCHRES  26                          1     RCHRES  29      6
RCHRES   1                          1     RCHRES  11      6
RCHRES  10                          1     RCHRES  25      6
RCHRES  25                          1     RCHRES  27      6
RCHRES  11                          1     RCHRES  25      6
RCHRES  29                          1     RCHRES  31      6
RCHRES  27                          1     RCHRES  31      6
RCHRES  31                          1     RCHRES  32      6
RCHRES  32                          1     RCHRES  33      6
RCHRES  17                          1     RCHRES  32      6
RCHRES   2                          1     RCHRES  32      6
RCHRES   3                          1     RCHRES  17      6
RCHRES  33                          1     RCHRES  34      6
RCHRES  12                          1     RCHRES  34      6
RCHRES  34                          1     RCHRES  35      6
RCHRES  30                          1     RCHRES  34      6
RCHRES  28                          1     RCHRES  30      6
RCHRES  13                          1     RCHRES  28      6
RCHRES  21                          1     RCHRES  28      6
RCHRES  35                          1     RCHRES  36      6
RCHRES  36                          1     RCHRES  37      6
RCHRES  18                          1     RCHRES  36      6
RCHRES  14                          1     RCHRES  37      6
RCHRES  37                          1     RCHRES  38      6
RCHRES  15                          1     RCHRES  22      6
RCHRES  22                          1     RCHRES  38      6
RCHRES  38                          1     RCHRES  39      6
RCHRES  19                          1     RCHRES  38      6
RCHRES  39                          1     RCHRES  40      6
RCHRES  40                          1     RCHRES  41      6
RCHRES  16                          1     RCHRES  40      6
RCHRES  23                          1     RCHRES  41      6
RCHRES  41                          1     RCHRES  42      6
RCHRES   4                          1     RCHRES  21      6
RCHRES   5                          1     RCHRES  18      6
RCHRES   6                          1     RCHRES  19      6
RCHRES   7                          1     RCHRES  23      6
RCHRES   8                          1     RCHRES  23      6
RCHRES   9                          1     COPY   526     16
RCHRES  20                          1     COPY   524     16
RCHRES  24                          1     COPY   523     16
RCHRES  26                          1     COPY   522     16
RCHRES   1                          1     COPY   528     16
RCHRES  10                          1     COPY   525     16
RCHRES  25                          1     COPY   521     16
RCHRES  31                          1     COPY   520     16
RCHRES  32                          1     COPY   517     16
RCHRES  34                          1     COPY   506     16
RCHRES  28                          1     COPY   507     16
RCHRES  36                          1     COPY   505     16
RCHRES  15                          1     COPY   511     16
RCHRES  38                          1     COPY   503     16
RCHRES  40                          1     COPY   502     16
RCHRES  42                          1     COPY   501     16
END SCHEMATIC

NETWORK
<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Target vols> <-Grp> <-Member->  ***
<Name>   #        <Name> # #<-factor->strg <Name>   #   #        <Name> # #  ***
```

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```
COPY   527 OUTPUT MEAN   1 1   12.1        DISPLY  27     INPUT  TIMSER 1
COPY   508 OUTPUT MEAN   1 1   12.1        DISPLY   8     INPUT  TIMSER 1
COPY   513 OUTPUT MEAN   1 1   12.1        DISPLY  13     INPUT  TIMSER 1
COPY   512 OUTPUT MEAN   1 1   12.1        DISPLY  12     INPUT  TIMSER 1
COPY   510 OUTPUT MEAN   1 1   12.1        DISPLY  10     INPUT  TIMSER 1
COPY   509 OUTPUT MEAN   1 1   12.1        DISPLY   9     INPUT  TIMSER 1
COPY   528 OUTPUT MEAN   1 1   12.1        DISPLY  28     INPUT  TIMSER 1
COPY   526 OUTPUT MEAN   1 1   12.1        DISPLY  26     INPUT  TIMSER 1
COPY   525 OUTPUT MEAN   1 1   12.1        DISPLY  25     INPUT  TIMSER 1
COPY   511 OUTPUT MEAN   1 1   12.1        DISPLY  11     INPUT  TIMSER 1
COPY   524 OUTPUT MEAN   1 1   12.1        DISPLY  24     INPUT  TIMSER 1
COPY   523 OUTPUT MEAN   1 1   12.1        DISPLY  23     INPUT  TIMSER 1
COPY   521 OUTPUT MEAN   1 1   12.1        DISPLY  21     INPUT  TIMSER 1
COPY   522 OUTPUT MEAN   1 1   12.1        DISPLY  22     INPUT  TIMSER 1
COPY   507 OUTPUT MEAN   1 1   12.1        DISPLY   7     INPUT  TIMSER 1
COPY   520 OUTPUT MEAN   1 1   12.1        DISPLY  20     INPUT  TIMSER 1
COPY   517 OUTPUT MEAN   1 1   12.1        DISPLY  17     INPUT  TIMSER 1
COPY   506 OUTPUT MEAN   1 1   12.1        DISPLY   6     INPUT  TIMSER 1
COPY   505 OUTPUT MEAN   1 1   12.1        DISPLY   5     INPUT  TIMSER 1
COPY   503 OUTPUT MEAN   1 1   12.1        DISPLY   3     INPUT  TIMSER 1
COPY   502 OUTPUT MEAN   1 1   12.1        DISPLY   2     INPUT  TIMSER 1
COPY   501 OUTPUT MEAN   1 1   12.1        DISPLY   1     INPUT  TIMSER 1


<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Target vols> <-Grp> <-Member->  ***
<Name>   #        <Name> # #<-factor->strg <Name>   #   #        <Name> # #  ***
END NETWORK

RCHRES
  GEN-INFO
    RCHRES       Name        Nexits   Unit Systems   Printer                ***
    # -  #<------------------><---> User T-series  Engl Metr LKFG           ***
                                       in  out                               ***
    1     POC 28                  1    1    1    1   28    0    1
    2     SB 17 SF                1    1    1    1   28    0    1
    3     Offsite 97              1    1    1    1   28    0    1
    4     Off-site 105            1    1    1    1   28    0    1
    5     Off-site 103            1    1    1    1   28    0    1
    6     Off-site 102            1    1    1    1   28    0    1
    7     Urban 100               1    1    1    1   28    0    1
    8     Urban 101               1    1    1    1   28    0    1
    9     Channel  1              1    1    1    1   28    0    1
   10     POC 25                  1    1    1    1   28    0    1
   11     POC 21 SF               1    1    1    1   28    0    1
   12     Channel  13             1    1    1    1   28    0    1
   13     Channel 8               1    1    1    1   28    0    1
   14     Channel  12             1    1    1    1   28    0    1
   15     POC 11                  1    1    1    1   28    0    1
   16     Trib 9                  1    1    1    1   28    0    1
   17     SB 18 SF                1    1    1    1   28    0    1
   18     Urban 2                 1    1    1    1   28    0    1
   19     Urban 3                 1    1    1    1   28    0    1
   20     POC 24                  1    1    1    1   28    0    1
   21     Urban 1                 1    1    1    1   28    0    1
   22     SF POC 3/4              1    1    1    1   28    0    1
   23     Urban 4                 1    1    1    1   28    0    1
   24     POC 23                  1    1    1    1   28    0    1
   25     POC 21                  1    1    1    1   28    0    1
   26     POC 22                  1    1    1    1   28    0    1
   27     POC 20 NF               1    1    1    1   28    0    1
   28     POC 7                   1    1    1    1   28    0    1
   29     POC 20 SF               1    1    1    1   28    0    1
   30     NF                      1    1    1    1   28    0    1
   31     POC 20                  1    1    1    1   28    0    1
   32     POC 17/18               1    1    1    1   28    0    1
   33     SF                      1    1    1    1   28    0    1
   34     POC 6                   1    1    1    1   28    0    1
   35     Upstream POC 5          1    1    1    1   28    0    1
   36     POC 5                   1    1    1    1   28    0    1
```

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```
 37     Upstream POC 3/4-186     1    1    1    1   28    0    1
 38     POC 3/4                  1    1    1    1   28    0    1
 39     Upstream POC 2           1    1    1    1   28    0    1
 40     POC 2                    1    1    1    1   28    0    1
 41     Upstream POC 1           1    1    1    1   28    0    1
 42     POC 1                    1    1    1    1   28    0    1
END GEN-INFO
*** Section RCHRES***

ACTIVITY
  <PLS > ************ Active Sections ******************************
  # -  # HYFG ADFG CNFG HTFG SDFG GQFG OXFG NUFG PKFG PHFG ***
  1         1    0    0    0    0    0    0    0    0    0
  2         1    0    0    0    0    0    0    0    0    0
  3         1    0    0    0    0    0    0    0    0    0
  4         1    0    0    0    0    0    0    0    0    0
  5         1    0    0    0    0    0    0    0    0    0
  6         1    0    0    0    0    0    0    0    0    0
  7         1    0    0    0    0    0    0    0    0    0
  8         1    0    0    0    0    0    0    0    0    0
  9         1    0    0    0    0    0    0    0    0    0
 10         1    0    0    0    0    0    0    0    0    0
 11         1    0    0    0    0    0    0    0    0    0
 12         1    0    0    0    0    0    0    0    0    0
 13         1    0    0    0    0    0    0    0    0    0
 14         1    0    0    0    0    0    0    0    0    0
 15         1    0    0    0    0    0    0    0    0    0
 16         1    0    0    0    0    0    0    0    0    0
 17         1    0    0    0    0    0    0    0    0    0
 18         1    0    0    0    0    0    0    0    0    0
 19         1    0    0    0    0    0    0    0    0    0
 20         1    0    0    0    0    0    0    0    0    0
 21         1    0    0    0    0    0    0    0    0    0
 22         1    0    0    0    0    0    0    0    0    0
 23         1    0    0    0    0    0    0    0    0    0
 24         1    0    0    0    0    0    0    0    0    0
 25         1    0    0    0    0    0    0    0    0    0
 26         1    0    0    0    0    0    0    0    0    0
 27         1    0    0    0    0    0    0    0    0    0
 28         1    0    0    0    0    0    0    0    0    0
 29         1    0    0    0    0    0    0    0    0    0
 30         1    0    0    0    0    0    0    0    0    0
 31         1    0    0    0    0    0    0    0    0    0
 32         1    0    0    0    0    0    0    0    0    0
 33         1    0    0    0    0    0    0    0    0    0
 34         1    0    0    0    0    0    0    0    0    0
 35         1    0    0    0    0    0    0    0    0    0
 36         1    0    0    0    0    0    0    0    0    0
 37         1    0    0    0    0    0    0    0    0    0
 38         1    0    0    0    0    0    0    0    0    0
 39         1    0    0    0    0    0    0    0    0    0
 40         1    0    0    0    0    0    0    0    0    0
 41         1    0    0    0    0    0    0    0    0    0
 42         1    0    0    0    0    0    0    0    0    0
END ACTIVITY

PRINT-INFO
  <PLS > ***************** Print-flags ******************* PIVL  PYR
  # -  # HYDR ADCA CONS HEAT  SED  GQL OXRX NUTR PLNK PHCB PIVL  PYR  *********
  1         4    0    0    0    0    0    0    0    0    0    1    9
  2         4    0    0    0    0    0    0    0    0    0    1    9
  3         4    0    0    0    0    0    0    0    0    0    1    9
  4         4    0    0    0    0    0    0    0    0    0    1    9
  5         4    0    0    0    0    0    0    0    0    0    1    9
  6         4    0    0    0    0    0    0    0    0    0    1    9
  7         4    0    0    0    0    0    0    0    0    0    1    9
  8         4    0    0    0    0    0    0    0    0    0    1    9
  9         4    0    0    0    0    0    0    0    0    0    1    9
 10         4    0    0    0    0    0    0    0    0    0    1    9
 11         4    0    0    0    0    0    0    0    0    0    1    9
```

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```
 12          4    0    0    0    0    0    0    0    0    0    1    9
 13          4    0    0    0    0    0    0    0    0    0    1    9
 14          4    0    0    0    0    0    0    0    0    0    1    9
 15          4    0    0    0    0    0    0    0    0    0    1    9
 16          4    0    0    0    0    0    0    0    0    0    1    9
 17          4    0    0    0    0    0    0    0    0    0    1    9
 18          4    0    0    0    0    0    0    0    0    0    1    9
 19          4    0    0    0    0    0    0    0    0    0    1    9
 20          4    0    0    0    0    0    0    0    0    0    1    9
 21          4    0    0    0    0    0    0    0    0    0    1    9
 22          4    0    0    0    0    0    0    0    0    0    1    9
 23          4    0    0    0    0    0    0    0    0    0    1    9
 24          4    0    0    0    0    0    0    0    0    0    1    9
 25          4    0    0    0    0    0    0    0    0    0    1    9
 26          4    0    0    0    0    0    0    0    0    0    1    9
 27          4    0    0    0    0    0    0    0    0    0    1    9
 28          4    0    0    0    0    0    0    0    0    0    1    9
 29          4    0    0    0    0    0    0    0    0    0    1    9
 30          4    0    0    0    0    0    0    0    0    0    1    9
 31          4    0    0    0    0    0    0    0    0    0    1    9
 32          4    0    0    0    0    0    0    0    0    0    1    9
 33          4    0    0    0    0    0    0    0    0    0    1    9
 34          4    0    0    0    0    0    0    0    0    0    1    9
 35          4    0    0    0    0    0    0    0    0    0    1    9
 36          4    0    0    0    0    0    0    0    0    0    1    9
 37          4    0    0    0    0    0    0    0    0    0    1    9
 38          4    0    0    0    0    0    0    0    0    0    1    9
 39          4    0    0    0    0    0    0    0    0    0    1    9
 40          4    0    0    0    0    0    0    0    0    0    1    9
 41          4    0    0    0    0    0    0    0    0    0    1    9
 42          4    0    0    0    0    0    0    0    0    0    1    9
END PRINT-INFO

HYDR-PARM1
  RCHRES  Flags for each HYDR Section                                    ***
  # -  #  VC A1 A2 A3  ODFVFG for each *** ODGTFG for each     FUNCT  for each
         FG FG FG FG  possible  exit  *** possible  exit      possible  exit
          *  *  *  *  *  *  *  *  *       *  *  *  *  *          ***
  1       0  1  0  0    4  0  0  0  0       0  0  0  0  0       2  2  2  2  2
  2       0  1  0  0    4  0  0  0  0       0  0  0  0  0       2  2  2  2  2
  3       0  1  0  0    4  0  0  0  0       0  0  0  0  0       2  2  2  2  2
  4       0  1  0  0    4  0  0  0  0       0  0  0  0  0       2  2  2  2  2
  5       0  1  0  0    4  0  0  0  0       0  0  0  0  0       2  2  2  2  2
  6       0  1  0  0    4  0  0  0  0       0  0  0  0  0       2  2  2  2  2
  7       0  1  0  0    4  0  0  0  0       0  0  0  0  0       2  2  2  2  2
  8       0  1  0  0    4  0  0  0  0       0  0  0  0  0       2  2  2  2  2
  9       0  1  0  0    4  0  0  0  0       0  0  0  0  0       2  2  2  2  2
 10       0  1  0  0    4  0  0  0  0       0  0  0  0  0       2  2  2  2  2
 11       0  1  0  0    4  0  0  0  0       0  0  0  0  0       2  2  2  2  2
 12       0  1  0  0    4  0  0  0  0       0  0  0  0  0       2  2  2  2  2
 13       0  1  0  0    4  0  0  0  0       0  0  0  0  0       2  2  2  2  2
 14       0  1  0  0    4  0  0  0  0       0  0  0  0  0       2  2  2  2  2
 15       0  1  0  0    4  0  0  0  0       0  0  0  0  0       2  2  2  2  2
 16       0  1  0  0    4  0  0  0  0       0  0  0  0  0       2  2  2  2  2
 17       0  1  0  0    4  0  0  0  0       0  0  0  0  0       2  2  2  2  2
 18       0  1  0  0    4  0  0  0  0       0  0  0  0  0       2  2  2  2  2
 19       0  1  0  0    4  0  0  0  0       0  0  0  0  0       2  2  2  2  2
 20       0  1  0  0    4  0  0  0  0       0  0  0  0  0       2  2  2  2  2
 21       0  1  0  0    4  0  0  0  0       0  0  0  0  0       2  2  2  2  2
 22       0  1  0  0    4  0  0  0  0       0  0  0  0  0       2  2  2  2  2
 23       0  1  0  0    4  0  0  0  0       0  0  0  0  0       2  2  2  2  2
 24       0  1  0  0    4  0  0  0  0       0  0  0  0  0       2  2  2  2  2
 25       0  1  0  0    4  0  0  0  0       0  0  0  0  0       2  2  2  2  2
 26       0  1  0  0    4  0  0  0  0       0  0  0  0  0       2  2  2  2  2
 27       0  1  0  0    4  0  0  0  0       0  0  0  0  0       2  2  2  2  2
 28       0  1  0  0    4  0  0  0  0       0  0  0  0  0       2  2  2  2  2
 29       0  1  0  0    4  0  0  0  0       0  0  0  0  0       2  2  2  2  2
 30       0  1  0  0    4  0  0  0  0       0  0  0  0  0       2  2  2  2  2
 31       0  1  0  0    4  0  0  0  0       0  0  0  0  0       2  2  2  2  2
 32       0  1  0  0    4  0  0  0  0       0  0  0  0  0       2  2  2  2  2
```

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```
 33         0  1  0  0    4  0  0  0  0        0  0  0  0  0        2  2  2  2  2
 34         0  1  0  0    4  0  0  0  0        0  0  0  0  0        2  2  2  2  2
 35         0  1  0  0    4  0  0  0  0        0  0  0  0  0        2  2  2  2  2
 36         0  1  0  0    4  0  0  0  0        0  0  0  0  0        2  2  2  2  2
 37         0  1  0  0    4  0  0  0  0        0  0  0  0  0        2  2  2  2  2
 38         0  1  0  0    4  0  0  0  0        0  0  0  0  0        2  2  2  2  2
 39         0  1  0  0    4  0  0  0  0        0  0  0  0  0        2  2  2  2  2
 40         0  1  0  0    4  0  0  0  0        0  0  0  0  0        2  2  2  2  2
 41         0  1  0  0    4  0  0  0  0        0  0  0  0  0        2  2  2  2  2
 42         0  1  0  0    4  0  0  0  0        0  0  0  0  0        2  2  2  2  2
END HYDR-PARM1

HYDR-PARM2
  # -  #    FTABNO       LEN      DELTH     STCOR        KS      DB50        ***
<------><--------><--------><--------><--------><--------><--------><------***
  1              1      0.32       0.0       0.0       0.5       0.0
  2              2      0.28       0.0       0.0       0.5       0.0
  3              3      1.05       0.0       0.0       0.5       0.0
  4              4      0.01       0.0       0.0       0.5       0.0
  5              5      0.01       0.0       0.0       0.5       0.0
  6              6      0.01       0.0       0.0       0.5       0.0
  7              7      0.01       0.0       0.0       0.5       0.0
  8              8      0.01       0.0       0.0       0.5       0.0
  9              9      0.35       0.0       0.0       0.5       0.0
 10             10      0.39       0.0       0.0       0.5       0.0
 11             11      0.47       0.0       0.0       0.5       0.0
 12             12       0.3       0.0       0.0       0.5       0.0
 13             13      0.28       0.0       0.0       0.5       0.0
 14             14      0.57       0.0       0.0       0.5       0.0
 15             15      0.27       0.0       0.0       0.5       0.0
 16             16      0.36       0.0       0.0       0.5       0.0
 17             17      0.64       0.0       0.0       0.5       0.0
 18             18      0.11       0.0       0.0       0.5       0.0
 19             19      0.23       0.0       0.0       0.5       0.0
 20             20      0.65       0.0       0.0       0.5       0.0
 21             21      0.43       0.0       0.0       0.5       0.0
 22             22      0.14       0.0       0.0       0.5       0.0
 23             23      0.09       0.0       0.0       0.5       0.0
 24             24      0.25       0.0       0.0       0.5       0.0
 25             25      0.63       0.0       0.0       0.5       0.0
 26             26      0.39       0.0       0.0       0.5       0.0
 27             27      0.47       0.0       0.0       0.5       0.0
 28             28      0.04       0.0       0.0       0.5       0.0
 29             29      0.53       0.0       0.0       0.5       0.0
 30             30      0.14       0.0       0.0       0.5       0.0
 31             31      0.32       0.0       0.0       0.5       0.0
 32             32      0.25       0.0       0.0       0.5       0.0
 33             33      0.87       0.0       0.0       0.5       0.0
 34             34      0.32       0.0       0.0       0.5       0.0
 35             35      0.36       0.0       0.0       0.5       0.0
 36             36      0.08       0.0       0.0       0.5       0.0
 37             37      0.27       0.0       0.0       0.5       0.0
 38             38      0.05       0.0       0.0       0.5       0.0
 39             39      0.18       0.0       0.0       0.5       0.0
 40             40      0.07       0.0       0.0       0.5       0.0
 41             41      0.19       0.0       0.0       0.5       0.0
 42             42      0.19       0.0       0.0       0.5       0.0
END HYDR-PARM2
HYDR-INIT
  RCHRES  Initial conditions for each HYDR section                     ***
  # -  # ***   VOL     Initial  value  of COLIND     Initial  value  of OUTDGT
        *** ac-ft     for each possible exit        for each possible exit
<------><-------->     <---><---><---><---><---> *** <---><---><---><---><---->
  1         0            4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
  2         0            4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
  3         0            4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
  4         0            4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
  5         0            4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
  6         0            4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
  7         0            4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
```

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    8         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
    9         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
   10         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
   11         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
   12         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
   13         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
   14         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
   15         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
   16         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
   17         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
   18         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
   19         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
   20         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
   21         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
   22         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
   23         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
   24         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
   25         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
   26         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
   27         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
   28         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
   29         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
   30         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
   31         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
   32         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
   33         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
   34         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
   35         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
   36         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
   37         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
   38         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
   39         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
   40         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
   41         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
   42         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
  END HYDR-INIT
END RCHRES

SPEC-ACTIONS
END SPEC-ACTIONS
FTABLES
  FTABLE      9
   91    4
     Depth      Area    Volume  Outflow1 Velocity  Travel Time***
      (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
  0.000000  0.467172  0.000000  0.000000
  0.022222  0.468116  0.010392  0.176713
  0.044444  0.469060  0.020805  0.560295
  0.066667  0.470004  0.031239  1.099861
  0.088889  0.470948  0.041694  1.774231
  0.111111  0.471893  0.052170  2.570234
  0.133333  0.472837  0.062667  3.478503
  0.155556  0.473781  0.073185  4.491859
  0.177778  0.474725  0.083724  5.604540
  0.200000  0.475669  0.094284  6.811764
  0.222222  0.476613  0.104865  8.109464
  0.244444  0.477558  0.115467  9.494121
  0.266667  0.478502  0.126090  10.96264
  0.288889  0.479446  0.136734  12.51227
  0.311111  0.480390  0.147399  14.14053
  0.333333  0.481334  0.158084  15.84519
  0.355556  0.482279  0.168791  17.62421
  0.377778  0.483223  0.179519  19.47570
  0.400000  0.484167  0.190268  21.39795
  0.422222  0.485111  0.201037  23.38934
  0.444444  0.486055  0.211828  25.44839
  0.466667  0.486999  0.222640  27.57370
  0.488889  0.487944  0.233473  29.76397
  0.511111  0.488888  0.244326  32.01797
  0.533333  0.489832  0.255201  34.33454
```

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0.555556  0.490776  0.266097  36.71260
0.577778  0.491720  0.277013  39.15110
0.600000  0.492665  0.287951  41.64908
0.622222  0.493609  0.298909  44.20558
0.644444  0.494553  0.309889  46.81974
0.666667  0.495497  0.320890  49.49071
0.688889  0.496442  0.331911  52.21767
0.711111  0.497386  0.342954  54.99986
0.733333  0.498330  0.354017  57.83654
0.755556  0.499274  0.365102  60.72700
0.777778  0.500218  0.376207  63.67056
0.800000  0.501163  0.387334  66.66657
0.822222  0.502107  0.398481  69.71440
0.844444  0.503051  0.409649  72.81346
0.866667  0.503995  0.420839  75.96315
0.888889  0.504939  0.432049  79.16293
0.911111  0.505884  0.443281  82.41224
0.933333  0.506828  0.454533  85.71058
0.955556  0.507772  0.465806  89.05743
0.977778  0.508716  0.477101  92.45231
1.000000  0.509661  0.488416  95.89476
1.022222  0.510605  0.499752  99.38431
1.044444  0.511549  0.511109  102.9205
1.066667  0.512493  0.522488  106.5030
1.088889  0.513438  0.533887  110.1313
1.111111  0.514382  0.545307  113.8050
1.133333  0.515326  0.556748  117.5238
1.155556  0.516270  0.568211  121.2872
1.177778  0.517215  0.579694  125.0949
1.200000  0.518159  0.591198  128.9465
1.222222  0.519103  0.602723  132.8418
1.244444  0.520047  0.614269  136.7803
1.266667  0.520992  0.625836  140.7617
1.288889  0.521936  0.637424  144.7858
1.311111  0.522880  0.649033  148.8522
1.333333  0.523824  0.660663  152.9605
1.355556  0.524769  0.672314  157.1106
1.377778  0.525713  0.683986  161.3022
1.400000  0.526657  0.695679  165.5348
1.422222  0.527601  0.707393  169.8084
1.444444  0.528546  0.719128  174.1226
1.466667  0.529490  0.730884  178.4771
1.488889  0.530434  0.742661  182.8718
1.511111  0.531378  0.754459  187.3063
1.533333  0.532323  0.766278  191.7804
1.555556  0.533267  0.778118  196.2940
1.577778  0.534211  0.789979  200.8467
1.600000  0.535155  0.801861  205.4384
1.622222  0.536100  0.813763  210.0688
1.644444  0.537044  0.825687  214.7377
1.666667  0.537988  0.837632  219.4450
1.688889  0.538933  0.849598  224.1904
1.711111  0.539877  0.861585  228.9737
1.733333  0.540821  0.873592  233.7947
1.755556  0.541765  0.885621  238.6533
1.777778  0.542710  0.897671  243.5492
1.800000  0.543654  0.909742  248.4823
1.822222  0.544598  0.921833  253.4524
1.844444  0.545543  0.933946  258.4593
1.866667  0.546487  0.946080  263.5029
1.888889  0.547431  0.958234  268.5830
1.911111  0.548375  0.970410  273.6995
1.933333  0.549320  0.982607  278.8521
1.955556  0.550264  0.994824  284.0408
1.977778  0.551208  1.007063  289.2653
2.000000  0.552153  1.019322  294.5256
END FTABLE  9
FTABLE     20
 91    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
```

DRAFT

(ft)	(acres)	(acre-ft)	(cfs)	(ft/sec)	(Minutes)***
0.000000	0.473140	0.000000	0.000000		
0.066667	0.478398	0.031718	0.304518		
0.133333	0.483655	0.063786	0.960245		
0.200000	0.488913	0.096205	1.875256		
0.266667	0.494170	0.128975	3.010358		
0.333333	0.499427	0.162095	4.340978		
0.400000	0.504685	0.195565	5.849645		
0.466667	0.509942	0.229386	7.523070		
0.533333	0.515199	0.263557	9.350719		
0.600000	0.520457	0.298079	11.32400		
0.666667	0.525714	0.332952	13.43575		
0.733333	0.530971	0.368174	15.67993		
0.800000	0.536229	0.403748	18.05135		
0.866667	0.541486	0.439672	20.54555		
0.933333	0.546744	0.475946	23.15862		
1.000000	0.552001	0.512571	25.88717		
1.066667	0.557259	0.549546	28.72817		
1.133333	0.562516	0.586872	31.67897		
1.200000	0.567773	0.624548	34.73721		
1.266667	0.573031	0.662575	37.90078		
1.333333	0.578288	0.700952	41.16782		
1.400000	0.583546	0.739680	44.53663		
1.466667	0.588803	0.778758	48.00572		
1.533333	0.594061	0.818187	51.57372		
1.600000	0.599318	0.857966	55.23944		
1.666667	0.604575	0.898096	59.00177		
1.733333	0.609833	0.938576	62.85974		
1.800000	0.615090	0.979407	66.81246		
1.866667	0.620348	1.020589	70.85915		
1.933333	0.625605	1.062120	74.99910		
2.000000	0.630863	1.104003	79.23165		
2.066667	0.636120	1.146235	83.55626		
2.133333	0.641378	1.188819	87.97240		
2.200000	0.646635	1.231752	92.47962		
2.266667	0.651893	1.275037	97.07753		
2.333333	0.657150	1.318671	101.7658		
2.400000	0.662408	1.362657	106.5440		
2.466667	0.667665	1.406992	111.4120		
2.533333	0.672923	1.451679	116.3694		
2.600000	0.678180	1.496716	121.4162		
2.666667	0.683438	1.542103	126.5521		
2.733333	0.688695	1.587841	131.7770		
2.800000	0.693953	1.633929	137.0907		
2.866667	0.699211	1.680368	142.4932		
2.933333	0.704468	1.727157	147.9844		
3.000000	0.709726	1.774297	153.5643		
3.066667	0.714983	1.821787	159.2328		
3.133333	0.720241	1.869628	164.9899		
3.200000	0.725498	1.917819	170.8356		
3.266667	0.730756	1.966361	176.7700		
3.333333	0.736013	2.015253	182.7930		
3.400000	0.741271	2.064496	188.9048		
3.466667	0.746529	2.114089	195.1054		
3.533333	0.751786	2.164033	201.3948		
3.600000	0.757044	2.214328	207.7733		
3.666667	0.762301	2.264972	214.2408		
3.733333	0.767559	2.315968	220.7975		
3.800000	0.772817	2.367314	227.4434		
3.866667	0.778074	2.419010	234.1788		
3.933333	0.783332	2.471057	241.0038		
4.000000	0.788590	2.523454	247.9185		
4.066667	0.793847	2.576202	254.9231		
4.133333	0.799105	2.629300	262.0177		
4.200000	0.804362	2.682749	269.2024		
4.266667	0.809620	2.736549	276.4776		
4.333333	0.814878	2.790699	283.8433		
4.400000	0.820135	2.845199	291.2997		
4.466667	0.825393	2.900050	298.8471		
4.533333	0.830651	2.955252	306.4855		

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4.600000  0.835908  3.010804  314.2153
4.666667  0.841166  3.066706  322.0366
4.733333  0.846424  3.122959  329.9496
4.800000  0.851681  3.179563  337.9546
4.866667  0.856939  3.236517  346.0517
4.933333  0.862197  3.293821  354.2412
5.000000  0.867455  3.351476  362.5233
5.066667  0.872712  3.409482  370.8982
5.133333  0.877970  3.467838  379.3662
5.200000  0.883228  3.526544  387.9274
5.266667  0.888485  3.585601  396.5822
5.333333  0.893743  3.645009  405.3307
5.400000  0.899001  3.704767  414.1733
5.466667  0.904259  3.764876  423.1100
5.533333  0.909516  3.825335  432.1413
5.600000  0.914774  3.886145  441.2673
5.666667  0.920032  3.947305  450.4882
5.733333  0.925290  4.008816  459.8044
5.800000  0.930547  4.070677  469.2161
5.866667  0.935805  4.132889  478.7235
5.933333  0.941063  4.195451  488.3269
6.000000  0.946321  4.258364  498.0266
END FTABLE 20
FTABLE     24
 91    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.215174  0.000000  0.000000
0.066667  0.217224  0.014413  0.281146
0.133333  0.219273  0.028963  0.887353
0.200000  0.221323  0.043650  1.734337
0.266667  0.223372  0.058473  2.786229
0.333333  0.225422  0.073433  4.020510
0.400000  0.227471  0.088529  5.421123
0.466667  0.229521  0.103762  6.975805
0.533333  0.231570  0.119132  8.674785
0.600000  0.233620  0.134638  10.51005
0.666667  0.235669  0.150281  12.47488
0.733333  0.237719  0.166061  14.56357
0.800000  0.239768  0.181977  16.77118
0.866667  0.241817  0.198030  19.09343
0.933333  0.243867  0.214219  21.52655
1.000000  0.245916  0.230545  24.06724
1.066667  0.247966  0.247008  26.71252
1.133333  0.250015  0.263608  29.45978
1.200000  0.252065  0.280344  32.30665
1.266667  0.254114  0.297216  35.25101
1.333333  0.256164  0.314225  38.29094
1.400000  0.258213  0.331371  41.42473
1.466667  0.260263  0.348654  44.65080
1.533333  0.262312  0.366073  47.96773
1.600000  0.264362  0.383629  51.37424
1.666667  0.266411  0.401321  54.86915
1.733333  0.268461  0.419150  58.45138
1.800000  0.270511  0.437116  62.11996
1.866667  0.272560  0.455218  65.87400
1.933333  0.274610  0.473457  69.71269
2.000000  0.276659  0.491833  73.63528
2.066667  0.278709  0.510345  77.64111
2.133333  0.280758  0.528994  81.72955
2.200000  0.282808  0.547780  85.90003
2.266667  0.284857  0.566702  90.15205
2.333333  0.286907  0.585761  94.48514
2.400000  0.288956  0.604956  98.89887
2.466667  0.291006  0.624288  103.3929
2.533333  0.293055  0.643757  107.9668
2.600000  0.295105  0.663362  112.6203
2.666667  0.297155  0.683104  117.3531
2.733333  0.299204  0.702983  122.1649
2.800000  0.301254  0.722998  127.0556
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2.866667  0.303303  0.743150  132.0249
2.933333  0.305353  0.763439  137.0726
3.000000  0.307402  0.783864  142.1986
3.066667  0.309452  0.804426  147.4028
3.133333  0.311502  0.825124  152.6850
3.200000  0.313551  0.845959  158.0451
3.266667  0.315601  0.866931  163.4831
3.333333  0.317650  0.888039  168.9988
3.400000  0.319700  0.909284  174.5923
3.466667  0.321750  0.930666  180.2634
3.533333  0.323799  0.952184  186.0122
3.600000  0.325849  0.973839  191.8387
3.666667  0.327898  0.995631  197.7427
3.733333  0.329948  1.017559  203.7245
3.800000  0.331998  1.039624  209.7838
3.866667  0.334047  1.061825  215.9209
3.933333  0.336097  1.084163  222.1357
4.000000  0.338146  1.106638  228.4283
4.066667  0.340196  1.129250  234.7987
4.133333  0.342246  1.151998  241.2470
4.200000  0.344295  1.174882  247.7733
4.266667  0.346345  1.197904  254.3776
4.333333  0.348395  1.221062  261.0600
4.400000  0.350444  1.244356  267.8206
4.466667  0.352494  1.267788  274.6595
4.533333  0.354544  1.291356  281.5769
4.600000  0.356593  1.315060  288.5727
4.666667  0.358643  1.338901  295.6472
4.733333  0.360693  1.362879  302.8004
4.800000  0.362742  1.386994  310.0324
4.866667  0.364792  1.411245  317.3435
4.933333  0.366842  1.435633  324.7336
5.000000  0.368891  1.460157  332.2030
5.066667  0.370941  1.484818  339.7517
5.133333  0.372991  1.509616  347.3800
5.200000  0.375040  1.534550  355.0880
5.266667  0.377090  1.559621  362.8757
5.333333  0.379140  1.584829  370.7434
5.400000  0.381189  1.610173  378.6912
5.466667  0.383239  1.635654  386.7192
5.533333  0.385289  1.661272  394.8277
5.600000  0.387338  1.687026  403.0168
5.666667  0.389388  1.712917  411.2866
5.733333  0.391438  1.738944  419.6373
5.800000  0.393487  1.765108  428.0690
5.866667  0.395537  1.791409  436.5820
5.933333  0.397587  1.817847  445.1765
6.000000  0.399637  1.844421  453.8525
END FTABLE 24
FTABLE     26
 91    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.330716  0.000000  0.000000
0.066667  0.333866  0.022153  0.302804
0.133333  0.337016  0.044515  0.955708
0.200000  0.340166  0.067088  1.867938
0.266667  0.343316  0.089871  3.000860
0.333333  0.346466  0.112864  4.330222
0.400000  0.349616  0.136066  5.838728
0.466667  0.352765  0.159479  7.513171
0.533333  0.355915  0.183102  9.343029
0.600000  0.359065  0.206934  11.31967
0.666667  0.362215  0.230977  13.43586
0.733333  0.365365  0.255230  15.68544
0.800000  0.368515  0.279692  18.06311
0.866667  0.371665  0.304365  20.56425
0.933333  0.374815  0.329248  23.18481
1.000000  0.377965  0.354340  25.92121
1.066667  0.381115  0.379643  28.77027
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1.133333	0.384264	0.405156	31.72915
1.200000	0.387414	0.430878	34.79532
1.266667	0.390564	0.456811	37.96649
1.333333	0.393714	0.482954	41.24061
1.400000	0.396864	0.509306	44.61580
1.466667	0.400014	0.535869	48.09038
1.533333	0.403164	0.562641	51.66283
1.600000	0.406314	0.589624	55.33175
1.666667	0.409464	0.616817	59.09588
1.733333	0.412614	0.644219	62.95406
1.800000	0.415764	0.671832	66.90524
1.866667	0.418914	0.699654	70.94847
1.933333	0.422064	0.727687	75.08286
2.000000	0.425214	0.755930	79.30763
2.066667	0.428364	0.784382	83.62203
2.133333	0.431514	0.813045	88.02541
2.200000	0.434664	0.841917	92.51716
2.266667	0.437814	0.871000	97.09673
2.333333	0.440964	0.900292	101.7636
2.400000	0.444114	0.929795	106.5173
2.466667	0.447264	0.959508	111.3575
2.533333	0.450414	0.989430	116.2838
2.600000	0.453564	1.019563	121.2957
2.666667	0.456714	1.049905	126.3931
2.733333	0.459864	1.080458	131.5756
2.800000	0.463014	1.111220	136.8430
2.866667	0.466164	1.142193	142.1951
2.933333	0.469314	1.173376	147.6317
3.000000	0.472464	1.204768	153.1526
3.066667	0.475614	1.236371	158.7577
3.133333	0.478764	1.268183	164.4468
3.200000	0.481914	1.300206	170.2198
3.266667	0.485064	1.332439	176.0767
3.333333	0.488214	1.364881	182.0173
3.400000	0.491364	1.397534	188.0417
3.466667	0.494514	1.430396	194.1497
3.533333	0.497664	1.463469	200.3413
3.600000	0.500814	1.496752	206.6166
3.666667	0.503964	1.530244	212.9754
3.733333	0.507114	1.563947	219.4179
3.800000	0.510264	1.597859	225.9441
3.866667	0.513414	1.631982	232.5539
3.933333	0.516564	1.666315	239.2475
4.000000	0.519715	1.700857	246.0248
4.066667	0.522865	1.735610	252.8859
4.133333	0.526015	1.770573	259.8310
4.200000	0.529165	1.805745	266.8600
4.266667	0.532315	1.841128	273.9730
4.333333	0.535465	1.876721	281.1702
4.400000	0.538615	1.912523	288.4516
4.466667	0.541765	1.948536	295.8174
4.533333	0.544915	1.984759	303.2676
4.600000	0.548065	2.021191	310.8023
4.666667	0.551216	2.057834	318.4218
4.733333	0.554366	2.094687	326.1260
4.800000	0.557516	2.131749	333.9152
4.866667	0.560666	2.169022	341.7894
4.933333	0.563816	2.206505	349.7488
5.000000	0.566966	2.244198	357.7936
5.066667	0.570116	2.282100	365.9238
5.133333	0.573266	2.320213	374.1397
5.200000	0.576417	2.358536	382.4414
5.266667	0.579567	2.397069	390.8291
5.333333	0.582717	2.435811	399.3028
5.400000	0.585867	2.474764	407.8629
5.466667	0.589017	2.513927	416.5094
5.533333	0.592167	2.553300	425.2425
5.600000	0.595317	2.592883	434.0623
5.666667	0.598468	2.632675	442.9692
5.733333	0.601618	2.672678	451.9632

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5.800000  0.604768  2.712891  461.0445
5.866667  0.607918  2.753314  470.2133
5.933333  0.611068  2.793947  479.4697
6.000000  0.614218  2.834790  488.8141
END FTABLE 26
FTABLE      1
 91    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.307254  0.000000  0.000000
0.022222  0.308108  0.006837  0.125539
0.044444  0.308962  0.013694  0.397846
0.066667  0.309816  0.020569  0.780605
0.088889  0.310670  0.027463  1.258644
0.111111  0.311524  0.034377  1.822508
0.133333  0.312377  0.041309  2.465454
0.155556  0.313231  0.048260  3.182311
0.177778  0.314085  0.055230  3.968921
0.200000  0.314939  0.062219  4.821832
0.222222  0.315793  0.069227  5.738107
0.244444  0.316647  0.076255  6.715201
0.266667  0.317501  0.083301  7.750880
0.288889  0.318355  0.090366  8.843154
0.311111  0.319208  0.097450  9.990240
0.333333  0.320062  0.104553  11.19052
0.355556  0.320916  0.111675  12.44253
0.377778  0.321770  0.118816  13.74490
0.400000  0.322624  0.125976  15.09641
0.422222  0.323478  0.133155  16.49590
0.444444  0.324332  0.140352  17.94230
0.466667  0.325186  0.147569  19.43461
0.488889  0.326039  0.154805  20.97190
0.511111  0.326893  0.162060  22.55330
0.533333  0.327747  0.169334  24.17798
0.555556  0.328601  0.176626  25.84517
0.577778  0.329455  0.183938  27.55413
0.600000  0.330309  0.191269  29.30417
0.622222  0.331163  0.198619  31.09464
0.644444  0.332017  0.205987  32.92492
0.666667  0.332871  0.213375  34.79440
0.688889  0.333725  0.220782  36.70252
0.711111  0.334578  0.228207  38.64875
0.733333  0.335432  0.235652  40.63257
0.755556  0.336286  0.243115  42.65350
0.777778  0.337140  0.250598  44.71105
0.800000  0.337994  0.258099  46.80478
0.822222  0.338848  0.265620  48.93427
0.844444  0.339702  0.273159  51.09909
0.866667  0.340556  0.280718  53.29885
0.888889  0.341410  0.288295  55.53316
0.911111  0.342264  0.295891  57.80167
0.933333  0.343118  0.303507  60.10402
0.955556  0.343972  0.311141  62.43986
0.977778  0.344825  0.318794  64.80888
1.000000  0.345679  0.326467  67.21076
1.022222  0.346533  0.334158  69.64519
1.044444  0.347387  0.341868  72.11188
1.066667  0.348241  0.349597  74.61054
1.088889  0.349095  0.357345  77.14091
1.111111  0.349949  0.365113  79.70272
1.133333  0.350803  0.372899  82.29572
1.155556  0.351657  0.380704  84.91965
1.177778  0.352511  0.388528  87.57429
1.200000  0.353365  0.396371  90.25939
1.222222  0.354219  0.404233  92.97474
1.244444  0.355073  0.412114  95.72012
1.266667  0.355927  0.420014  98.49532
1.288889  0.356781  0.427933  101.3001
1.311111  0.357635  0.435871  104.1344
1.333333  0.358489  0.443828  106.9978
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1.355556  0.359343  0.451804  109.8903
1.377778  0.360197  0.459799  112.8117
1.400000  0.361051  0.467813  115.7618
1.422222  0.361905  0.475845  118.7404
1.444444  0.362759  0.483897  121.7473
1.466667  0.363613  0.491968  124.7825
1.488889  0.364466  0.500058  127.8456
1.511111  0.365320  0.508166  130.9367
1.533333  0.366174  0.516294  134.0556
1.555556  0.367028  0.524441  137.2020
1.577778  0.367882  0.532607  140.3759
1.600000  0.368736  0.540791  143.5772
1.622222  0.369590  0.548995  146.8056
1.644444  0.370444  0.557217  150.0612
1.666667  0.371298  0.565459  153.3436
1.688889  0.372152  0.573720  156.6530
1.711111  0.373006  0.581999  159.9890
1.733333  0.373860  0.590298  163.3517
1.755556  0.374714  0.598615  166.7409
1.777778  0.375568  0.606952  170.1564
1.800000  0.376422  0.615307  173.5983
1.822222  0.377276  0.623682  177.0663
1.844444  0.378130  0.632075  180.5604
1.866667  0.378984  0.640487  184.0805
1.888889  0.379838  0.648919  187.6265
1.911111  0.380692  0.657369  191.1984
1.933333  0.381546  0.665838  194.7959
1.955556  0.382400  0.674327  198.4191
1.977778  0.383255  0.682834  202.0678
2.000000  0.384109  0.691360  205.7420
END FTABLE  1
FTABLE     10
 91    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.235308  0.000000  0.000000
0.033333  0.236877  0.007870  0.109514
0.066667  0.238445  0.015792  0.346229
0.100000  0.240014  0.023766  0.677768
0.133333  0.241583  0.031793  1.090423
0.166667  0.243152  0.039872  1.575593
0.200000  0.244721  0.048003  2.127125
0.233333  0.246290  0.056186  2.740297
0.266667  0.247859  0.064422  3.411322
0.300000  0.249428  0.072710  4.137066
0.333333  0.250997  0.081051  4.914880
0.366667  0.252566  0.089443  5.742486
0.400000  0.254134  0.097888  6.617898
0.433333  0.255703  0.106386  7.539368
0.466667  0.257272  0.114935  8.505345
0.500000  0.258841  0.123537  9.514438
0.533333  0.260410  0.132191  10.56540
0.566667  0.261979  0.140898  11.65710
0.600000  0.263548  0.149657  12.78850
0.633333  0.265117  0.158468  13.95868
0.666667  0.266686  0.167331  15.16677
0.700000  0.268255  0.176247  16.41199
0.733333  0.269824  0.185215  17.69361
0.766667  0.271393  0.194235  19.01096
0.800000  0.272962  0.203308  20.36342
0.833333  0.274531  0.212432  21.75043
0.866667  0.276100  0.221610  23.17145
0.900000  0.277668  0.230839  24.62598
0.933333  0.279237  0.240121  26.11358
0.966667  0.280806  0.249455  27.63380
1.000000  0.282375  0.258841  29.18625
1.033333  0.283944  0.268280  30.77056
1.066667  0.285513  0.277771  32.38638
1.100000  0.287082  0.287314  34.03338
1.133333  0.288651  0.296910  35.71126
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1.166667  0.290220  0.306558  37.41974
1.200000  0.291789  0.316258  39.15854
1.233333  0.293358  0.326010  40.92742
1.266667  0.294927  0.335815  42.72615
1.300000  0.296496  0.345672  44.55449
1.333333  0.298065  0.355581  46.41225
1.366667  0.299634  0.365543  48.29924
1.400000  0.301203  0.375557  50.21526
1.433333  0.302772  0.385623  52.16016
1.466667  0.304341  0.395742  54.13376
1.500000  0.305910  0.405913  56.13593
1.533333  0.307479  0.416136  58.16651
1.566667  0.309048  0.426411  60.22539
1.600000  0.310617  0.436739  62.31243
1.633333  0.312186  0.447119  64.42752
1.666667  0.313755  0.457551  66.57055
1.700000  0.315324  0.468036  68.74142
1.733333  0.316893  0.478573  70.94003
1.766667  0.318462  0.489162  73.16631
1.800000  0.320031  0.499804  75.42016
1.833333  0.321600  0.510498  77.70151
1.866667  0.323169  0.521244  80.01028
1.900000  0.324738  0.532042  82.34642
1.933333  0.326307  0.542893  84.70986
1.966667  0.327876  0.553796  87.10054
2.000000  0.329445  0.564751  89.51841
2.033333  0.331014  0.575759  91.96342
2.066667  0.332583  0.586819  94.43554
2.100000  0.334152  0.597931  96.93470
2.133333  0.335721  0.609096  99.46089
2.166667  0.337290  0.620313  102.0141
2.200000  0.338859  0.631582  104.5942
2.233333  0.340428  0.642903  107.2013
2.266667  0.341997  0.654277  109.8352
2.300000  0.343566  0.665703  112.4961
2.333333  0.345135  0.677181  115.1838
2.366667  0.346704  0.688712  117.8984
2.400000  0.348274  0.700295  120.6398
2.433333  0.349843  0.711930  123.4080
2.466667  0.351412  0.723618  126.2031
2.500000  0.352981  0.735358  129.0249
2.533333  0.354550  0.747150  131.8736
2.566667  0.356119  0.758994  134.7491
2.600000  0.357688  0.770891  137.6513
2.633333  0.359257  0.782840  140.5804
2.666667  0.360826  0.794842  143.5363
2.700000  0.362395  0.806895  146.5190
2.733333  0.363964  0.819001  149.5285
2.766667  0.365533  0.831160  152.5649
2.800000  0.367102  0.843370  155.6280
2.833333  0.368671  0.855633  158.7181
2.866667  0.370241  0.867948  161.8350
2.900000  0.371810  0.880316  164.9787
2.933333  0.373379  0.892736  168.1494
2.966667  0.374948  0.905208  171.3469
3.000000  0.376517  0.917732  174.5714
END FTABLE 10
FTABLE     25
 91    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.766299  0.000000  0.000000
0.044444  0.769705  0.034133  0.301288
0.088889  0.773112  0.068418  0.953820
0.133333  0.776518  0.102854  1.869579
0.177778  0.779924  0.137442  3.011553
0.222222  0.783330  0.172181  4.356578
0.266667  0.786736  0.207071  5.888099
0.311111  0.790142  0.242113  7.593393
0.355556  0.793548  0.277306  9.462229
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0.400000	0.796954	0.312651	11.48611
0.444444	0.800361	0.348147	13.65783
0.488889	0.803767	0.383794	15.97113
0.533333	0.807173	0.419593	18.42056
0.577778	0.810579	0.455543	21.00126
0.622222	0.813985	0.491644	23.70888
0.666667	0.817391	0.527897	26.53952
0.711111	0.820797	0.564301	29.48962
0.755556	0.824204	0.600857	32.55595
0.800000	0.827610	0.637564	35.73553
0.844444	0.831016	0.674422	39.02562
0.888889	0.834422	0.711432	42.42370
0.933333	0.837828	0.748593	45.92742
0.977778	0.841234	0.785905	49.53461
1.022222	0.844641	0.823369	53.24322
1.066667	0.848047	0.860984	57.05137
1.111111	0.851453	0.898751	60.95727
1.155556	0.854859	0.936669	64.95925
1.200000	0.858265	0.974739	69.05575
1.244444	0.861671	1.012959	73.24529
1.288889	0.865078	1.051332	77.52647
1.333333	0.868484	1.089855	81.89800
1.377778	0.871890	1.128530	86.35861
1.422222	0.875296	1.167357	90.90715
1.466667	0.878702	1.206334	95.54249
1.511111	0.882109	1.245463	100.2636
1.555556	0.885515	1.284744	105.0694
1.600000	0.888921	1.324176	109.9590
1.644444	0.892327	1.363759	114.9316
1.688889	0.895733	1.403494	119.9861
1.733333	0.899140	1.443380	125.1219
1.777778	0.902546	1.483417	130.3381
1.822222	0.905952	1.523606	135.6340
1.866667	0.909358	1.563946	141.0089
1.911111	0.912765	1.604438	146.4621
1.955556	0.916171	1.645081	151.9929
2.000000	0.919577	1.685875	157.6008
2.044444	0.922983	1.726821	163.2851
2.088889	0.926390	1.767918	169.0454
2.133333	0.929796	1.809167	174.8810
2.177778	0.933202	1.850567	180.7914
2.222222	0.936608	1.892118	186.7761
2.266667	0.940015	1.933821	192.8348
2.311111	0.943421	1.975675	198.9668
2.355556	0.946827	2.017681	205.1719
2.400000	0.950233	2.059838	211.4495
2.444444	0.953640	2.102146	217.7993
2.488889	0.957046	2.144605	224.2209
2.533333	0.960452	2.187217	230.7140
2.577778	0.963858	2.229979	237.2781
2.622222	0.967265	2.272893	243.9130
2.666667	0.970671	2.315958	250.6183
2.711111	0.974077	2.359175	257.3938
2.755556	0.977484	2.402543	264.2391
2.800000	0.980890	2.446062	271.1539
2.844444	0.984296	2.489733	278.1380
2.888889	0.987702	2.533555	285.1912
2.933333	0.991109	2.577529	292.3131
2.977778	0.994515	2.621654	299.5036
3.022222	0.997921	2.665930	306.7624
3.066667	1.001328	2.710358	314.0893
3.111111	1.004734	2.754937	321.4841
3.155556	1.008140	2.799667	328.9466
3.200000	1.011547	2.844549	336.4766
3.244444	1.014953	2.889583	344.0739
3.288889	1.018359	2.934767	351.7383
3.333333	1.021766	2.980104	359.4697
3.377778	1.025172	3.025591	367.2679
3.422222	1.028578	3.071230	375.1328
3.466667	1.031985	3.117020	383.0642

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3.511111  1.035391  3.162962  391.0620
3.555556  1.038797  3.209055  399.1260
3.600000  1.042204  3.255299  407.2561
3.644444  1.045610  3.301695  415.4522
3.688889  1.049016  3.348243  423.7142
3.733333  1.052423  3.394941  432.0420
3.777778  1.055829  3.441791  440.4354
3.822222  1.059235  3.488793  448.8944
3.866667  1.062642  3.535945  457.4189
3.911111  1.066048  3.583250  466.0088
3.955556  1.069454  3.630705  474.6639
4.000000  1.072861  3.678312  483.3843
END FTABLE 25
FTABLE     11
 91    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.342700  0.000000  0.000000
0.044444  0.345239  0.015288  0.227257
0.088889  0.347777  0.030688  0.718160
0.133333  0.350316  0.046201  1.405264
0.177778  0.352855  0.061827  2.259970
0.222222  0.355394  0.077566  3.264324
0.266667  0.357933  0.093418  4.405488
0.311111  0.360472  0.109382  5.673620
0.355556  0.363011  0.125460  7.060835
0.400000  0.365549  0.141650  8.560625
0.444444  0.368088  0.157953  10.16750
0.488889  0.370627  0.174369  11.87673
0.533333  0.373166  0.190898  13.68425
0.577778  0.375705  0.207539  15.58644
0.622222  0.378244  0.224293  17.58012
0.666667  0.380783  0.241161  19.66246
0.711111  0.383322  0.258141  21.83090
0.755556  0.385861  0.275234  24.08315
0.800000  0.388399  0.292440  26.41713
0.844444  0.390938  0.309758  28.83095
0.888889  0.393477  0.327190  31.32287
0.933333  0.396016  0.344734  33.89134
0.977778  0.398555  0.362391  36.53489
1.022222  0.401094  0.380161  39.25220
1.066667  0.403633  0.398044  42.04205
1.111111  0.406172  0.416040  44.90330
1.155556  0.408711  0.434148  47.83492
1.200000  0.411250  0.452369  50.83594
1.244444  0.413789  0.470704  53.90546
1.288889  0.416328  0.489151  57.04266
1.333333  0.418867  0.507711  60.24677
1.377778  0.421406  0.526383  63.51707
1.422222  0.423945  0.545169  66.85291
1.466667  0.426484  0.564067  70.25365
1.511111  0.429023  0.583078  73.71873
1.555556  0.431562  0.602203  77.24761
1.600000  0.434101  0.621440  80.83979
1.644444  0.436640  0.640789  84.49481
1.688889  0.439179  0.660252  88.21224
1.733333  0.441718  0.679827  91.99167
1.777778  0.444257  0.699516  95.83273
1.822222  0.446796  0.719317  99.73507
1.866667  0.449335  0.739231  103.6984
1.911111  0.451874  0.759258  107.7223
1.955556  0.454413  0.779397  111.8066
2.000000  0.456952  0.799650  115.9510
2.044444  0.459491  0.820015  120.1553
2.088889  0.462030  0.840494  124.4193
2.133333  0.464569  0.861085  128.7426
2.177778  0.467108  0.881789  133.1252
2.222222  0.469647  0.902605  137.5669
2.266667  0.472186  0.923535  142.0675
2.311111  0.474725  0.944578  146.6268
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2.355556  0.477264  0.965733  151.2447
2.400000  0.479803  0.987001  155.9211
2.444444  0.482342  1.008382  160.6559
2.488889  0.484882  1.029876  165.4489
2.533333  0.487421  1.051483  170.3001
2.577778  0.489960  1.073202  175.2094
2.622222  0.492499  1.095035  180.1766
2.666667  0.495038  1.116980  185.2019
2.711111  0.497577  1.139038  190.2849
2.755556  0.500116  1.161209  195.4258
2.800000  0.502655  1.183493  200.6245
2.844444  0.505194  1.205889  205.8809
2.888889  0.507734  1.228399  211.1951
2.933333  0.510273  1.251021  216.5669
2.977778  0.512812  1.273757  221.9963
3.022222  0.515351  1.296605  227.4834
3.066667  0.517890  1.319566  233.0282
3.111111  0.520429  1.342639  238.6306
3.155556  0.522968  1.365826  244.2906
3.200000  0.525508  1.389125  250.0082
3.244444  0.528047  1.412538  255.7836
3.288889  0.530586  1.436063  261.6165
3.333333  0.533125  1.459701  267.5072
3.377778  0.535664  1.483452  273.4556
3.422222  0.538204  1.507315  279.4618
3.466667  0.540743  1.531292  285.5257
3.511111  0.543282  1.555382  291.6474
3.555556  0.545821  1.579584  297.8270
3.600000  0.548360  1.603899  304.0644
3.644444  0.550900  1.628327  310.3598
3.688889  0.553439  1.652868  316.7132
3.733333  0.555978  1.677521  323.1246
3.777778  0.558517  1.702288  329.5941
3.822222  0.561056  1.727167  336.1217
3.866667  0.563596  1.752160  342.7075
3.911111  0.566135  1.777265  349.3516
3.955556  0.568674  1.802483  356.0540
4.000000  0.571213  1.827814  362.8147
END FTABLE 11
FTABLE     29
 91    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.515152  0.000000  0.000000
0.066667  0.519445  0.034487  0.297037
0.133333  0.523738  0.069259  0.938157
0.200000  0.528031  0.104318  1.834809
0.266667  0.532324  0.139663  2.949374
0.333333  0.536617  0.175295  4.258231
0.400000  0.540910  0.211212  5.744505
0.466667  0.545203  0.247416  7.395281
0.533333  0.549496  0.283906  9.200234
0.600000  0.553789  0.320682  11.15086
0.666667  0.558083  0.357745  13.24001
0.733333  0.562376  0.395093  15.46156
0.800000  0.566669  0.432728  17.81021
0.866667  0.570962  0.470649  20.28134
0.933333  0.575255  0.508856  22.87085
1.000000  0.579548  0.547350  25.57512
1.066667  0.583841  0.586129  28.39089
1.133333  0.588134  0.625195  31.31527
1.200000  0.592427  0.664547  34.34561
1.266667  0.596721  0.704186  37.47956
1.333333  0.601014  0.744110  40.71494
1.400000  0.605307  0.784321  44.04981
1.466667  0.609600  0.824818  47.48237
1.533333  0.613893  0.865601  51.01098
1.600000  0.618186  0.906670  54.63415
1.666667  0.622479  0.948026  58.35051
1.733333  0.626773  0.989667  62.15878
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1.800000  0.631066  1.031595  66.05782
1.866667  0.635359  1.073809  70.04654
1.933333  0.639652  1.116310  74.12397
2.000000  0.643945  1.159096  78.28920
2.066667  0.648238  1.202169  82.54138
2.133333  0.652532  1.245528  86.87975
2.200000  0.656825  1.289173  91.30360
2.266667  0.661118  1.333105  95.81226
2.333333  0.665411  1.377322  100.4051
2.400000  0.669704  1.421826  105.0816
2.466667  0.673997  1.466616  109.8413
2.533333  0.678291  1.511693  114.6836
2.600000  0.682584  1.557055  119.6081
2.666667  0.686877  1.602704  124.6143
2.733333  0.691170  1.648639  129.7021
2.800000  0.695463  1.694860  134.8709
2.866667  0.699757  1.741367  140.1205
2.933333  0.704050  1.788161  145.4506
3.000000  0.708343  1.835240  150.8608
3.066667  0.712636  1.882606  156.3511
3.133333  0.716929  1.930259  161.9212
3.200000  0.721223  1.978197  167.5708
3.266667  0.725516  2.026422  173.2998
3.333333  0.729809  2.074933  179.1080
3.400000  0.734102  2.123730  184.9953
3.466667  0.738396  2.172813  190.9616
3.533333  0.742689  2.222182  197.0067
3.600000  0.746982  2.271838  203.1306
3.666667  0.751275  2.321780  209.3331
3.733333  0.755568  2.372008  215.6142
3.800000  0.759862  2.422522  221.9739
3.866667  0.764155  2.473323  228.4120
3.933333  0.768448  2.524410  234.9286
4.000000  0.772741  2.575783  241.5236
4.066667  0.777035  2.627442  248.1970
4.133333  0.781328  2.679387  254.9488
4.200000  0.785621  2.731619  261.7790
4.266667  0.789914  2.784137  268.6876
4.333333  0.794208  2.836941  275.6747
4.400000  0.798501  2.890031  282.7402
4.466667  0.802794  2.943408  289.8841
4.533333  0.807087  2.997070  297.1066
4.600000  0.811381  3.051019  304.4076
4.666667  0.815674  3.105254  311.7873
4.733333  0.819967  3.159776  319.2456
4.800000  0.824260  3.214583  326.7827
4.866667  0.828554  3.269677  334.3985
4.933333  0.832847  3.325057  342.0932
5.000000  0.837140  3.380723  349.8669
5.066667  0.841434  3.436676  357.7196
5.133333  0.845727  3.492915  365.6514
5.200000  0.850020  3.549439  373.6624
5.266667  0.854313  3.606251  381.7528
5.333333  0.858607  3.663348  389.9225
5.400000  0.862900  3.720732  398.1717
5.466667  0.867193  3.778401  406.5006
5.533333  0.871487  3.836357  414.9091
5.600000  0.875780  3.894600  423.3975
5.666667  0.880073  3.953128  431.9659
5.733333  0.884367  4.011943  440.6143
5.800000  0.888660  4.071044  449.3429
5.866667  0.892953  4.130431  458.1518
5.933333  0.897247  4.190104  467.0411
6.000000  0.901540  4.250063  476.0110
END FTABLE 29
FTABLE     27
 91    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.572773  0.000000  0.000000
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0.066667	0.576592	0.038312	0.613257
0.133333	0.580411	0.076879	1.938823
0.200000	0.584230	0.115700	3.795380
0.266667	0.588049	0.154776	6.106176
0.333333	0.591868	0.194107	8.823042
0.400000	0.595687	0.233692	11.91152
0.466667	0.599505	0.273532	15.34518
0.533333	0.603324	0.313626	19.10280
0.600000	0.607143	0.353975	23.16684
0.666667	0.610962	0.394578	27.52247
0.733333	0.614781	0.435437	32.15691
0.800000	0.618600	0.476549	37.05907
0.866667	0.622419	0.517917	42.21914
0.933333	0.626238	0.559538	47.62844
1.000000	0.630057	0.601415	53.27919
1.066667	0.633876	0.643546	59.16438
1.133333	0.637695	0.685932	65.27769
1.200000	0.641514	0.728572	71.61337
1.266667	0.645333	0.771467	78.16616
1.333333	0.649152	0.814616	84.93126
1.400000	0.652971	0.858021	91.90425
1.466667	0.656790	0.901679	99.08110
1.533333	0.660609	0.945593	106.4580
1.600000	0.664428	0.989760	114.0316
1.666667	0.668247	1.034183	121.7986
1.733333	0.672066	1.078860	129.7561
1.800000	0.675885	1.123792	137.9012
1.866667	0.679704	1.168978	146.2314
1.933333	0.683523	1.214419	154.7444
2.000000	0.687342	1.260114	163.4379
2.066667	0.691161	1.306064	172.3097
2.133333	0.694980	1.352269	181.3580
2.200000	0.698799	1.398728	190.5810
2.266667	0.702618	1.445442	199.9768
2.333333	0.706437	1.492411	209.5440
2.400000	0.710256	1.539634	219.2810
2.466667	0.714075	1.587112	229.1864
2.533333	0.717894	1.634844	239.2589
2.600000	0.721713	1.682831	249.4973
2.666667	0.725533	1.731072	259.9005
2.733333	0.729352	1.779569	270.4673
2.800000	0.733171	1.828319	281.1966
2.866667	0.736990	1.877325	292.0877
2.933333	0.740809	1.926585	303.1396
3.000000	0.744628	1.976099	314.3513
3.066667	0.748447	2.025868	325.7223
3.133333	0.752266	2.075892	337.2516
3.200000	0.756085	2.126171	348.9387
3.266667	0.759905	2.176704	360.7828
3.333333	0.763724	2.227491	372.7834
3.400000	0.767543	2.278533	384.9399
3.466667	0.771362	2.329830	397.2517
3.533333	0.775181	2.381382	409.7185
3.600000	0.779000	2.433188	422.3397
3.666667	0.782819	2.485248	435.1148
3.733333	0.786639	2.537564	448.0436
3.800000	0.790458	2.590134	461.1255
3.866667	0.794277	2.642958	474.3603
3.933333	0.798096	2.696037	487.7477
4.000000	0.801915	2.749371	501.2874
4.066667	0.805735	2.802959	514.9790
4.133333	0.809554	2.856802	528.8224
4.200000	0.813373	2.910900	542.8173
4.266667	0.817192	2.965252	556.9636
4.333333	0.821011	3.019859	571.2609
4.400000	0.824831	3.074720	585.7092
4.466667	0.828650	3.129836	600.3083
4.533333	0.832469	3.185207	615.0581
4.600000	0.836288	3.240832	629.9584
4.666667	0.840108	3.296712	645.0092

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4.733333  0.843927  3.352846  660.2103
4.800000  0.847746  3.409235  675.5617
4.866667  0.851565  3.465879  691.0633
4.933333  0.855385  3.522777  706.7151
5.000000  0.859204  3.579930  722.5170
5.066667  0.863023  3.637338  738.4690
5.133333  0.866842  3.695000  754.5712
5.200000  0.870662  3.752917  770.8234
5.266667  0.874481  3.811088  787.2257
5.333333  0.878300  3.869514  803.7781
5.400000  0.882120  3.928195  820.4807
5.466667  0.885939  3.987130  837.3335
5.533333  0.889758  4.046320  854.3365
5.600000  0.893578  4.105765  871.4897
5.666667  0.897397  4.165464  888.7933
5.733333  0.901216  4.225418  906.2473
5.800000  0.905035  4.285626  923.8518
5.866667  0.908855  4.346089  941.6069
5.933333  0.912674  4.406807  959.5127
6.000000  0.916494  4.467779  977.5691
END FTABLE 27
FTABLE     31
 91    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.590220  0.000000  0.000000
0.066667  0.592844  0.039435  0.478465
0.133333  0.595467  0.079046  1.514728
0.200000  0.598091  0.118831  2.969012
0.266667  0.600714  0.158791  4.782540
0.333333  0.603337  0.198926  6.918527
0.400000  0.605961  0.239236  9.350680
0.466667  0.608584  0.279721  12.05880
0.533333  0.611208  0.320381  15.02663
0.600000  0.613831  0.361215  18.24069
0.666667  0.616455  0.402225  21.68951
0.733333  0.619078  0.443409  25.36319
0.800000  0.621702  0.484769  29.25304
0.866667  0.624325  0.526303  33.35135
0.933333  0.626948  0.568012  37.65123
1.000000  0.629572  0.609896  42.14647
1.066667  0.632195  0.651955  46.83142
1.133333  0.634819  0.694189  51.70095
1.200000  0.637442  0.736597  56.75032
1.266667  0.640066  0.779181  61.97520
1.333333  0.642689  0.821940  67.37157
1.400000  0.645313  0.864873  72.93571
1.466667  0.647936  0.907981  78.66415
1.533333  0.650559  0.951264  84.55367
1.600000  0.653183  0.994723  90.60125
1.666667  0.655806  1.038356  96.80406
1.733333  0.658430  1.082163  103.1595
1.800000  0.661053  1.126146  109.6650
1.866667  0.663677  1.170304  116.3182
1.933333  0.666300  1.214636  123.1170
2.000000  0.668924  1.259144  130.0593
2.066667  0.671547  1.303826  137.1430
2.133333  0.674171  1.348684  144.3664
2.200000  0.676794  1.393716  151.7276
2.266667  0.679418  1.438923  159.2250
2.333333  0.682041  1.484305  166.8570
2.400000  0.684665  1.529862  174.6220
2.466667  0.687288  1.575593  182.5187
2.533333  0.689912  1.621500  190.5457
2.600000  0.692535  1.667582  198.7017
2.666667  0.695159  1.713838  206.9853
2.733333  0.697782  1.760269  215.3956
2.800000  0.700406  1.806876  223.9312
2.866667  0.703029  1.853657  232.5912
2.933333  0.705653  1.900613  241.3746
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3.000000  0.708276  1.947744  250.2802
3.066667  0.710900  1.995050  259.3073
3.133333  0.713523  2.042530  268.4549
3.200000  0.716147  2.090186  277.7222
3.266667  0.718770  2.138017  287.1084
3.333333  0.721394  2.186022  296.6125
3.400000  0.724017  2.234202  306.2340
3.466667  0.726641  2.282558  315.9721
3.533333  0.729264  2.331088  325.8262
3.600000  0.731888  2.379793  335.7954
3.666667  0.734511  2.428673  345.8793
3.733333  0.737135  2.477728  356.0773
3.800000  0.739758  2.526958  366.3886
3.866667  0.742382  2.576362  376.8129
3.933333  0.745005  2.625942  387.3495
4.000000  0.747629  2.675696  397.9980
4.066667  0.750252  2.725626  408.7579
4.133333  0.752876  2.775730  419.6287
4.200000  0.755499  2.826009  430.6099
4.266667  0.758123  2.876463  441.7011
4.333333  0.760747  2.927092  452.9020
4.400000  0.763370  2.977896  464.2121
4.466667  0.765994  3.028875  475.6311
4.533333  0.768617  3.080029  487.1585
4.600000  0.771241  3.131357  498.7941
4.666667  0.773864  3.182861  510.5375
4.733333  0.776488  3.234539  522.3884
4.800000  0.779111  3.286392  534.3464
4.866667  0.781735  3.338421  546.4114
4.933333  0.784359  3.390624  558.5830
5.000000  0.786982  3.443002  570.8610
5.066667  0.789606  3.495555  583.2451
5.133333  0.792229  3.548282  595.7350
5.200000  0.794853  3.601185  608.3306
5.266667  0.797476  3.654263  621.0316
5.333333  0.800100  3.707515  633.8377
5.400000  0.802723  3.760943  646.7489
5.466667  0.805347  3.814545  659.7649
5.533333  0.807971  3.868322  672.8855
5.600000  0.810594  3.922275  686.1105
5.666667  0.813218  3.976402  699.4398
5.733333  0.815841  4.030704  712.8733
5.800000  0.818465  4.085181  726.4107
5.866667  0.821089  4.139832  740.0519
5.933333  0.823712  4.194659  753.7969
6.000000  0.826336  4.249661  767.6454
END FTABLE 31
FTABLE     32
 91    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.458333  0.000000  0.000000
0.088889  0.461050  0.040861  0.975325
0.177778  0.463766  0.081964  3.084889
0.266667  0.466483  0.123309  6.041438
0.355556  0.469199  0.164895  9.723613
0.444444  0.471916  0.206722  14.05530
0.533333  0.474632  0.248791  18.98206
0.622222  0.477349  0.291101  24.46206
0.711111  0.480066  0.333653  30.46174
0.800000  0.482782  0.376446  36.95325
0.888889  0.485499  0.419481  43.91304
0.977778  0.488215  0.462757  51.32079
1.066667  0.490932  0.506275  59.15876
1.155556  0.493648  0.550034  67.41128
1.244444  0.496365  0.594034  76.06442
1.333333  0.499082  0.638276  85.10565
1.422222  0.501798  0.682760  94.52367
1.511111  0.504515  0.727485  104.3082
1.600000  0.507231  0.772452  114.4500
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1.688889	0.509948	0.817659	124.9404
1.777778	0.512665	0.863109	135.7717
1.866667	0.515381	0.908800	146.9364
1.955556	0.518098	0.954732	158.4281
2.044444	0.520814	1.000906	170.2404
2.133333	0.523531	1.047322	182.3677
2.222222	0.526248	1.093978	194.8045
2.311111	0.528964	1.140877	207.5460
2.400000	0.531681	1.188016	220.5874
2.488889	0.534398	1.235398	233.9245
2.577778	0.537114	1.283021	247.5532
2.666667	0.539831	1.330885	261.4696
2.755556	0.542548	1.378990	275.6703
2.844444	0.545264	1.427338	290.1518
2.933333	0.547981	1.475926	304.9111
3.022222	0.550698	1.524757	319.9451
3.111111	0.553414	1.573828	335.2511
3.200000	0.556131	1.623141	350.8265
3.288889	0.558848	1.672696	366.6687
3.377778	0.561565	1.722492	382.7756
3.466667	0.564281	1.772530	399.1448
3.555556	0.566998	1.822809	415.7744
3.644444	0.569715	1.873329	432.6623
3.733333	0.572431	1.924091	449.8067
3.822222	0.575148	1.975095	467.2059
3.911111	0.577865	2.026340	484.8583
4.000000	0.580582	2.077826	502.7622
4.088889	0.583298	2.129554	520.9162
4.177778	0.586015	2.181524	539.3190
4.266667	0.588732	2.233735	557.9692
4.355556	0.591449	2.286187	576.8655
4.444444	0.594166	2.338881	596.0069
4.533333	0.596882	2.391817	615.3922
4.622222	0.599599	2.444994	635.0203
4.711111	0.602316	2.498412	654.8904
4.800000	0.605033	2.552072	675.0013
4.888889	0.607750	2.605974	695.3524
4.977778	0.610466	2.660117	715.9427
5.066667	0.613183	2.714501	736.7715
5.155556	0.615900	2.769127	757.8380
5.244444	0.618617	2.823994	779.1415
5.333333	0.621334	2.879103	800.6815
5.422222	0.624050	2.934454	822.4573
5.511111	0.626767	2.990046	844.4683
5.600000	0.629484	3.045879	866.7139
5.688889	0.632201	3.101954	889.1938
5.777778	0.634918	3.158270	911.9074
5.866667	0.637635	3.214828	934.8542
5.955556	0.640352	3.271628	958.0339
6.044444	0.643068	3.328668	981.4462
6.133333	0.645785	3.385951	1005.091
6.222222	0.648502	3.443475	1028.967
6.311111	0.651219	3.501240	1053.074
6.400000	0.653936	3.559247	1077.413
6.488889	0.656653	3.617495	1101.983
6.577778	0.659370	3.675985	1126.784
6.666667	0.662087	3.734717	1151.815
6.755556	0.664804	3.793690	1177.077
6.844444	0.667521	3.852904	1202.568
6.933333	0.670238	3.912360	1228.290
7.022222	0.672954	3.972057	1254.242
7.111111	0.675671	4.031996	1280.423
7.200000	0.678388	4.092177	1306.834
7.288889	0.681105	4.152599	1333.475
7.377778	0.683822	4.213262	1360.345
7.466667	0.686539	4.274167	1387.445
7.555556	0.689256	4.335314	1414.774
7.644444	0.691973	4.396702	1442.333
7.733333	0.694690	4.458331	1470.121
7.822222	0.697407	4.520202	1498.138

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7.911111  0.700124  4.582314  1526.385
8.000000  0.702841  4.644669  1554.862
END FTABLE 32
FTABLE     17
 91    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.465014  0.000000  0.000000
0.066667  0.470181  0.031173  0.213525
0.133333  0.475348  0.062691  0.673314
0.200000  0.480515  0.094553  1.314910
0.266667  0.485682  0.126759  2.110831
0.333333  0.490848  0.159310  3.043848
0.400000  0.496015  0.192206  4.101710
0.466667  0.501182  0.225446  5.275098
0.533333  0.506349  0.259030  6.556626
0.600000  0.511516  0.292959  7.940268
0.666667  0.516683  0.327232  9.421007
0.733333  0.521850  0.361850  10.99460
0.800000  0.527017  0.396812  12.65742
0.866667  0.532184  0.432119  14.40632
0.933333  0.537351  0.467770  16.23858
1.000000  0.542518  0.503766  18.15181
1.066667  0.547685  0.540106  20.14389
1.133333  0.552852  0.576790  22.21296
1.200000  0.558019  0.613820  24.35736
1.266667  0.563186  0.651193  26.57563
1.333333  0.568353  0.688911  28.86644
1.400000  0.573520  0.726973  31.22862
1.466667  0.578687  0.765380  33.66110
1.533333  0.583854  0.804132  36.16295
1.600000  0.589021  0.843227  38.73331
1.666667  0.594188  0.882668  41.37142
1.733333  0.599355  0.922452  44.07659
1.800000  0.604522  0.962582  46.84820
1.866667  0.609689  1.003055  49.68569
1.933333  0.614856  1.043873  52.58858
2.000000  0.620023  1.085036  55.55640
2.066667  0.625190  1.126543  58.58877
2.133333  0.630357  1.168395  61.68532
2.200000  0.635524  1.210591  64.84574
2.266667  0.640691  1.253131  68.06974
2.333333  0.645858  1.296016  71.35707
2.400000  0.651025  1.339246  74.70752
2.466667  0.656192  1.382819  78.12090
2.533333  0.661359  1.426738  81.59703
2.600000  0.666526  1.471001  85.13577
2.666667  0.671693  1.515608  88.73701
2.733333  0.676860  1.560560  92.40063
2.800000  0.682027  1.605856  96.12657
2.866667  0.687194  1.651497  99.91475
2.933333  0.692361  1.697482  103.7651
3.000000  0.697528  1.743811  107.6777
3.066667  0.702695  1.790486  111.6523
3.133333  0.707862  1.837504  115.6892
3.200000  0.713029  1.884867  119.7881
3.266667  0.718196  1.932575  123.9492
3.333333  0.723363  1.980627  128.1725
3.400000  0.728530  2.029023  132.4580
3.466667  0.733697  2.077764  136.8058
3.533333  0.738864  2.126849  141.2159
3.600000  0.744031  2.176279  145.6884
3.666667  0.749198  2.226054  150.2234
3.733333  0.754366  2.276172  154.8208
3.800000  0.759533  2.326636  159.4809
3.866667  0.764700  2.377443  164.2037
3.933333  0.769867  2.428596  168.9893
4.000000  0.775034  2.480092  173.8379
4.066667  0.780201  2.531933  178.7494
4.133333  0.785368  2.584119  183.7240
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4.200000  0.790535  2.636649  188.7619
4.266667  0.795702  2.689524  193.8632
4.333333  0.800869  2.742743  199.0279
4.400000  0.806036  2.796306  204.2563
4.466667  0.811203  2.850214  209.5484
4.533333  0.816370  2.904467  214.9044
4.600000  0.821538  2.959064  220.3245
4.666667  0.826705  3.014005  225.8087
4.733333  0.831872  3.069291  231.3572
4.800000  0.837039  3.124921  236.9702
4.866667  0.842206  3.180896  242.6478
4.933333  0.847373  3.237215  248.3902
5.000000  0.852540  3.293879  254.1975
5.066667  0.857707  3.350887  260.0699
5.133333  0.862874  3.408240  266.0076
5.200000  0.868041  3.465937  272.0106
5.266667  0.873209  3.523979  278.0793
5.333333  0.878376  3.582365  284.2136
5.400000  0.883543  3.641096  290.4139
5.466667  0.888710  3.700171  296.6803
5.533333  0.893877  3.759590  303.0129
5.600000  0.899044  3.819354  309.4120
5.666667  0.904211  3.879463  315.8776
5.733333  0.909378  3.939916  322.4100
5.800000  0.914546  4.000713  329.0094
5.866667  0.919713  4.061855  335.6759
5.933333  0.924880  4.123342  342.4097
6.000000  0.930047  4.185173  349.2110
END FTABLE 17
FTABLE      2
 91    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)    (cfs)   (ft/sec)    (Minutes)***
0.000000  0.136915  0.000000  0.000000
0.044444  0.138436  0.006119  0.114703
0.088889  0.139957  0.012305  0.361698
0.133333  0.141479  0.018560  0.706357
0.177778  0.143000  0.024881  1.133918
0.222222  0.144522  0.031271  1.635126
0.266667  0.146043  0.037728  2.203399
0.311111  0.147564  0.044252  2.833731
0.355556  0.149086  0.050845  3.522156
0.400000  0.150607  0.057504  4.265435
0.444444  0.152129  0.064232  5.060873
0.488889  0.153650  0.071027  5.906193
0.533333  0.155172  0.077890  6.799442
0.577778  0.156693  0.084820  7.738937
0.622222  0.158214  0.091818  8.723209
0.666667  0.159736  0.098883  9.750975
0.711111  0.161257  0.106017  10.82110
0.755556  0.162779  0.113217  11.93259
0.800000  0.164300  0.120486  13.08454
0.844444  0.165822  0.127822  14.27617
0.888889  0.167343  0.135226  15.50677
0.933333  0.168864  0.142697  16.77571
0.977778  0.170386  0.150236  18.08242
1.022222  0.171907  0.157842  19.42639
1.066667  0.173429  0.165516  20.80716
1.111111  0.174950  0.173258  22.22433
1.155556  0.176472  0.181067  23.67752
1.200000  0.177993  0.188944  25.16640
1.244444  0.179515  0.196889  26.69067
1.288889  0.181036  0.204901  28.25007
1.333333  0.182558  0.212981  29.84436
1.377778  0.184079  0.221129  31.47332
1.422222  0.185601  0.229344  33.13676
1.466667  0.187122  0.237627  34.83450
1.511111  0.188644  0.245977  36.56640
1.555556  0.190165  0.254395  38.33233
1.600000  0.191687  0.262880  40.13216
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1.644444  0.193208  0.271434  41.96579
1.688889  0.194730  0.280054  43.83313
1.733333  0.196251  0.288743  45.73411
1.777778  0.197773  0.297499  47.66866
1.822222  0.199294  0.306323  49.63672
1.866667  0.200816  0.315214  51.63826
1.911111  0.202337  0.324173  53.67324
1.955556  0.203859  0.333200  55.74162
2.000000  0.205380  0.342294  57.84340
2.044444  0.206902  0.351456  59.97856
2.088889  0.208423  0.360685  62.14710
2.133333  0.209945  0.369982  64.34902
2.177778  0.211466  0.379347  66.58433
2.222222  0.212988  0.388779  68.85304
2.266667  0.214509  0.398279  71.15518
2.311111  0.216031  0.407847  73.49077
2.355556  0.217552  0.417482  75.85983
2.400000  0.219074  0.427185  78.26241
2.444444  0.220595  0.436955  80.69854
2.488889  0.222117  0.446793  83.16826
2.533333  0.223638  0.456699  85.67161
2.577778  0.225160  0.466672  88.20866
2.622222  0.226682  0.476713  90.77944
2.666667  0.228203  0.486821  93.38401
2.711111  0.229725  0.496998  96.02243
2.755556  0.231246  0.507241  98.69477
2.800000  0.232768  0.517553  101.4011
2.844444  0.234289  0.527932  104.1414
2.888889  0.235811  0.538379  106.9159
2.933333  0.237332  0.548893  109.7245
2.977778  0.238854  0.559475  112.5674
3.022222  0.240376  0.570124  115.4446
3.066667  0.241897  0.580841  118.3562
3.111111  0.243419  0.591626  121.3022
3.155556  0.244940  0.602479  124.2828
3.200000  0.246462  0.613399  127.2981
3.244444  0.247984  0.624386  130.3480
3.288889  0.249505  0.635442  133.4328
3.333333  0.251027  0.646565  136.5524
3.377778  0.252548  0.657755  139.7070
3.422222  0.254070  0.669013  142.8967
3.466667  0.255592  0.680339  146.1215
3.511111  0.257113  0.691733  149.3815
3.555556  0.258635  0.703194  152.6768
3.600000  0.260156  0.714722  156.0075
3.644444  0.261678  0.726319  159.3738
3.688889  0.263200  0.737983  162.7756
3.733333  0.264721  0.749714  166.2131
3.777778  0.266243  0.761513  169.6864
3.822222  0.267764  0.773380  173.1955
3.866667  0.269286  0.785315  176.7407
3.911111  0.270808  0.797317  180.3218
3.955556  0.272329  0.809387  183.9392
4.000000  0.273851  0.821524  187.5928
END FTABLE  2
FTABLE      3
 91    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.762948  0.000000  0.000000
0.066667  0.771425  0.051146  0.245510
0.133333  0.779902  0.102857  0.774174
0.200000  0.788380  0.155133  1.511880
0.266667  0.796857  0.207974  2.427028
0.333333  0.805334  0.261380  3.499809
0.400000  0.813812  0.315352  4.716135
0.466667  0.822289  0.369889  6.065293
0.533333  0.830766  0.424990  7.538791
0.600000  0.839244  0.480657  9.129699
0.666667  0.847721  0.536890  10.83225
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0.733333	0.856199	0.593687	12.64156
0.800000	0.864676	0.651049	14.55346
0.866667	0.873153	0.708977	16.56435
0.933333	0.881631	0.767470	18.67108
1.000000	0.890108	0.826528	20.87090
1.066667	0.898585	0.886151	23.16139
1.133333	0.907063	0.946339	25.54040
1.200000	0.915540	1.007093	28.00603
1.266667	0.924018	1.068411	30.55659
1.333333	0.932495	1.130295	33.19056
1.400000	0.940972	1.192744	35.90658
1.466667	0.949450	1.255758	38.70345
1.533333	0.957927	1.319337	41.58007
1.600000	0.966405	1.383482	44.53546
1.666667	0.974882	1.448191	47.56875
1.733333	0.983360	1.513466	50.67914
1.800000	0.991837	1.579306	53.86593
1.866667	1.000314	1.645711	57.12848
1.933333	1.008792	1.712681	60.46620
2.000000	1.017269	1.780216	63.87860
2.066667	1.025747	1.848317	67.36521
2.133333	1.034224	1.916983	70.92562
2.200000	1.042702	1.986214	74.55946
2.266667	1.051179	2.056010	78.26640
2.333333	1.059656	2.126371	82.04617
2.400000	1.068134	2.197297	85.89851
2.466667	1.076611	2.268789	89.82320
2.533333	1.085089	2.340845	93.82004
2.600000	1.093566	2.413467	97.88888
2.666667	1.102044	2.486654	102.0296
2.733333	1.110521	2.560406	106.2420
2.800000	1.118999	2.634724	110.5261
2.866667	1.127476	2.709606	114.8817
2.933333	1.135954	2.785054	119.3089
3.000000	1.144431	2.861067	123.8075
3.066667	1.152909	2.937645	128.3776
3.133333	1.161386	3.014788	133.0191
3.200000	1.169864	3.092496	137.7321
3.266667	1.178341	3.170770	142.5165
3.333333	1.186819	3.249608	147.3724
3.400000	1.195296	3.329012	152.2999
3.466667	1.203774	3.408981	157.2990
3.533333	1.212251	3.489515	162.3697
3.600000	1.220729	3.570615	167.5122
3.666667	1.229206	3.652279	172.7264
3.733333	1.237684	3.734509	178.0126
3.800000	1.246161	3.817304	183.3708
3.866667	1.254639	3.900664	188.8010
3.933333	1.263116	3.984589	194.3035
4.000000	1.271594	4.069079	199.8783
4.066667	1.280071	4.154135	205.5256
4.133333	1.288549	4.239755	211.2454
4.200000	1.297026	4.325941	217.0380
4.266667	1.305504	4.412692	222.9034
4.333333	1.313981	4.500008	228.8418
4.400000	1.322459	4.587890	234.8533
4.466667	1.330937	4.676336	240.9382
4.533333	1.339414	4.765348	247.0965
4.600000	1.347892	4.854925	253.3285
4.666667	1.356369	4.945067	259.6342
4.733333	1.364847	5.035774	266.0139
4.800000	1.373324	5.127046	272.4677
4.866667	1.381802	5.218884	278.9958
4.933333	1.390279	5.311286	285.5984
5.000000	1.398757	5.404254	292.2756
5.066667	1.407235	5.497787	299.0277
5.133333	1.415712	5.591886	305.8548
5.200000	1.424190	5.686549	312.7571
5.266667	1.432667	5.781778	319.7348
5.333333	1.441145	5.877571	326.7881

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5.400000  1.449623  5.973930  333.9172
5.466667  1.458100  6.070854  341.1222
5.533333  1.466578  6.168344  348.4035
5.600000  1.475055  6.266398  355.7611
5.666667  1.483533  6.365018  363.1952
5.733333  1.492011  6.464202  370.7062
5.800000  1.500488  6.563952  378.2941
5.866667  1.508966  6.664268  385.9593
5.933333  1.517443  6.765148  393.7018
6.000000  1.525921  6.866593  401.5219
END FTABLE  3
FTABLE     33
 91    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  1.587810  0.000000  0.000000
0.088889  1.592515  0.141348  0.992869
0.177778  1.597220  0.283114  3.134765
0.266667  1.601925  0.425298  6.128109
0.355556  1.606630  0.567900  9.845379
0.444444  1.611335  0.710921  14.20567
0.533333  1.616041  0.854360  19.15048
0.622222  1.620746  0.998217  24.63444
0.711111  1.625451  1.142493  30.62079
0.800000  1.630156  1.287186  37.07876
0.888889  1.634861  1.432298  43.98209
0.977778  1.639566  1.577828  51.30794
1.066667  1.644271  1.723777  59.03621
1.155556  1.648976  1.870143  67.14901
1.244444  1.653682  2.016928  75.63029
1.333333  1.658387  2.164131  84.46551
1.422222  1.663092  2.311752  93.64148
1.511111  1.667797  2.459792  103.1461
1.600000  1.672502  2.608250  112.9683
1.688889  1.677207  2.757126  123.0978
1.777778  1.681912  2.906420  133.5253
1.866667  1.686618  3.056132  144.2417
1.955556  1.691323  3.206263  155.2391
2.044444  1.696028  3.356812  166.5098
2.133333  1.700733  3.507779  178.0465
2.222222  1.705438  3.659164  189.8427
2.311111  1.710143  3.810968  201.8920
2.400000  1.714849  3.963190  214.1886
2.488889  1.719554  4.115830  226.7268
2.577778  1.724259  4.268888  239.5014
2.666667  1.728964  4.422365  252.5074
2.755556  1.733669  4.576260  265.7402
2.844444  1.738375  4.730573  279.1953
2.933333  1.743080  4.885304  292.8685
3.022222  1.747785  5.040454  306.7557
3.111111  1.752490  5.196021  320.8532
3.200000  1.757195  5.352007  335.1574
3.288889  1.761901  5.508412  349.6647
3.377778  1.766606  5.665234  364.3721
3.466667  1.771311  5.822475  379.2762
3.555556  1.776016  5.980134  394.3742
3.644444  1.780721  6.138211  409.6632
3.733333  1.785427  6.296707  425.1404
3.822222  1.790132  6.455620  440.8034
3.911111  1.794837  6.614952  456.6495
4.000000  1.799542  6.774702  472.6765
4.088889  1.804247  6.934871  488.8821
4.177778  1.808953  7.095458  505.2640
4.266667  1.813658  7.256462  521.8202
4.355556  1.818363  7.417886  538.5487
4.444444  1.823068  7.579727  555.4476
4.533333  1.827774  7.741987  572.5150
4.622222  1.832479  7.904665  589.7492
4.711111  1.837184  8.067761  607.1484
4.800000  1.841889  8.231275  624.7111
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4.888889  1.846595  8.395208  642.4357
4.977778  1.851300  8.559559  660.3206
5.066667  1.856005  8.724328  678.3645
5.155556  1.860710  8.889515  696.5659
5.244444  1.865416  9.055121  714.9234
5.333333  1.870121  9.221145  733.4359
5.422222  1.874826  9.387587  752.1020
5.511111  1.879532  9.554447  770.9205
5.600000  1.884237  9.721726  789.8904
5.688889  1.888942  9.889422  809.0104
5.777778  1.893647  10.05754  828.2796
5.866667  1.898353  10.22607  847.6968
5.955556  1.903058  10.39502  867.2612
6.044444  1.907763  10.56439  886.9716
6.133333  1.912469  10.73418  906.8273
6.222222  1.917174  10.90439  926.8273
6.311111  1.921879  11.07501  946.9708
6.400000  1.926584  11.24605  967.2568
6.488889  1.931290  11.41752  987.6847
6.577778  1.935995  11.58939  1008.254
6.666667  1.940700  11.76169  1028.963
6.755556  1.945406  11.93441  1049.812
6.844444  1.950111  12.10754  1070.799
6.933333  1.954816  12.28109  1091.925
7.022222  1.959522  12.45506  1113.189
7.111111  1.964227  12.62945  1134.589
7.200000  1.968932  12.80426  1156.126
7.288889  1.973638  12.97949  1177.798
7.377778  1.978343  13.15513  1199.606
7.466667  1.983048  13.33119  1221.548
7.555556  1.987754  13.50767  1243.624
7.644444  1.992459  13.68457  1265.834
7.733333  1.997164  13.86189  1288.177
7.822222  2.001870  14.03962  1310.653
7.911111  2.006575  14.21777  1333.260
8.000000  2.011280  14.39635  1356.000
END FTABLE 33
FTABLE     12
 91    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.179408  0.000000  0.000000
0.088889  0.182598  0.016089  0.550192
0.177778  0.185788  0.032462  1.728692
0.266667  0.188978  0.049118  3.365324
0.355556  0.192168  0.066058  5.387575
0.444444  0.195357  0.083281  7.750552
0.533333  0.198547  0.100788  10.42294
0.622222  0.201738  0.118578  13.38147
0.711111  0.204928  0.136652  16.60818
0.800000  0.208118  0.155010  20.08885
0.888889  0.211308  0.173651  23.81198
0.977778  0.214498  0.192576  27.76818
1.066667  0.217688  0.211784  31.94969
1.155556  0.220878  0.231276  36.35003
1.244444  0.224068  0.251051  40.96380
1.333333  0.227258  0.271110  45.78644
1.422222  0.230448  0.291453  50.81413
1.511111  0.233639  0.312079  56.04363
1.600000  0.236829  0.332988  61.47222
1.688889  0.240019  0.354182  67.09761
1.777778  0.243209  0.375659  72.91789
1.866667  0.246399  0.397419  78.93144
1.955556  0.249590  0.419463  85.13696
2.044444  0.252780  0.441790  91.53337
2.133333  0.255970  0.464402  98.11979
2.222222  0.259161  0.487296  104.8955
2.311111  0.262351  0.510475  111.8601
2.400000  0.265541  0.533936  119.0131
2.488889  0.268732  0.557682  126.3543
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DRAFT

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2.577778  0.271922  0.581711  133.8836
2.666667  0.275112  0.606024  141.6009
2.755556  0.278303  0.630620  149.5063
2.844444  0.281493  0.655500  157.6000
2.933333  0.284684  0.680663  165.8821
3.022222  0.287874  0.706110  174.3529
3.111111  0.291064  0.731841  183.0129
3.200000  0.294255  0.757855  191.8623
3.288889  0.297445  0.784153  200.9017
3.377778  0.300636  0.810734  210.1315
3.466667  0.303826  0.837599  219.5523
3.555556  0.307017  0.864748  229.1646
3.644444  0.310208  0.892180  238.9691
3.733333  0.313398  0.919896  248.9663
3.822222  0.316589  0.947895  259.1569
3.911111  0.319779  0.976178  269.5416
4.000000  0.322970  1.004745  280.1212
4.088889  0.326161  1.033595  290.8963
4.177778  0.329351  1.062729  301.8677
4.266667  0.332542  1.092146  313.0362
4.355556  0.335733  1.121847  324.4025
4.444444  0.338923  1.151832  335.9674
4.533333  0.342114  1.182100  347.7318
4.622222  0.345305  1.212652  359.6965
4.711111  0.348495  1.243488  371.8623
4.800000  0.351686  1.274607  384.2301
4.888889  0.354877  1.306010  396.8007
4.977778  0.358068  1.337696  409.5750
5.066667  0.361259  1.369666  422.5538
5.155556  0.364449  1.401920  435.7380
5.244444  0.367640  1.434457  449.1286
5.333333  0.370831  1.467278  462.7264
5.422222  0.374022  1.500383  476.5323
5.511111  0.377213  1.533771  490.5473
5.600000  0.380404  1.567443  504.7722
5.688889  0.383595  1.601398  519.2079
5.777778  0.386786  1.635637  533.8554
5.866667  0.389977  1.670160  548.7155
5.955556  0.393168  1.704967  563.7893
6.044444  0.396359  1.740057  579.0776
6.133333  0.399550  1.775430  594.5814
6.222222  0.402741  1.811088  610.3016
6.311111  0.405932  1.847029  626.2392
6.400000  0.409123  1.883253  642.3950
6.488889  0.412314  1.919762  658.7700
6.577778  0.415505  1.956554  675.3652
6.666667  0.418696  1.993629  692.1815
6.755556  0.421887  2.030988  709.2199
6.844444  0.425078  2.068631  726.4812
6.933333  0.428269  2.106558  743.9665
7.022222  0.431460  2.144768  761.6767
7.111111  0.434652  2.183262  779.6127
7.200000  0.437843  2.222039  797.7755
7.288889  0.441034  2.261101  816.1660
7.377778  0.444225  2.300445  834.7852
7.466667  0.447416  2.340074  853.6340
7.555556  0.450608  2.379986  872.7134
7.644444  0.453799  2.420182  892.0243
7.733333  0.456990  2.460661  911.5677
7.822222  0.460182  2.501425  931.3445
7.911111  0.463373  2.542472  951.3557
8.000000  0.466564  2.583802  971.6023
END FTABLE 12
FTABLE     34
 91    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.782369  0.000000  0.000000
0.111111  0.784543  0.087051  2.380343
0.222222  0.786717  0.174343  7.517951
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0.333333	0.788892	0.261877	14.70155
0.444444	0.791066	0.349652	23.62688
0.555556	0.793240	0.437669	34.10112
0.666667	0.795414	0.525928	45.98494
0.777778	0.797588	0.614428	59.17028
0.888889	0.799762	0.703170	73.56955
1.000000	0.801937	0.792153	89.10950
1.111111	0.804111	0.881378	105.7275
1.222222	0.806285	0.970844	123.3692
1.333333	0.808459	1.060552	141.9865
1.444444	0.810633	1.150502	161.5367
1.555556	0.812808	1.240693	181.9815
1.666667	0.814982	1.331126	203.2861
1.777778	0.817156	1.421800	225.4188
1.888889	0.819330	1.512716	248.3508
2.000000	0.821505	1.603873	272.0554
2.111111	0.823679	1.695273	296.5079
2.222222	0.825853	1.786913	321.6857
2.333333	0.828027	1.878795	347.5676
2.444444	0.830202	1.970919	374.1338
2.555556	0.832376	2.063285	401.3659
2.666667	0.834550	2.155892	429.2466
2.777778	0.836724	2.248740	457.7597
2.888889	0.838899	2.341830	486.8901
3.000000	0.841073	2.435162	516.6233
3.111111	0.843247	2.528735	546.9459
3.222222	0.845421	2.622550	577.8449
3.333333	0.847596	2.716607	609.3085
3.444444	0.849770	2.810905	641.3250
3.555556	0.851944	2.905445	673.8837
3.666667	0.854119	3.000226	706.9743
3.777778	0.856293	3.095249	740.5868
3.888889	0.858467	3.190513	774.7121
4.000000	0.860642	3.286019	809.3413
4.111111	0.862816	3.381767	844.4658
4.222222	0.864990	3.477756	880.0777
4.333333	0.867165	3.573987	916.1692
4.444444	0.869339	3.670459	952.7331
4.555556	0.871513	3.767174	989.7621
4.666667	0.873688	3.864129	1027.250
4.777778	0.875862	3.961326	1065.190
4.888889	0.878036	4.058765	1103.575
5.000000	0.880211	4.156446	1142.401
5.111111	0.882385	4.254368	1181.661
5.222222	0.884559	4.352531	1221.351
5.333333	0.886734	4.450936	1261.464
5.444444	0.888908	4.549583	1301.996
5.555556	0.891083	4.648471	1342.942
5.666667	0.893257	4.747601	1384.297
5.777778	0.895431	4.846973	1426.057
5.888889	0.897606	4.946586	1468.219
6.000000	0.899780	5.046441	1510.776
6.111111	0.901955	5.146537	1553.727
6.222222	0.904129	5.246875	1597.066
6.333333	0.906304	5.347455	1640.791
6.444444	0.908478	5.448276	1684.897
6.555556	0.910652	5.549339	1729.382
6.666667	0.912827	5.650643	1774.242
6.777778	0.915001	5.752189	1819.473
6.888889	0.917176	5.853977	1865.074
7.000000	0.919350	5.956006	1911.040
7.111111	0.921525	6.058277	1957.370
7.222222	0.923699	6.160789	2004.060
7.333333	0.925874	6.263544	2051.108
7.444444	0.928048	6.366539	2098.511
7.555556	0.930223	6.469776	2146.267
7.666667	0.932397	6.573255	2194.373
7.777778	0.934572	6.676976	2242.827
7.888889	0.936746	6.780938	2291.627
8.000000	0.938921	6.885142	2340.771

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8.111111  0.941095  6.989587  2390.257
8.222222  0.943270  7.094274  2440.082
8.333333  0.945444  7.199202  2490.245
8.444444  0.947619  7.304372  2540.744
8.555556  0.949793  7.409784  2591.577
8.666667  0.951968  7.515438  2642.742
8.777778  0.954142  7.621333  2694.238
8.888889  0.956317  7.727469  2746.063
9.000000  0.958491  7.833847  2798.215
9.111111  0.960666  7.940467  2850.693
9.222222  0.962840  8.047329  2903.496
9.333333  0.965015  8.154432  2956.621
9.444444  0.967190  8.261777  3010.068
9.555556  0.969364  8.369363  3063.835
9.666667  0.971539  8.477191  3117.921
9.777778  0.973713  8.585260  3172.325
9.888889  0.975888  8.693571  3227.045
10.00000  0.978062  8.802124  3282.080
END FTABLE 34
FTABLE     30
 91    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.174242  0.000000  0.000000
0.088889  0.175792  0.015557  1.420554
0.177778  0.177342  0.031252  4.485199
0.266667  0.178892  0.047085  8.769328
0.355556  0.180442  0.063055  14.09239
0.444444  0.181992  0.079163  20.34103
0.533333  0.183542  0.095409  27.43431
0.622222  0.185092  0.111793  35.31037
0.711111  0.186642  0.128314  43.91981
0.800000  0.188192  0.144974  53.22203
0.888889  0.189742  0.161771  63.18294
0.977778  0.191292  0.178706  73.77343
1.066667  0.192843  0.195778  84.96837
1.155556  0.194393  0.212989  96.74583
1.244444  0.195943  0.230337  109.0865
1.333333  0.197493  0.247823  121.9732
1.422222  0.199043  0.265447  135.3908
1.511111  0.200593  0.283209  149.3257
1.600000  0.202144  0.301108  163.7654
1.688889  0.203694  0.319145  178.6991
1.777778  0.205244  0.337320  194.1166
1.866667  0.206795  0.355633  210.0089
1.955556  0.208345  0.374084  226.3678
2.044444  0.209895  0.392672  243.1856
2.133333  0.211446  0.411399  260.4556
2.222222  0.212996  0.430263  278.1715
2.311111  0.214546  0.449264  296.3275
2.400000  0.216097  0.468404  314.9183
2.488889  0.217647  0.487682  333.9392
2.577778  0.219198  0.507097  353.3856
2.666667  0.220748  0.526650  373.2536
2.755556  0.222298  0.546341  393.5394
2.844444  0.223849  0.566170  414.2396
2.933333  0.225400  0.586136  435.3510
3.022222  0.226950  0.606241  456.8708
3.111111  0.228501  0.626483  478.7963
3.200000  0.230051  0.646863  501.1250
3.288889  0.231602  0.667381  523.8547
3.377778  0.233152  0.688037  546.9835
3.466667  0.234703  0.708830  570.5094
3.555556  0.236254  0.729762  594.4307
3.644444  0.237804  0.750831  618.7459
3.733333  0.239355  0.772038  643.4536
3.822222  0.240906  0.793383  668.5524
3.911111  0.242457  0.814866  694.0413
4.000000  0.244007  0.836486  719.9192
4.088889  0.245558  0.858245  746.1852
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4.177778  0.247109  0.880141  772.8383
4.266667  0.248660  0.902175  799.8780
4.355556  0.250210  0.924347  827.3035
4.444444  0.251761  0.946657  855.1143
4.533333  0.253312  0.969105  883.3099
4.622222  0.254863  0.991691  911.8899
4.711111  0.256414  1.014414  940.8539
4.800000  0.257965  1.037275  970.2016
4.888889  0.259516  1.060274  999.9329
4.977778  0.261067  1.083411  1030.048
5.066667  0.262618  1.106686  1060.545
5.155556  0.264169  1.130099  1091.427
5.244444  0.265720  1.153650  1122.691
5.333333  0.267271  1.177338  1154.338
5.422222  0.268822  1.201164  1186.369
5.511111  0.270373  1.225129  1218.784
5.600000  0.271924  1.249231  1251.582
5.688889  0.273475  1.273471  1284.764
5.777778  0.275026  1.297849  1318.330
5.866667  0.276577  1.322364  1352.280
5.955556  0.278129  1.347018  1386.615
6.044444  0.279680  1.371809  1421.335
6.133333  0.281231  1.396739  1456.440
6.222222  0.282782  1.421806  1491.931
6.311111  0.284334  1.447011  1527.809
6.400000  0.285885  1.472354  1564.073
6.488889  0.287436  1.497835  1600.724
6.577778  0.288987  1.523454  1637.762
6.666667  0.290539  1.549211  1675.189
6.755556  0.292090  1.575105  1713.004
6.844444  0.293641  1.601138  1751.209
6.933333  0.295193  1.627308  1789.803
7.022222  0.296744  1.653616  1828.787
7.111111  0.298296  1.680063  1868.163
7.200000  0.299847  1.706647  1907.930
7.288889  0.301399  1.733369  1948.089
7.377778  0.302950  1.760229  1988.641
7.466667  0.304502  1.787227  2029.587
7.555556  0.306053  1.814362  2070.927
7.644444  0.307605  1.841636  2112.662
7.733333  0.309156  1.869048  2154.792
7.822222  0.310708  1.896597  2197.319
7.911111  0.312259  1.924285  2240.242
8.000000  0.313811  1.952110  2283.564
END FTABLE 30
FTABLE     28
 91    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.036478  0.000000  0.000000
0.088889  0.036942  0.003263  0.850300
0.177778  0.037406  0.006568  2.678893
0.266667  0.037870  0.009913  5.227429
0.355556  0.038334  0.013300  8.385652
0.444444  0.038799  0.016728  12.08458
0.533333  0.039263  0.020198  16.27534
0.622222  0.039727  0.023708  20.92094
0.711111  0.040191  0.027260  25.99221
0.800000  0.040655  0.030853  31.46552
0.888889  0.041119  0.034488  37.32130
0.977778  0.041583  0.038163  43.54316
1.066667  0.042047  0.041880  50.11713
1.155556  0.042512  0.045638  57.03128
1.244444  0.042976  0.049438  64.27528
1.333333  0.043440  0.053279  71.84018
1.422222  0.043904  0.057161  79.71813
1.511111  0.044369  0.061084  87.90229
1.600000  0.044833  0.065048  96.38662
1.688889  0.045297  0.069054  105.1658
1.777778  0.045762  0.073101  114.2352
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1.866667	0.046226	0.077190	123.5906
1.955556	0.046690	0.081319	133.2283
2.044444	0.047155	0.085490	143.1452
2.133333	0.047619	0.089702	153.3382
2.222222	0.048084	0.093956	163.8050
2.311111	0.048548	0.098250	174.5431
2.400000	0.049013	0.102586	185.5507
2.488889	0.049477	0.106964	196.8260
2.577778	0.049942	0.111382	208.3675
2.666667	0.050406	0.115842	220.1738
2.755556	0.050871	0.120344	232.2438
2.844444	0.051335	0.124886	244.5765
2.933333	0.051800	0.129470	257.1710
3.022222	0.052265	0.134095	270.0267
3.111111	0.052729	0.138761	283.1428
3.200000	0.053194	0.143469	296.5189
3.288889	0.053659	0.148218	310.1547
3.377778	0.054123	0.153008	324.0499
3.466667	0.054588	0.157840	338.2042
3.555556	0.055053	0.162713	352.6175
3.644444	0.055517	0.167627	367.2897
3.733333	0.055982	0.172583	382.2209
3.822222	0.056447	0.177579	397.4112
3.911111	0.056912	0.182618	412.8607
4.000000	0.057377	0.187697	428.5695
4.088889	0.057841	0.192818	444.5379
4.177778	0.058306	0.197980	460.7661
4.266667	0.058771	0.203183	477.2546
4.355556	0.059236	0.208428	494.0037
4.444444	0.059701	0.213714	511.0137
4.533333	0.060166	0.219042	528.2851
4.622222	0.060631	0.224410	545.8183
4.711111	0.061096	0.229821	563.6139
4.800000	0.061561	0.235272	581.6724
4.888889	0.062026	0.240765	599.9943
4.977778	0.062491	0.246299	618.5803
5.066667	0.062956	0.251874	637.4308
5.155556	0.063421	0.257491	656.5465
5.244444	0.063886	0.263149	675.9281
5.333333	0.064351	0.268848	695.5762
5.422222	0.064816	0.274589	715.4915
5.511111	0.065282	0.280371	735.6747
5.600000	0.065747	0.286195	756.1265
5.688889	0.066212	0.292060	776.8475
5.777778	0.066677	0.297966	797.8386
5.866667	0.067142	0.303913	819.1005
5.955556	0.067608	0.309902	840.6340
6.044444	0.068073	0.315932	862.4397
6.133333	0.068538	0.322004	884.5185
6.222222	0.069003	0.328117	906.8713
6.311111	0.069469	0.334271	929.4987
6.400000	0.069934	0.340467	952.4016
6.488889	0.070399	0.346704	975.5808
6.577778	0.070865	0.352982	999.0372
6.666667	0.071330	0.359302	1022.772
6.755556	0.071796	0.365663	1046.785
6.844444	0.072261	0.372066	1071.077
6.933333	0.072727	0.378510	1095.651
7.022222	0.073192	0.384995	1120.505
7.111111	0.073657	0.391522	1145.642
7.200000	0.074123	0.398090	1171.062
7.288889	0.074589	0.404699	1196.766
7.377778	0.075054	0.411350	1222.755
7.466667	0.075520	0.418042	1249.030
7.555556	0.075985	0.424776	1275.591
7.644444	0.076451	0.431551	1302.440
7.733333	0.076916	0.438367	1329.577
7.822222	0.077382	0.445225	1357.003
7.911111	0.077848	0.452124	1384.720
8.000000	0.078313	0.459064	1412.727

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END FTABLE 28
FTABLE 13
91 4

Depth (ft)	Area (acres)	Volume (acre-ft)	Outflow1 (cfs)	Velocity (ft/sec)	Travel Time*** (Minutes)***
0.000000	0.233494	0.000000	0.000000		
0.088889	0.236459	0.020887	0.614766		
0.177778	0.239425	0.042037	1.936836		
0.266667	0.242390	0.063451	3.779425		
0.355556	0.245356	0.085129	6.062817		
0.444444	0.248321	0.107070	8.737138		
0.533333	0.251287	0.129275	11.76705		
0.622222	0.254252	0.151743	15.12581		
0.711111	0.257218	0.174475	18.79234		
0.800000	0.260183	0.197471	22.74953		
0.888889	0.263149	0.220730	26.98326		
0.977778	0.266114	0.244253	31.48165		
1.066667	0.269080	0.268039	36.23463		
1.155556	0.272045	0.292089	41.23355		
1.244444	0.275011	0.316403	46.47095		
1.333333	0.277976	0.340980	51.94036		
1.422222	0.280942	0.365821	57.63611		
1.511111	0.283907	0.390925	63.55325		
1.600000	0.286873	0.416293	69.68741		
1.688889	0.289838	0.441925	76.03476		
1.777778	0.292804	0.467820	82.59190		
1.866667	0.295770	0.493979	89.35584		
1.955556	0.298735	0.520401	96.32392		
2.044444	0.301701	0.547087	103.4938		
2.133333	0.304666	0.574037	110.8633		
2.222222	0.307632	0.601250	118.4308		
2.311111	0.310598	0.628727	126.1945		
2.400000	0.313563	0.656467	134.1530		
2.488889	0.316529	0.684472	142.3050		
2.577778	0.319495	0.712739	150.6495		
2.666667	0.322460	0.741271	159.1854		
2.755556	0.325426	0.770066	167.9120		
2.844444	0.328392	0.799124	176.8285		
2.933333	0.331358	0.828446	185.9343		
3.022222	0.334323	0.858032	195.2289		
3.111111	0.337289	0.887882	204.7119		
3.200000	0.340255	0.917995	214.3828		
3.288889	0.343221	0.948371	224.2415		
3.377778	0.346186	0.979012	234.2877		
3.466667	0.349152	1.009916	244.5212		
3.555556	0.352118	1.041083	254.9420		
3.644444	0.355084	1.072514	265.5500		
3.733333	0.358050	1.104209	276.3453		
3.822222	0.361015	1.136168	287.3278		
3.911111	0.363981	1.168390	298.4978		
4.000000	0.366947	1.200875	309.8552		
4.088889	0.369913	1.233625	321.4003		
4.177778	0.372879	1.266638	333.1334		
4.266667	0.375845	1.299914	345.0545		
4.355556	0.378811	1.333455	357.1641		
4.444444	0.381776	1.367258	369.4623		
4.533333	0.384742	1.401326	381.9495		
4.622222	0.387708	1.435657	394.6260		
4.711111	0.390674	1.470252	407.4922		
4.800000	0.393640	1.505110	420.5485		
4.888889	0.396606	1.540232	433.7952		
4.977778	0.399572	1.575618	447.2328		
5.066667	0.402538	1.611267	460.8617		
5.155556	0.405504	1.647180	474.6824		
5.244444	0.408470	1.683357	488.6952		
5.333333	0.411436	1.719797	502.9008		
5.422222	0.414402	1.756501	517.2995		
5.511111	0.417368	1.793469	531.8919		
5.600000	0.420334	1.830700	546.6785		
5.688889	0.423300	1.868195	561.6598		

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5.777778  0.426266  1.905953  576.8364
5.866667  0.429232  1.943975  592.2087
5.955556  0.432198  1.982261  607.7773
6.044444  0.435164  2.020811  623.5429
6.133333  0.438130  2.059624  639.5059
6.222222  0.441096  2.098700  655.6668
6.311111  0.444063  2.138041  672.0264
6.400000  0.447029  2.177645  688.5852
6.488889  0.449995  2.217513  705.3438
6.577778  0.452961  2.257644  722.3027
6.666667  0.455927  2.298039  739.4626
6.755556  0.458893  2.338698  756.8241
6.844444  0.461859  2.379620  774.3877
6.933333  0.464826  2.420806  792.1542
7.022222  0.467792  2.462256  810.1241
7.111111  0.470758  2.503969  828.2981
7.200000  0.473724  2.545946  846.6767
7.288889  0.476690  2.588187  865.2606
7.377778  0.479657  2.630691  884.0505
7.466667  0.482623  2.673459  903.0470
7.555556  0.485589  2.716490  922.2507
7.644444  0.488555  2.759786  941.6623
7.733333  0.491522  2.803345  961.2823
7.822222  0.494488  2.847167  981.1116
7.911111  0.497454  2.891254  1001.151
8.000000  0.500420  2.935604  1021.400
END FTABLE 13
FTABLE     21
 91    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.310468  0.000000  0.000000
0.088889  0.315068  0.027802  0.533825
0.177778  0.319668  0.056012  1.679888
0.266667  0.324268  0.084632  3.274701
0.355556  0.328868  0.113660  5.248482
0.444444  0.333468  0.143097  7.557734
0.533333  0.338068  0.172943  10.17182
0.622222  0.342668  0.203198  13.06771
0.711111  0.347268  0.233862  16.22741
0.800000  0.351868  0.264934  19.63646
0.888889  0.356468  0.296416  23.28301
0.977778  0.361068  0.328306  27.15722
1.066667  0.365668  0.360606  31.25082
1.155556  0.370268  0.393314  35.55680
1.244444  0.374868  0.426431  40.06917
1.333333  0.379468  0.459957  44.78282
1.422222  0.384068  0.493892  49.69331
1.511111  0.388668  0.528236  54.79683
1.600000  0.393268  0.562988  60.09008
1.688889  0.397868  0.598150  65.57019
1.777778  0.402468  0.633721  71.23468
1.866667  0.407068  0.669700  77.08139
1.955556  0.411668  0.706088  83.10844
2.044444  0.416268  0.742885  89.31423
2.133333  0.420868  0.780091  95.69737
2.222222  0.425468  0.817706  102.2567
2.311111  0.430069  0.855730  108.9911
2.400000  0.434669  0.894163  115.8998
2.488889  0.439269  0.933005  122.9820
2.577778  0.443869  0.972255  130.2372
2.666667  0.448469  1.011915  137.6648
2.755556  0.453069  1.051983  145.2645
2.844444  0.457670  1.092460  153.0360
2.933333  0.462270  1.133347  160.9791
3.022222  0.466870  1.174642  169.0937
3.111111  0.471470  1.216346  177.3796
3.200000  0.476071  1.258459  185.8369
3.288889  0.480671  1.300981  194.4656
3.377778  0.485271  1.343911  203.2659
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3.466667  0.489871  1.387251  212.2378
3.555556  0.494472  1.431000  221.3817
3.644444  0.499072  1.475157  230.6976
3.733333  0.503672  1.519724  240.1860
3.822222  0.508273  1.564699  249.8470
3.911111  0.512873  1.610083  259.6811
4.000000  0.517473  1.655876  269.6886
4.088889  0.522074  1.702078  279.8698
4.177778  0.526674  1.748689  290.2253
4.266667  0.531274  1.795709  300.7554
4.355556  0.535875  1.843138  311.4607
4.444444  0.540475  1.890976  322.3415
4.533333  0.545076  1.939223  333.3984
4.622222  0.549676  1.987878  344.6319
4.711111  0.554276  2.036943  356.0425
4.800000  0.558877  2.086416  367.6308
4.888889  0.563477  2.136299  379.3973
4.977778  0.568078  2.186590  391.3426
5.066667  0.572678  2.237290  403.4672
5.155556  0.577279  2.288399  415.7718
5.244444  0.581879  2.339918  428.2570
5.333333  0.586480  2.391845  440.9233
5.422222  0.591080  2.444181  453.7714
5.511111  0.595681  2.496925  466.8020
5.600000  0.600281  2.550079  480.0155
5.688889  0.604882  2.603642  493.4128
5.777778  0.609482  2.657614  506.9943
5.866667  0.614083  2.711994  520.7608
5.955556  0.618683  2.766784  534.7130
6.044444  0.623284  2.821983  548.8515
6.133333  0.627884  2.877590  563.1769
6.222222  0.632485  2.933607  577.6900
6.311111  0.637086  2.990032  592.3914
6.400000  0.641686  3.046866  607.2817
6.488889  0.646287  3.104109  622.3618
6.577778  0.650888  3.161762  637.6322
6.666667  0.655488  3.219823  653.0936
6.755556  0.660089  3.278293  668.7468
6.844444  0.664689  3.337172  684.5925
6.933333  0.669290  3.396460  700.6313
7.022222  0.673891  3.456157  716.8639
7.111111  0.678492  3.516263  733.2911
7.200000  0.683092  3.576778  749.9135
7.288889  0.687693  3.637701  766.7319
7.377778  0.692294  3.699034  783.7469
7.466667  0.696894  3.760776  800.9593
7.555556  0.701495  3.822926  818.3698
7.644444  0.706096  3.885486  835.9791
7.733333  0.710697  3.948455  853.7878
7.822222  0.715298  4.011832  871.7969
7.911111  0.719898  4.075619  890.0068
8.000000  0.724499  4.139814  908.4184
END FTABLE 21
FTABLE     35
 91    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.861341  0.000000  0.000000
0.111111  0.863734  0.095837  1.506857
0.222222  0.866127  0.191941  4.759178
0.333333  0.868520  0.288310  9.306695
0.444444  0.870913  0.384945  14.95681
0.555556  0.873306  0.481846  21.58744
0.666667  0.875699  0.579013  29.11039
0.777778  0.878092  0.676446  37.45727
0.888889  0.880486  0.774145  46.57261
1.000000  0.882879  0.872110  56.41005
1.111111  0.885272  0.970340  66.92996
1.222222  0.887665  1.068837  78.09787
1.333333  0.890058  1.167599  89.88340
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1.444444	0.892451	1.266627	102.2595
1.555556	0.894844	1.365922	115.2019
1.666667	0.897238	1.465482	128.6886
1.777778	0.899631	1.565308	142.6996
1.888889	0.902024	1.665400	157.2165
2.000000	0.904417	1.765758	172.2225
2.111111	0.906810	1.866381	187.7020
2.222222	0.909203	1.967271	203.6406
2.333333	0.911596	2.068426	220.0249
2.444444	0.913990	2.169848	236.8424
2.555556	0.916383	2.271535	254.0814
2.666667	0.918776	2.373488	271.7311
2.777778	0.921169	2.475708	289.7811
2.888889	0.923562	2.578193	308.2219
3.000000	0.925955	2.680944	327.0442
3.111111	0.928349	2.783961	346.2397
3.222222	0.930742	2.887243	365.8001
3.333333	0.933135	2.990792	385.7178
3.444444	0.935528	3.094607	405.9857
3.555556	0.937921	3.198687	426.5967
3.666667	0.940315	3.303034	447.5444
3.777778	0.942708	3.407646	468.8225
3.888889	0.945101	3.512524	490.4253
4.000000	0.947494	3.617668	512.3470
4.111111	0.949887	3.723079	534.5823
4.222222	0.952281	3.828755	557.1261
4.333333	0.954674	3.934696	579.9736
4.444444	0.957067	4.040904	603.1200
4.555556	0.959460	4.147378	626.5610
4.666667	0.961853	4.254118	650.2922
4.777778	0.964247	4.361123	674.3097
4.888889	0.966640	4.468395	698.6095
5.000000	0.969033	4.575932	723.1879
5.111111	0.971426	4.683735	748.0413
5.222222	0.973820	4.791805	773.1663
5.333333	0.976213	4.900140	798.5596
5.444444	0.978606	5.008741	824.2180
5.555556	0.980999	5.117608	850.1385
5.666667	0.983392	5.226741	876.3182
5.777778	0.985786	5.336139	902.7542
5.888889	0.988179	5.445804	929.4440
6.000000	0.990572	5.555735	956.3848
6.111111	0.992965	5.665931	983.5742
6.222222	0.995359	5.776394	1011.010
6.333333	0.997752	5.887122	1038.689
6.444444	1.000145	5.998116	1066.611
6.555556	1.002538	6.109377	1094.771
6.666667	1.004932	6.220903	1123.169
6.777778	1.007325	6.332695	1151.803
6.888889	1.009718	6.444753	1180.670
7.000000	1.012112	6.557077	1209.769
7.111111	1.014505	6.669666	1239.097
7.222222	1.016898	6.782522	1268.654
7.333333	1.019291	6.895644	1298.437
7.444444	1.021685	7.009031	1328.445
7.555556	1.024078	7.122685	1358.677
7.666667	1.026471	7.236604	1389.130
7.777778	1.028865	7.350789	1419.804
7.888889	1.031258	7.465241	1450.696
8.000000	1.033651	7.579958	1481.806
8.111111	1.036044	7.694941	1513.133
8.222222	1.038438	7.810190	1544.674
8.333333	1.040831	7.925705	1576.430
8.444444	1.043224	8.041486	1608.398
8.555556	1.045618	8.157532	1640.577
8.666667	1.048011	8.273845	1672.967
8.777778	1.050404	8.390424	1705.566
8.888889	1.052798	8.507268	1738.373
9.000000	1.055191	8.624379	1771.388
9.111111	1.057584	8.741755	1804.608

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9.222222  1.059978  8.859398  1838.035
9.333333  1.062371  8.977306  1871.665
9.444444  1.064764  9.095480  1905.499
9.555556  1.067158  9.213920  1939.536
9.666667  1.069551  9.332626  1973.775
9.777778  1.071944  9.451598  2008.215
9.888889  1.074338  9.570836  2042.855
10.00000  1.076731  9.690340  2077.694
END FTABLE 35
FTABLE     36
 91    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.206061  0.000000  0.000000
0.166667  0.206842  0.034409  3.045750
0.333333  0.207624  0.068947  9.601952
0.500000  0.208405  0.103616  18.74379
0.666667  0.209186  0.138416  30.07204
0.833333  0.209968  0.173345  43.33252
1.000000  0.210749  0.208405  58.34118
1.166667  0.211531  0.243595  74.95528
1.333333  0.212312  0.278915  93.05922
1.500000  0.213094  0.314366  112.5566
1.666667  0.213876  0.349947  133.3651
1.833333  0.214657  0.385658  155.4137
2.000000  0.215439  0.421499  178.6400
2.166667  0.216220  0.457471  202.9884
2.333333  0.217002  0.493572  228.4098
2.500000  0.217783  0.529805  254.8594
2.666667  0.218565  0.566167  282.2971
2.833333  0.219346  0.602659  310.6862
3.000000  0.220128  0.639282  339.9932
3.166667  0.220910  0.676035  370.1874
3.333333  0.221691  0.712919  401.2405
3.500000  0.222473  0.749933  433.1264
3.666667  0.223254  0.787076  465.8209
3.833333  0.224036  0.824351  499.3017
4.000000  0.224818  0.861755  533.5478
4.166667  0.225599  0.899290  568.5399
4.333333  0.226381  0.936955  604.2596
4.500000  0.227163  0.974750  640.6902
4.666667  0.227944  1.012676  677.8157
4.833333  0.228726  1.050732  715.6211
5.000000  0.229508  1.088918  754.0925
5.166667  0.230289  1.127234  793.2166
5.333333  0.231071  1.165681  832.9812
5.500000  0.231853  1.204258  873.3743
5.666667  0.232634  1.242965  914.3851
5.833333  0.233416  1.281802  956.0030
6.000000  0.234198  1.320770  998.2183
6.166667  0.234979  1.359868  1041.022
6.333333  0.235761  1.399097  1084.404
6.500000  0.236543  1.438455  1128.357
6.666667  0.237325  1.477944  1172.873
6.833333  0.238106  1.517564  1217.945
7.000000  0.238888  1.557313  1263.564
7.166667  0.239670  1.597193  1309.725
7.333333  0.240452  1.637203  1356.421
7.500000  0.241233  1.677343  1403.646
7.666667  0.242015  1.717614  1451.393
7.833333  0.242797  1.758015  1499.658
8.000000  0.243579  1.798546  1548.435
8.166667  0.244360  1.839208  1597.718
8.333333  0.245142  1.880000  1647.504
8.500000  0.245924  1.920922  1697.787
8.666667  0.246706  1.961975  1748.564
8.833333  0.247488  2.003157  1799.829
9.000000  0.248270  2.044471  1851.580
9.166667  0.249051  2.085914  1903.811
9.333333  0.249833  2.127488  1956.520
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9.500000  0.250615  2.169192  2009.703
9.666667  0.251397  2.211026  2063.357
9.833333  0.252179  2.252991  2117.478
10.00000  0.252961  2.295086  2172.063
10.16667  0.253743  2.337311  2227.110
10.33333  0.254525  2.379667  2282.616
10.50000  0.255306  2.422152  2338.578
10.66667  0.256088  2.464769  2394.993
10.83333  0.256870  2.507515  2451.860
11.00000  0.257652  2.550392  2509.175
11.16667  0.258434  2.593399  2566.936
11.33333  0.259216  2.636537  2625.142
11.50000  0.259998  2.679805  2683.790
11.66667  0.260780  2.723203  2742.879
11.83333  0.261562  2.766731  2802.406
12.00000  0.262344  2.810390  2862.370
12.16667  0.263126  2.854179  2922.768
12.33333  0.263908  2.898099  2983.600
12.50000  0.264690  2.942148  3044.864
12.66667  0.265472  2.986329  3106.557
12.83333  0.266254  3.030639  3168.680
13.00000  0.267036  3.075080  3231.230
13.16667  0.267818  3.119651  3294.206
13.33333  0.268600  3.164352  3357.607
13.50000  0.269382  3.209184  3421.431
13.66667  0.270164  3.254146  3485.678
13.83333  0.270946  3.299239  3550.346
14.00000  0.271728  3.344462  3615.435
14.16667  0.272510  3.389815  3680.942
14.33333  0.273292  3.435298  3746.868
14.50000  0.274074  3.480912  3813.212
14.66667  0.274856  3.526656  3879.972
14.83333  0.275638  3.572531  3947.147
15.00000  0.276420  3.618536  4014.738
END FTABLE 36
FTABLE     18
 91    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.107438  0.000000  0.000000
0.111111  0.108931  0.012020  0.887823
0.222222  0.110424  0.024207  2.795283
0.333333  0.111916  0.036559  5.451393
0.444444  0.113409  0.049077  8.740480
0.555556  0.114902  0.061761  12.59031
0.666667  0.116395  0.074611  16.94988
0.777778  0.117888  0.087627  21.78071
0.888889  0.119381  0.100808  27.05264
1.000000  0.120873  0.114156  32.74131
1.111111  0.122366  0.127669  38.82669
1.222222  0.123859  0.141348  45.29207
1.333333  0.125352  0.155193  52.12333
1.444444  0.126845  0.169204  59.30845
1.555556  0.128338  0.183381  66.83711
1.666667  0.129831  0.197724  74.70041
1.777778  0.131324  0.212232  82.89065
1.888889  0.132817  0.226907  91.40111
2.000000  0.134310  0.241747  100.2259
2.111111  0.135803  0.256754  109.3601
2.222222  0.137296  0.271926  118.7990
2.333333  0.138789  0.287264  128.5388
2.444444  0.140282  0.302768  138.5761
2.555556  0.141775  0.318438  148.9078
2.666667  0.143269  0.334273  159.5315
2.777778  0.144762  0.350275  170.4447
2.888889  0.146255  0.366443  181.6455
3.000000  0.147748  0.382776  193.1323
3.111111  0.149241  0.399276  204.9035
3.222222  0.150734  0.415941  216.9578
3.333333  0.152228  0.432772  229.2943
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3.444444  0.153721  0.449769  241.9121
3.555556  0.155214  0.466932  254.8104
3.666667  0.156707  0.484261  267.9886
3.777778  0.158201  0.501756  281.4462
3.888889  0.159694  0.519417  295.1831
4.000000  0.161187  0.537244  309.1989
4.111111  0.162681  0.555236  323.4935
4.222222  0.164174  0.573395  338.0669
4.333333  0.165667  0.591720  352.9192
4.444444  0.167161  0.610210  368.0504
4.555556  0.168654  0.628866  383.4608
4.666667  0.170147  0.647689  399.1506
4.777778  0.171641  0.666677  415.1201
4.888889  0.173134  0.685831  431.3699
5.000000  0.174628  0.705151  447.9001
5.111111  0.176121  0.724637  464.7115
5.222222  0.177615  0.744289  481.8044
5.333333  0.179108  0.764107  499.1794
5.444444  0.180602  0.784091  516.8371
5.555556  0.182095  0.804241  534.7783
5.666667  0.183589  0.824557  553.0034
5.777778  0.185082  0.845038  571.5133
5.888889  0.186576  0.865686  590.3086
6.000000  0.188069  0.886500  609.3901
6.111111  0.189563  0.907479  628.7585
6.222222  0.191057  0.928625  648.4148
6.333333  0.192550  0.949936  668.3596
6.444444  0.194044  0.971414  688.5938
6.555556  0.195538  0.993057  709.1183
6.666667  0.197031  1.014866  729.9340
6.777778  0.198525  1.036842  751.0417
6.888889  0.200019  1.058983  772.4423
7.000000  0.201512  1.081290  794.1367
7.111111  0.203006  1.103763  816.1260
7.222222  0.204500  1.126403  838.4110
7.333333  0.205994  1.149208  860.9926
7.444444  0.207487  1.172179  883.8719
7.555556  0.208981  1.195316  907.0498
7.666667  0.210475  1.218619  930.5273
7.777778  0.211969  1.242088  954.3054
7.888889  0.213463  1.265724  978.3851
8.000000  0.214957  1.289525  1002.767
8.111111  0.216450  1.313492  1027.453
8.222222  0.217944  1.337625  1052.444
8.333333  0.219438  1.361924  1077.740
8.444444  0.220932  1.386389  1103.343
8.555556  0.222426  1.411020  1129.253
8.666667  0.223920  1.435817  1155.473
8.777778  0.225414  1.460780  1182.002
8.888889  0.226908  1.485909  1208.842
9.000000  0.228402  1.511204  1235.994
9.111111  0.229896  1.536665  1263.459
9.222222  0.231390  1.562292  1291.238
9.333333  0.232884  1.588085  1319.332
9.444444  0.234378  1.614044  1347.743
9.555556  0.235872  1.640169  1376.470
9.666667  0.237366  1.666460  1405.516
9.777778  0.238860  1.692917  1434.882
9.888889  0.240355  1.719540  1464.568
10.00000  0.241849  1.746329  1494.575
END FTABLE 18
FTABLE     14
 91    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.346189  0.000000  0.000000
0.088889  0.352344  0.031046  0.450259
0.177778  0.358499  0.062639  1.414704
0.266667  0.364654  0.094779  2.754071
0.355556  0.370808  0.127466  4.409014
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0.444444	0.376963	0.160701	6.342797
0.533333	0.383118	0.194482	8.529790
0.622222	0.389273	0.228810	10.95095
0.711111	0.395428	0.263686	13.59159
0.800000	0.401583	0.299109	16.44005
0.888889	0.407737	0.335078	19.48694
0.977778	0.413892	0.371595	22.72457
1.066667	0.420047	0.408659	26.14657
1.155556	0.426202	0.446270	29.74767
1.244444	0.432357	0.484429	33.52343
1.333333	0.438512	0.523134	37.47012
1.422222	0.444667	0.562386	41.58461
1.511111	0.450822	0.602186	45.86426
1.600000	0.456977	0.642532	50.30684
1.688889	0.463132	0.683426	54.91048
1.777778	0.469287	0.724867	59.67360
1.866667	0.475442	0.766855	64.59490
1.955556	0.481597	0.809390	69.67329
2.044444	0.487752	0.852472	74.90790
2.133333	0.493907	0.896101	80.29801
2.222222	0.500062	0.940278	85.84306
2.311111	0.506217	0.985001	91.54264
2.400000	0.512372	1.030272	97.39642
2.488889	0.518527	1.076089	103.4042
2.577778	0.524682	1.122454	109.5659
2.666667	0.530837	1.169366	115.8815
2.755556	0.536992	1.216825	122.3510
2.844444	0.543147	1.264832	128.9746
2.933333	0.549302	1.313385	135.7524
3.022222	0.555458	1.362485	142.6847
3.111111	0.561613	1.412133	149.7717
3.200000	0.567768	1.462328	157.0138
3.288889	0.573923	1.513069	164.4114
3.377778	0.580078	1.564358	171.9647
3.466667	0.586233	1.616194	179.6744
3.555556	0.592389	1.668578	187.5408
3.644444	0.598544	1.721508	195.5644
3.733333	0.604699	1.774985	203.7458
3.822222	0.610854	1.829010	212.0855
3.911111	0.617009	1.883582	220.5840
4.000000	0.623165	1.938700	229.2420
4.088889	0.629320	1.994366	238.0600
4.177778	0.635475	2.050580	247.0386
4.266667	0.641630	2.107340	256.1785
4.355556	0.647786	2.164647	265.4803
4.444444	0.653941	2.222502	274.9447
4.533333	0.660096	2.280903	284.5723
4.622222	0.666252	2.339852	294.3638
4.711111	0.672407	2.399348	304.3199
4.800000	0.678562	2.459391	314.4413
4.888889	0.684718	2.519981	324.7286
4.977778	0.690873	2.581119	335.1827
5.066667	0.697028	2.642803	345.8041
5.155556	0.703184	2.705035	356.5937
5.244444	0.709339	2.767814	367.5521
5.333333	0.715495	2.831140	378.6801
5.422222	0.721650	2.895013	389.9784
5.511111	0.727805	2.959433	401.4478
5.600000	0.733961	3.024400	413.0889
5.688889	0.740116	3.089915	424.9027
5.777778	0.746272	3.155977	436.8897
5.866667	0.752427	3.222585	449.0508
5.955556	0.758583	3.289741	461.3866
6.044444	0.764738	3.357445	473.8981
6.133333	0.770894	3.425695	486.5859
6.222222	0.777049	3.494492	499.4508
6.311111	0.783205	3.563837	512.4936
6.400000	0.789360	3.633729	525.7149
6.488889	0.795516	3.704168	539.1157
6.577778	0.801671	3.775154	552.6967

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6.666667  0.807827  3.846687  566.4586
6.755556  0.813982  3.918767  580.4022
6.844444  0.820138  3.991395  594.5284
6.933333  0.826294  4.064570  608.8377
7.022222  0.832449  4.138292  623.3312
7.111111  0.838605  4.212561  638.0094
7.200000  0.844760  4.287377  652.8732
7.288889  0.850916  4.362740  667.9234
7.377778  0.857072  4.438651  683.1607
7.466667  0.863227  4.515109  698.5860
7.555556  0.869383  4.592114  714.2000
7.644444  0.875539  4.669666  730.0034
7.733333  0.881694  4.747765  745.9971
7.822222  0.887850  4.826411  762.1818
7.911111  0.894006  4.905605  778.5583
8.000000  0.900162  4.985346  795.1274
END FTABLE 14
FTABLE     37
 91    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.728788  0.000000  0.000000
0.166667  0.731549  0.121695  3.045750
0.333333  0.734311  0.243850  9.601952
0.500000  0.737072  0.366465  18.74379
0.666667  0.739834  0.489541  30.07204
0.833333  0.742595  0.613076  43.33252
1.000000  0.745357  0.737072  58.34118
1.166667  0.748118  0.861529  74.95528
1.333333  0.750880  0.986445  93.05922
1.500000  0.753642  1.111822  112.5566
1.666667  0.756403  1.237659  133.3651
1.833333  0.759165  1.363956  155.4137
2.000000  0.761926  1.490714  178.6400
2.166667  0.764688  1.617932  202.9884
2.333333  0.767449  1.745610  228.4098
2.500000  0.770211  1.873748  254.8594
2.666667  0.772973  2.002347  282.2971
2.833333  0.775734  2.131406  310.6862
3.000000  0.778496  2.260925  339.9932
3.166667  0.781257  2.390904  370.1874
3.333333  0.784019  2.521344  401.2405
3.500000  0.786781  2.652244  433.1264
3.666667  0.789542  2.783604  465.8209
3.833333  0.792304  2.915425  499.3017
4.000000  0.795066  3.047706  533.5478
4.166667  0.797827  3.180447  568.5399
4.333333  0.800589  3.313648  604.2596
4.500000  0.803351  3.447310  640.6902
4.666667  0.806112  3.581431  677.8157
4.833333  0.808874  3.716014  715.6211
5.000000  0.811636  3.851056  754.0925
5.166667  0.814397  3.986559  793.2166
5.333333  0.817159  4.122522  832.9812
5.500000  0.819921  4.258945  873.3743
5.666667  0.822682  4.395829  914.3851
5.833333  0.825444  4.533173  956.0030
6.000000  0.828206  4.670977  998.2183
6.166667  0.830968  4.809241  1041.022
6.333333  0.833729  4.947966  1084.404
6.500000  0.836491  5.087151  1128.357
6.666667  0.839253  5.226796  1172.873
6.833333  0.842015  5.366902  1217.945
7.000000  0.844776  5.507468  1263.564
7.166667  0.847538  5.648494  1309.725
7.333333  0.850300  5.789981  1356.421
7.500000  0.853062  5.931928  1403.646
7.666667  0.855824  6.074335  1451.393
7.833333  0.858585  6.217202  1499.658
8.000000  0.861347  6.360530  1548.435
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8.166667  0.864109  6.504318  1597.718
8.333333  0.866871  6.648566  1647.504
8.500000  0.869633  6.793275  1697.787
8.666667  0.872395  6.938444  1748.564
8.833333  0.875156  7.084073  1799.829
9.000000  0.877918  7.230163  1851.580
9.166667  0.880680  7.376713  1903.811
9.333333  0.883442  7.523723  1956.520
9.500000  0.886204  7.671193  2009.703
9.666667  0.888966  7.819124  2063.357
9.833333  0.891728  7.967515  2117.478
10.00000  0.894490  8.116367  2172.063
10.16667  0.897252  8.265678  2227.110
10.33333  0.900013  8.415451  2282.616
10.50000  0.902775  8.565683  2338.578
10.66667  0.905537  8.716376  2394.993
10.83333  0.908299  8.867529  2451.860
11.00000  0.911061  9.019142  2509.175
11.16667  0.913823  9.171216  2566.936
11.33333  0.916585  9.323750  2625.142
11.50000  0.919347  9.476744  2683.790
11.66667  0.922109  9.630199  2742.879
11.83333  0.924871  9.784114  2802.406
12.00000  0.927633  9.938489  2862.370
12.16667  0.930395  10.09332  2922.768
12.33333  0.933157  10.24862  2983.600
12.50000  0.935919  10.40438  3044.864
12.66667  0.938681  10.56059  3106.557
12.83333  0.941443  10.71727  3168.680
13.00000  0.944205  10.87441  3231.230
13.16667  0.946967  11.03201  3294.206
13.33333  0.949729  11.19006  3357.607
13.50000  0.952491  11.34858  3421.431
13.66667  0.955253  11.50756  3485.678
13.83333  0.958015  11.66700  3550.346
14.00000  0.960777  11.82690  3615.435
14.16667  0.963540  11.98726  3680.942
14.33333  0.966302  12.14808  3746.868
14.50000  0.969064  12.30936  3813.212
14.66667  0.971826  12.47110  3879.972
14.83333  0.974588  12.63330  3947.147
15.00000  0.977350  12.79596  4014.738
END FTABLE 37
FTABLE     15
 91    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.131772  0.000000  0.000000
0.088889  0.134701  0.011843  0.443984
0.177778  0.137630  0.023947  1.391885
0.266667  0.140558  0.036311  2.704672
0.355556  0.143487  0.048935  4.323447
0.444444  0.146416  0.061820  6.212223
0.533333  0.149344  0.074964  8.346316
0.622222  0.152273  0.088370  10.70774
0.711111  0.155202  0.102035  13.28290
0.800000  0.158131  0.115961  16.06127
0.888889  0.161059  0.130147  19.03457
0.977778  0.163988  0.144594  22.19617
1.066667  0.166917  0.159301  25.54079
1.155556  0.169846  0.174268  29.06415
1.244444  0.172775  0.189496  32.76281
1.333333  0.175704  0.204984  36.63396
1.422222  0.178633  0.220732  40.67537
1.511111  0.181561  0.236740  44.88527
1.600000  0.184490  0.253009  49.26223
1.688889  0.187419  0.269539  53.80518
1.777778  0.190348  0.286328  58.51329
1.866667  0.193277  0.303378  63.38598
1.955556  0.196206  0.320689  68.42285
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2.044444  0.199135  0.338260  73.62369
2.133333  0.202064  0.356091  78.98843
2.222222  0.204993  0.374182  84.51712
2.311111  0.207922  0.392534  90.20993
2.400000  0.210851  0.411146  96.06712
2.488889  0.213780  0.430019  102.0891
2.577778  0.216710  0.449151  108.2761
2.666667  0.219639  0.468545  114.6289
2.755556  0.222568  0.488198  121.1478
2.844444  0.225497  0.508112  127.8336
2.933333  0.228426  0.528287  134.6868
3.022222  0.231355  0.548721  141.7082
3.111111  0.234284  0.569416  148.8985
3.200000  0.237214  0.590372  156.2584
3.288889  0.240143  0.611588  163.7888
3.377778  0.243072  0.633064  171.4904
3.466667  0.246001  0.654801  179.3641
3.555556  0.248931  0.676798  187.4108
3.644444  0.251860  0.699055  195.6313
3.733333  0.254789  0.721573  204.0266
3.822222  0.257719  0.744351  212.5976
3.911111  0.260648  0.767389  221.3451
4.000000  0.263577  0.790688  230.2701
4.088889  0.266507  0.814248  239.3737
4.177778  0.269436  0.838067  248.6567
4.266667  0.272365  0.862147  258.1201
4.355556  0.275295  0.886488  267.7649
4.444444  0.278224  0.911089  277.5920
4.533333  0.281154  0.935950  287.6026
4.622222  0.284083  0.961071  297.7975
4.711111  0.287013  0.986454  308.1778
4.800000  0.289942  1.012096  318.7445
4.888889  0.292872  1.037999  329.4986
4.977778  0.295801  1.064162  340.4411
5.066667  0.298731  1.090586  351.5731
5.155556  0.301660  1.117270  362.8955
5.244444  0.304590  1.144214  374.4093
5.333333  0.307520  1.171419  386.1157
5.422222  0.310449  1.198884  398.0157
5.511111  0.313379  1.226610  410.1101
5.600000  0.316308  1.254596  422.4002
5.688889  0.319238  1.282843  434.8870
5.777778  0.322168  1.311350  447.5713
5.866667  0.325098  1.340117  460.4544
5.955556  0.328027  1.369145  473.5372
6.044444  0.330957  1.398433  486.8208
6.133333  0.333887  1.427982  500.3062
6.222222  0.336816  1.457791  513.9944
6.311111  0.339746  1.487860  527.8865
6.400000  0.342676  1.518190  541.9834
6.488889  0.345606  1.548780  556.2863
6.577778  0.348536  1.579631  570.7962
6.666667  0.351466  1.610742  585.5141
6.755556  0.354395  1.642114  600.4410
6.844444  0.357325  1.673746  615.5780
6.933333  0.360255  1.705638  630.9260
7.022222  0.363185  1.737791  646.4862
7.111111  0.366115  1.770204  662.2595
7.200000  0.369045  1.802878  678.2470
7.288889  0.371975  1.835812  694.4497
7.377778  0.374905  1.869007  710.8687
7.466667  0.377835  1.902462  727.5049
7.555556  0.380765  1.936178  744.3593
7.644444  0.383695  1.970154  761.4331
7.733333  0.386625  2.004390  778.7271
7.822222  0.389555  2.038887  796.2425
7.911111  0.392485  2.073644  813.9802
8.000000  0.395415  2.108662  831.9413
END FTABLE 15
FTABLE     22
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DRAFT

91 4

Depth (ft)	Area (acres)	Volume (acre-ft)	Outflow1 (cfs)	Velocity (ft/sec)	Travel Time*** (Minutes)***
0.000000	0.068779	0.000000	0.000000		
0.088889	0.070307	0.006182	0.434932		
0.177778	0.071836	0.012499	1.363508		
0.266667	0.073365	0.018952	2.649532		
0.355556	0.074894	0.025542	4.235304		
0.444444	0.076423	0.032267	6.085573		
0.533333	0.077952	0.039128	8.176158		
0.622222	0.079480	0.046125	10.48944		
0.711111	0.081009	0.053258	13.01210		
0.800000	0.082538	0.060527	15.73383		
0.888889	0.084067	0.067931	18.64650		
0.977778	0.085596	0.075472	21.74365		
1.066667	0.087125	0.083148	25.02009		
1.155556	0.088654	0.090961	28.47162		
1.244444	0.090183	0.098909	32.09486		
1.333333	0.091712	0.106993	35.88709		
1.422222	0.093241	0.115213	39.84612		
1.511111	0.094770	0.123570	43.97018		
1.600000	0.096299	0.132061	48.25791		
1.688889	0.097828	0.140689	52.70824		
1.777778	0.099357	0.149453	57.32037		
1.866667	0.100886	0.158353	62.09371		
1.955556	0.102415	0.167388	67.02790		
2.044444	0.103944	0.176560	72.12271		
2.133333	0.105474	0.185867	77.37808		
2.222222	0.107003	0.195311	82.79405		
2.311111	0.108532	0.204890	88.37080		
2.400000	0.110061	0.214605	94.10858		
2.488889	0.111590	0.224457	100.0077		
2.577778	0.113119	0.234444	106.0687		
2.666667	0.114649	0.244567	112.2919		
2.755556	0.116178	0.254826	118.6780		
2.844444	0.117707	0.265221	125.2274		
2.933333	0.119236	0.275751	131.9410		
3.022222	0.120766	0.286418	138.8192		
3.111111	0.122295	0.297221	145.8629		
3.200000	0.123824	0.308159	153.0728		
3.288889	0.125354	0.319234	160.4496		
3.377778	0.126883	0.330445	167.9942		
3.466667	0.128412	0.341791	175.7074		
3.555556	0.129942	0.353273	183.5900		
3.644444	0.131471	0.364892	191.6430		
3.733333	0.133001	0.376646	199.8671		
3.822222	0.134530	0.388536	208.2633		
3.911111	0.136059	0.400562	216.8325		
4.000000	0.137589	0.412725	225.5756		
4.088889	0.139118	0.425023	234.4935		
4.177778	0.140648	0.437457	243.5873		
4.266667	0.142177	0.450027	252.8577		
4.355556	0.143707	0.462733	262.3059		
4.444444	0.145236	0.475575	271.9327		
4.533333	0.146766	0.488552	281.7392		
4.622222	0.148295	0.501666	291.7263		
4.711111	0.149825	0.514916	301.8950		
4.800000	0.151355	0.528302	312.2462		
4.888889	0.152884	0.541824	322.7811		
4.977778	0.154414	0.555481	333.5005		
5.066667	0.155944	0.569275	344.4055		
5.155556	0.157473	0.583205	355.4970		
5.244444	0.159003	0.597270	366.7762		
5.333333	0.160533	0.611472	378.2439		
5.422222	0.162062	0.625809	389.9012		
5.511111	0.163592	0.640283	401.7491		
5.600000	0.165122	0.654892	413.7887		
5.688889	0.166651	0.669638	426.0208		
5.777778	0.168181	0.684519	438.4466		
5.866667	0.169711	0.699537	451.0670		

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5.955556  0.171241  0.714690  463.8831
6.044444  0.172771  0.729979  476.8959
6.133333  0.174300  0.745405  490.1063
6.222222  0.175830  0.760966  503.5155
6.311111  0.177360  0.776664  517.1243
6.400000  0.178890  0.792497  530.9339
6.488889  0.180420  0.808466  544.9452
6.577778  0.181950  0.824572  559.1593
6.666667  0.183480  0.840813  573.5771
6.755556  0.185010  0.857190  588.1997
6.844444  0.186540  0.873704  603.0281
6.933333  0.188070  0.890353  618.0632
7.022222  0.189600  0.907138  633.3062
7.111111  0.191130  0.924059  648.7579
7.200000  0.192660  0.941117  664.4195
7.288889  0.194190  0.958310  680.2919
7.377778  0.195720  0.975639  696.3761
7.466667  0.197250  0.993105  712.6731
7.555556  0.198780  1.010706  729.1839
7.644444  0.200310  1.028443  745.9096
7.733333  0.201840  1.046317  762.8510
7.822222  0.203370  1.064326  780.0093
7.911111  0.204900  1.082471  797.3855
8.000000  0.206430  1.100753  814.9804
END FTABLE 22
FTABLE     38
 91    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.123232  0.000000  0.000000
0.333333  0.124166  0.041233  5.459048
0.666667  0.125100  0.082777  17.09702
1.000000  0.126034  0.124633  33.16902
1.333333  0.126968  0.166800  52.90745
1.666667  0.127902  0.209279  75.82277
2.000000  0.128836  0.252068  101.5631
2.333333  0.129770  0.295169  129.8590
2.666667  0.130704  0.338581  160.4958
3.000000  0.131638  0.382305  193.2981
3.333333  0.132572  0.426340  228.1193
3.666667  0.133506  0.470686  264.8356
4.000000  0.134440  0.515344  303.3407
4.333333  0.135374  0.560313  343.5429
4.666667  0.136308  0.605593  385.3621
5.000000  0.137242  0.651184  428.7282
5.333333  0.138176  0.697087  473.5791
5.666667  0.139110  0.743301  519.8601
6.000000  0.140044  0.789827  567.5223
6.333333  0.140978  0.836664  616.5219
6.666667  0.141912  0.883812  666.8198
7.000000  0.142846  0.931272  718.3808
7.333333  0.143780  0.979043  771.1732
7.666667  0.144714  1.027125  825.1681
8.000000  0.145648  1.075518  880.3396
8.333333  0.146582  1.124223  936.6641
8.666667  0.147516  1.173240  994.1202
9.000000  0.148450  1.222567  1052.688
9.333333  0.149384  1.272206  1112.351
9.666667  0.150318  1.322156  1173.091
10.00000  0.151252  1.372418  1234.895
10.33333  0.152186  1.422991  1297.748
10.66667  0.153120  1.473876  1361.638
11.00000  0.154054  1.525071  1426.554
11.33333  0.154988  1.576578  1492.486
11.66667  0.155922  1.628397  1559.423
12.00000  0.156857  1.680527  1627.358
12.33333  0.157791  1.732968  1696.282
12.66667  0.158725  1.785721  1766.187
13.00000  0.159659  1.838784  1837.068
13.33333  0.160593  1.892160  1908.918
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13.66667  0.161527  1.945846  1981.731
14.00000  0.162461  1.999845  2055.502
14.33333  0.163395  2.054154  2130.227
14.66667  0.164330  2.108775  2205.901
15.00000  0.165264  2.163707  2282.520
15.33333  0.166198  2.218951  2360.081
15.66667  0.167132  2.274506  2438.581
16.00000  0.168066  2.330372  2518.016
16.33333  0.169000  2.386550  2598.385
16.66667  0.169934  2.443039  2679.684
17.00000  0.170869  2.499839  2761.912
17.33333  0.171803  2.556951  2845.067
17.66667  0.172737  2.614374  2929.147
18.00000  0.173671  2.672109  3014.151
18.33333  0.174605  2.730155  3100.078
18.66667  0.175540  2.788513  3186.925
19.00000  0.176474  2.847182  3274.694
19.33333  0.177408  2.906162  3363.382
19.66667  0.178342  2.965454  3452.989
20.00000  0.179276  3.025057  3543.515
20.33333  0.180211  3.084971  3634.960
20.66667  0.181145  3.145197  3727.323
21.00000  0.182079  3.205734  3820.604
21.33333  0.183013  3.266583  3914.803
21.66667  0.183948  3.327743  4009.920
22.00000  0.184882  3.389215  4105.957
22.33333  0.185816  3.450998  4202.911
22.66667  0.186750  3.513092  4300.786
23.00000  0.187685  3.575498  4399.580
23.33333  0.188619  3.638215  4499.294
23.66667  0.189553  3.701244  4599.929
24.00000  0.190487  3.764584  4701.486
24.33333  0.191422  3.828236  4803.966
24.66667  0.192356  3.892199  4907.369
25.00000  0.193290  3.956473  5011.695
25.33333  0.194225  4.021059  5116.948
25.66667  0.195159  4.085956  5223.126
26.00000  0.196093  4.151165  5330.231
26.33333  0.197028  4.216685  5438.265
26.66667  0.197962  4.282516  5547.229
27.00000  0.198896  4.348659  5657.123
27.33333  0.199830  4.415114  5767.949
27.66667  0.200765  4.481880  5879.708
28.00000  0.201699  4.548957  5992.401
28.33333  0.202634  4.616346  6106.031
28.66667  0.203568  4.684046  6220.598
29.00000  0.204502  4.752058  6336.103
29.33333  0.205437  4.820381  6452.549
29.66667  0.206371  4.889015  6569.936
30.00000  0.207305  4.957961  6688.266
END FTABLE 38
FTABLE     19
 91    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.168457  0.000000  0.000000
0.088889  0.170953  0.015085  0.667260
0.177778  0.173449  0.030392  2.099794
0.266667  0.175946  0.045920  4.093248
0.355556  0.178442  0.061671  6.560397
0.444444  0.180938  0.077643  9.446872
0.533333  0.183434  0.093838  12.71437
0.622222  0.185930  0.110254  16.33413
0.711111  0.188426  0.126892  20.28363
0.800000  0.190922  0.143752  24.54481
0.888889  0.193419  0.160834  29.10286
0.977778  0.195915  0.178137  33.94547
1.066667  0.198411  0.195663  39.06230
1.155556  0.200907  0.213410  44.44461
1.244444  0.203403  0.231380  50.08490
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1.333333	0.205900	0.249571	55.97677
1.422222	0.208396	0.267984	62.11469
1.511111	0.210892	0.286619	68.49390
1.600000	0.213388	0.305476	75.11025
1.688889	0.215885	0.324555	81.96018
1.777778	0.218381	0.343855	89.04056
1.866667	0.220877	0.363378	96.34872
1.955556	0.223374	0.383123	103.8823
2.044444	0.225870	0.403089	111.6393
2.133333	0.228366	0.423277	119.6180
2.222222	0.230863	0.443687	127.8168
2.311111	0.233359	0.464319	136.2346
2.400000	0.235855	0.485173	144.8702
2.488889	0.238352	0.506249	153.7227
2.577778	0.240848	0.527547	162.7914
2.666667	0.243345	0.549067	172.0756
2.755556	0.245841	0.570808	181.5750
2.844444	0.248337	0.592772	191.2891
2.933333	0.250834	0.614957	201.2176
3.022222	0.253330	0.637364	211.3605
3.111111	0.255827	0.659994	221.7176
3.200000	0.258323	0.682845	232.2888
3.288889	0.260820	0.705918	243.0744
3.377778	0.263316	0.729213	254.0744
3.466667	0.265813	0.752730	265.2890
3.555556	0.268309	0.776468	276.7184
3.644444	0.270806	0.800429	288.3630
3.733333	0.273302	0.824612	300.2230
3.822222	0.275799	0.849016	312.2990
3.911111	0.278296	0.873642	324.5912
4.000000	0.280792	0.898491	337.1001
4.088889	0.283289	0.923561	349.8263
4.177778	0.285785	0.948853	362.7703
4.266667	0.288282	0.974367	375.9325
4.355556	0.290779	1.000103	389.3137
4.444444	0.293275	1.026061	402.9143
4.533333	0.295772	1.052241	416.7350
4.622222	0.298269	1.078643	430.7764
4.711111	0.300765	1.105267	445.0392
4.800000	0.303262	1.132112	459.5241
4.888889	0.305759	1.159180	474.2318
4.977778	0.308255	1.186469	489.1629
5.066667	0.310752	1.213981	504.3183
5.155556	0.313249	1.241714	519.6985
5.244444	0.315746	1.269670	535.3045
5.333333	0.318242	1.297847	551.1369
5.422222	0.320739	1.326246	567.1966
5.511111	0.323236	1.354867	583.4842
5.600000	0.325733	1.383710	600.0006
5.688889	0.328230	1.412775	616.7466
5.777778	0.330726	1.442062	633.7231
5.866667	0.333223	1.471571	650.9307
5.955556	0.335720	1.501302	668.3704
6.044444	0.338217	1.531255	686.0429
6.133333	0.340714	1.561429	703.9491
6.222222	0.343211	1.591826	722.0899
6.311111	0.345708	1.622444	740.4660
6.400000	0.348204	1.653285	759.0784
6.488889	0.350701	1.684347	777.9279
6.577778	0.353198	1.715632	797.0153
6.666667	0.355695	1.747138	816.3415
6.755556	0.358192	1.778867	835.9074
6.844444	0.360689	1.810817	855.7138
6.933333	0.363186	1.842989	875.7617
7.022222	0.365683	1.875383	896.0518
7.111111	0.368180	1.908000	916.5852
7.200000	0.370677	1.940838	937.3625
7.288889	0.373174	1.973898	958.3848
7.377778	0.375671	2.007180	979.6529
7.466667	0.378168	2.040684	1001.168

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7.555556  0.380665  2.074410  1022.930
7.644444  0.383162  2.108358  1044.941
7.733333  0.385660  2.142527  1067.201
7.822222  0.388157  2.176919  1089.712
7.911111  0.390654  2.211533  1112.474
8.000000  0.393151  2.246369  1135.487
END FTABLE 19
FTABLE     39
 91    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.545225  0.000000  0.000000
0.333333  0.548860  0.182348  4.660386
0.666667  0.552495  0.365907  14.61826
1.000000  0.556131  0.550678  28.40055
1.333333  0.559766  0.736661  45.36100
1.666667  0.563401  0.923855  65.08691
2.000000  0.567036  1.112261  87.28068
2.333333  0.570672  1.301879  111.7134
2.666667  0.574307  1.492709  138.2019
3.000000  0.577942  1.684751  166.5954
3.333333  0.581577  1.878004  196.7676
3.666667  0.585213  2.072469  228.6106
4.000000  0.588848  2.268146  262.0316
4.333333  0.592483  2.465034  296.9500
4.666667  0.596118  2.663134  333.2949
5.000000  0.599754  2.862446  371.0038
5.333333  0.603389  3.062970  410.0211
5.666667  0.607024  3.264706  450.2973
6.000000  0.610660  3.467653  491.7881
6.333333  0.614295  3.671812  534.4536
6.666667  0.617930  3.877183  578.2577
7.000000  0.621566  4.083766  623.1679
7.333333  0.625201  4.291560  669.1546
7.666667  0.628836  4.500566  716.1908
8.000000  0.632472  4.710784  764.2521
8.333333  0.636107  4.922214  813.3161
8.666667  0.639742  5.134856  863.3622
9.000000  0.643378  5.348709  914.3717
9.333333  0.647013  5.563774  966.3273
9.666667  0.650648  5.780051  1019.213
10.00000  0.654284  5.997540  1073.015
10.33333  0.657919  6.216240  1127.718
10.66667  0.661554  6.436153  1183.312
11.00000  0.665190  6.657277  1239.784
11.33333  0.668825  6.879612  1297.124
11.66667  0.672461  7.103160  1355.321
12.00000  0.676096  7.327920  1414.368
12.33333  0.679731  7.553891  1474.256
12.66667  0.683367  7.781074  1534.976
13.00000  0.687002  8.009469  1596.523
13.33333  0.690638  8.239075  1658.888
13.66667  0.694273  8.469894  1722.067
14.00000  0.697909  8.701924  1786.052
14.33333  0.701544  8.935166  1850.840
14.66667  0.705179  9.169620  1916.425
15.00000  0.708815  9.405286  1982.803
15.33333  0.712450  9.642163  2049.970
15.66667  0.716086  9.880253  2117.921
16.00000  0.719721  10.11955  2186.653
16.33333  0.723357  10.36007  2256.163
16.66667  0.726992  10.60179  2326.448
17.00000  0.730628  10.84473  2397.506
17.33333  0.734263  11.08888  2469.332
17.66667  0.737899  11.33424  2541.926
18.00000  0.741534  11.58081  2615.285
18.33333  0.745170  11.82859  2689.407
18.66667  0.748805  12.07759  2764.290
19.00000  0.752441  12.32780  2839.933
19.33333  0.756076  12.57922  2916.334
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19.66667  0.759712  12.83185  2993.492
20.00000  0.763347  13.08569  3071.406
20.33333  0.766983  13.34075  3150.075
20.66667  0.770618  13.59701  3229.497
21.00000  0.774254  13.85449  3309.672
21.33333  0.777889  14.11318  3390.599
21.66667  0.781525  14.37308  3472.278
22.00000  0.785160  14.63420  3554.708
22.33333  0.788796  14.89652  3637.889
22.66667  0.792431  15.16006  3721.820
23.00000  0.796067  15.42481  3806.501
23.33333  0.799703  15.69077  3891.933
23.66667  0.803338  15.95795  3978.114
24.00000  0.806974  16.22633  4065.045
24.33333  0.810609  16.49593  4152.726
24.66667  0.814245  16.76674  4241.157
25.00000  0.817881  17.03876  4330.338
25.33333  0.821516  17.31199  4420.270
25.66667  0.825152  17.58644  4510.952
26.00000  0.828787  17.86209  4602.386
26.33333  0.832423  18.13896  4694.571
26.66667  0.836059  18.41704  4787.508
27.00000  0.839694  18.69633  4881.197
27.33333  0.843330  18.97684  4975.640
27.66667  0.846965  19.25855  5070.836
28.00000  0.850601  19.54148  5166.786
28.33333  0.854237  19.82562  5263.490
28.66667  0.857872  20.11097  5360.950
29.00000  0.861508  20.39754  5459.167
29.33333  0.865144  20.68531  5558.140
29.66667  0.868779  20.97430  5657.871
30.00000  0.872415  21.26450  5758.360
END FTABLE 39
FTABLE     40
 91    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.200872  0.000000  0.000000
0.333333  0.202212  0.067181  4.887855
0.666667  0.203552  0.134808  15.33176
1.000000  0.204891  0.202882  29.78675
1.333333  0.206231  0.271402  47.57501
1.666667  0.207570  0.340369  68.26373
2.000000  0.208910  0.409782  91.54075
2.333333  0.210249  0.479642  117.1660
2.666667  0.211589  0.549949  144.9474
3.000000  0.212929  0.620702  174.7268
3.333333  0.214268  0.691901  206.3715
3.666667  0.215608  0.763547  239.7688
4.000000  0.216948  0.835640  274.8211
4.333333  0.218287  0.908179  311.4438
4.666667  0.219627  0.981164  349.5627
5.000000  0.220967  1.054597  389.1120
5.333333  0.222306  1.128476  430.0337
5.666667  0.223646  1.202801  472.2758
6.000000  0.224986  1.277573  515.7917
6.333333  0.226325  1.352791  560.5397
6.666667  0.227665  1.428456  606.4818
7.000000  0.229005  1.504568  653.5840
7.333333  0.230344  1.581126  701.8152
7.666667  0.231684  1.658131  751.1473
8.000000  0.233024  1.735582  801.5544
8.333333  0.234363  1.813480  853.0131
8.666667  0.235703  1.891824  905.5019
9.000000  0.237043  1.970615  959.0011
9.333333  0.238383  2.049853  1013.493
9.666667  0.239722  2.129537  1068.960
10.00000  0.241062  2.209668  1125.387
10.33333  0.242402  2.290245  1182.761
10.66667  0.243741  2.371269  1241.068
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11.00000  0.245081  2.452739  1300.296
11.33333  0.246421  2.534656  1360.435
11.66667  0.247761  2.617020  1421.473
12.00000  0.249101  2.699830  1483.402
12.33333  0.250440  2.783087  1546.213
12.66667  0.251780  2.866790  1609.897
13.00000  0.253120  2.950940  1674.447
13.33333  0.254460  3.035537  1739.856
13.66667  0.255799  3.120580  1806.119
14.00000  0.257139  3.206070  1873.228
14.33333  0.258479  3.292006  1941.178
14.66667  0.259819  3.378389  2009.964
15.00000  0.261159  3.465219  2079.582
15.33333  0.262499  3.552495  2150.026
15.66667  0.263838  3.640218  2221.294
16.00000  0.265178  3.728387  2293.381
16.33333  0.266518  3.817003  2366.284
16.66667  0.267858  3.906066  2440.000
17.00000  0.269198  3.995575  2514.525
17.33333  0.270538  4.085531  2589.857
17.66667  0.271877  4.175933  2665.995
18.00000  0.273217  4.266783  2742.934
18.33333  0.274557  4.358078  2820.674
18.66667  0.275897  4.449821  2899.212
19.00000  0.277237  4.542010  2978.547
19.33333  0.278577  4.634645  3058.677
19.66667  0.279917  4.727728  3139.601
20.00000  0.281257  4.821257  3221.318
20.33333  0.282597  4.915232  3303.826
20.66667  0.283936  5.009654  3387.125
21.00000  0.285276  5.104523  3471.213
21.33333  0.286616  5.199838  3556.090
21.66667  0.287956  5.295601  3641.756
22.00000  0.289296  5.391809  3728.209
22.33333  0.290636  5.488465  3815.450
22.66667  0.291976  5.585567  3903.478
23.00000  0.293316  5.683115  3992.292
23.33333  0.294656  5.781111  4081.893
23.66667  0.295996  5.879553  4172.281
24.00000  0.297336  5.978441  4263.455
24.33333  0.298676  6.077777  4355.416
24.66667  0.300016  6.177559  4448.163
25.00000  0.301356  6.277787  4541.697
25.33333  0.302696  6.378463  4636.018
25.66667  0.304036  6.479585  4731.127
26.00000  0.305376  6.581153  4827.023
26.33333  0.306716  6.683169  4923.708
26.66667  0.308056  6.785631  5021.181
27.00000  0.309396  6.888539  5119.443
27.33333  0.310736  6.991894  5218.495
27.66667  0.312076  7.095696  5318.337
28.00000  0.313416  7.199945  5418.970
28.33333  0.314756  7.304640  5520.395
28.66667  0.316096  7.409783  5622.612
29.00000  0.317436  7.515371  5725.622
29.33333  0.318776  7.621407  5829.426
29.66667  0.320116  7.727889  5934.025
30.00000  0.321456  7.834818  6039.419
END FTABLE 40
FTABLE     16
 91    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.172635  0.000000  0.000000
0.088889  0.176472  0.015516  0.513243
0.177778  0.180309  0.031373  1.609011
0.266667  0.184146  0.047571  3.126586
0.355556  0.187983  0.064110  4.997880
0.444444  0.191820  0.080990  7.181295
0.533333  0.195657  0.098211  9.648294
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0.622222	0.199494	0.115773	12.37809
0.711111	0.203331	0.133677	15.35496
0.800000	0.207168	0.151921	18.56674
0.888889	0.211005	0.170507	22.00385
0.977778	0.214842	0.189433	25.65865
1.066667	0.218679	0.208701	29.52501
1.155556	0.222516	0.228309	33.59800
1.244444	0.226353	0.248259	37.87362
1.333333	0.230190	0.268550	42.34865
1.422222	0.234027	0.289182	47.02050
1.511111	0.237865	0.310155	51.88711
1.600000	0.241702	0.331469	56.94686
1.688889	0.245539	0.353124	62.19848
1.777778	0.249376	0.375120	67.64103
1.866667	0.253214	0.397458	73.27383
1.955556	0.257051	0.420136	79.09643
2.044444	0.260888	0.443156	85.10857
2.133333	0.264726	0.466516	91.31018
2.222222	0.268563	0.490218	97.70131
2.311111	0.272400	0.514261	104.2822
2.400000	0.276238	0.538645	111.0530
2.488889	0.280075	0.563370	118.0144
2.577778	0.283913	0.588436	125.1666
2.666667	0.287750	0.613843	132.5103
2.755556	0.291588	0.639591	140.0462
2.844444	0.295425	0.665681	147.7749
2.933333	0.299263	0.692111	155.6972
3.022222	0.303100	0.718883	163.8139
3.111111	0.306938	0.745996	172.1258
3.200000	0.310775	0.773450	180.6339
3.288889	0.314613	0.801245	189.3389
3.377778	0.318451	0.829381	198.2419
3.466667	0.322288	0.857858	207.3439
3.555556	0.326126	0.886677	216.6458
3.644444	0.329964	0.915836	226.1487
3.733333	0.333801	0.945337	235.8536
3.822222	0.337639	0.975179	245.7616
3.911111	0.341477	1.005362	255.8737
4.000000	0.345315	1.035886	266.1910
4.088889	0.349152	1.066751	276.7146
4.177778	0.352990	1.097957	287.4457
4.266667	0.356828	1.129505	298.3853
4.355556	0.360666	1.161393	309.5347
4.444444	0.364504	1.193623	320.8948
4.533333	0.368342	1.226194	332.4670
4.622222	0.372180	1.259106	344.2523
4.711111	0.376018	1.292359	356.2518
4.800000	0.379856	1.325954	368.4669
4.888889	0.383694	1.359889	380.8985
4.977778	0.387532	1.394166	393.5480
5.066667	0.391370	1.428784	406.4165
5.155556	0.395208	1.463743	419.5051
5.244444	0.399046	1.499043	432.8151
5.333333	0.402884	1.534684	446.3476
5.422222	0.406722	1.570667	460.1038
5.511111	0.410560	1.606991	474.0850
5.600000	0.414399	1.643655	488.2923
5.688889	0.418237	1.680661	502.7268
5.777778	0.422075	1.718009	517.3899
5.866667	0.425913	1.755697	532.2827
5.955556	0.429752	1.793726	547.4063
6.044444	0.433590	1.832097	562.7621
6.133333	0.437428	1.870809	578.3511
6.222222	0.441266	1.909862	594.1746
6.311111	0.445105	1.949257	610.2337
6.400000	0.448943	1.988992	626.5298
6.488889	0.452782	2.029069	643.0638
6.577778	0.456620	2.069486	659.8372
6.666667	0.460458	2.110246	676.8510
6.755556	0.464297	2.151346	694.1064

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6.844444  0.468135  2.192787  711.6046
6.933333  0.471974  2.234570  729.3469
7.022222  0.475812  2.276694  747.3344
7.111111  0.479651  2.319159  765.5683
7.200000  0.483490  2.361965  784.0497
7.288889  0.487328  2.405112  802.7800
7.377778  0.491167  2.448601  821.7601
7.466667  0.495005  2.492431  840.9915
7.555556  0.498844  2.536602  860.4751
7.644444  0.502683  2.581114  880.2123
7.733333  0.506521  2.625968  900.2041
7.822222  0.510360  2.671163  920.4518
7.911111  0.514199  2.716699  940.9565
8.000000  0.518038  2.762576  961.7194
END FTABLE 16
FTABLE     23
 91    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.044169  0.000000  0.000000
0.088889  0.045152  0.003970  0.766700
0.177778  0.046134  0.008027  2.403597
0.266667  0.047117  0.012171  4.670604
0.355556  0.048100  0.016403  7.466009
0.444444  0.049083  0.020723  10.72767
0.533333  0.050066  0.025129  14.41296
0.622222  0.051048  0.029623  18.49082
0.711111  0.052031  0.034204  22.93778
0.800000  0.053014  0.038873  27.73565
0.888889  0.053998  0.043629  32.87012
0.977778  0.054981  0.048473  38.32979
1.066667  0.055964  0.053404  44.10550
1.155556  0.056947  0.058422  50.18987
1.244444  0.057930  0.063527  56.57694
1.333333  0.058914  0.068721  63.26190
1.422222  0.059897  0.074001  70.24088
1.511111  0.060880  0.079369  77.51080
1.600000  0.061864  0.084824  85.06922
1.688889  0.062847  0.090367  92.91428
1.777778  0.063831  0.095997  101.0446
1.866667  0.064815  0.101715  109.4590
1.955556  0.065798  0.107520  118.1570
2.044444  0.066782  0.113412  127.1382
2.133333  0.067766  0.119392  136.4024
2.222222  0.068749  0.125459  145.9497
2.311111  0.069733  0.131614  155.7804
2.400000  0.070717  0.137856  165.8950
2.488889  0.071701  0.144186  176.2940
2.577778  0.072685  0.150603  186.9783
2.666667  0.073669  0.157108  197.9486
2.755556  0.074653  0.163700  209.2060
2.844444  0.075637  0.170380  220.7514
2.933333  0.076622  0.177147  232.5860
3.022222  0.077606  0.184001  244.7110
3.111111  0.078590  0.190943  257.1276
3.200000  0.079574  0.197973  269.8372
3.288889  0.080559  0.205090  282.8411
3.377778  0.081543  0.212294  296.1408
3.466667  0.082528  0.219586  309.7376
3.555556  0.083512  0.226966  323.6332
3.644444  0.084497  0.234433  337.8289
3.733333  0.085481  0.241988  352.3264
3.822222  0.086466  0.249630  367.1273
3.911111  0.087451  0.257359  382.2331
4.000000  0.088436  0.265177  397.6455
4.088889  0.089420  0.273081  413.3660
4.177778  0.090405  0.281074  429.3965
4.266667  0.091390  0.289153  445.7385
4.355556  0.092375  0.297321  462.3938
4.444444  0.093360  0.305576  479.3640
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4.533333  0.094345  0.313918  496.6509
4.622222  0.095330  0.322348  514.2561
4.711111  0.096315  0.330866  532.1815
4.800000  0.097301  0.339471  550.4288
4.888889  0.098286  0.348164  568.9996
4.977778  0.099271  0.356944  587.8959
5.066667  0.100257  0.365812  607.1192
5.155556  0.101242  0.374767  626.6715
5.244444  0.102227  0.383810  646.5544
5.333333  0.103213  0.392941  666.7697
5.422222  0.104198  0.402159  687.3193
5.511111  0.105184  0.411465  708.2049
5.600000  0.106170  0.420859  729.4282
5.688889  0.107155  0.430340  750.9911
5.777778  0.108141  0.439909  772.8953
5.866667  0.109127  0.449565  795.1426
5.955556  0.110113  0.459309  817.7349
6.044444  0.111099  0.469141  840.6738
6.133333  0.112084  0.479060  863.9612
6.222222  0.113070  0.489067  887.5989
6.311111  0.114056  0.499161  911.5886
6.400000  0.115043  0.509343  935.9322
6.488889  0.116029  0.519613  960.6314
6.577778  0.117015  0.529971  985.6880
6.666667  0.118001  0.540416  1011.104
6.755556  0.118987  0.550949  1036.881
6.844444  0.119974  0.561569  1063.020
6.933333  0.120960  0.572277  1089.524
7.022222  0.121946  0.583073  1116.394
7.111111  0.122933  0.593957  1143.633
7.200000  0.123919  0.604928  1171.241
7.288889  0.124906  0.615987  1199.221
7.377778  0.125892  0.627133  1227.574
7.466667  0.126879  0.638368  1256.303
7.555556  0.127866  0.649690  1285.408
7.644444  0.128853  0.661099  1314.892
7.733333  0.129839  0.672597  1344.757
7.822222  0.130826  0.684182  1375.003
7.911111  0.131813  0.695855  1405.634
8.000000  0.132800  0.707615  1436.650
END FTABLE 23
FTABLE     41
 91    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.567034  0.000000  0.000000
0.333333  0.570817  0.189642  12.41798
0.666667  0.574600  0.380545  38.95156
1.000000  0.578383  0.572708  75.67561
1.333333  0.582166  0.766133  120.8681
1.666667  0.585949  0.960819  173.4294
2.000000  0.589732  1.156766  232.5666
2.333333  0.593515  1.353974  297.6696
2.666667  0.597299  1.552443  368.2504
3.000000  0.601082  1.752173  443.9073
3.333333  0.604865  1.953164  524.3034
3.666667  0.608649  2.155417  609.1517
4.000000  0.612432  2.358930  698.2049
4.333333  0.616215  2.563705  791.2479
4.666667  0.619999  2.769740  888.0918
5.000000  0.623782  2.977037  988.5702
5.333333  0.627566  3.185595  1092.535
5.666667  0.631349  3.395414  1199.854
6.000000  0.635133  3.606495  1310.410
6.333333  0.638916  3.818836  1424.096
6.666667  0.642700  4.032439  1540.815
7.000000  0.646484  4.247303  1660.482
7.333333  0.650267  4.463428  1783.018
7.666667  0.654051  4.680814  1908.350
8.000000  0.657835  4.899462  2036.413
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8.333333  0.661619  5.119371  2167.148
8.666667  0.665403  5.340541  2300.500
9.000000  0.669187  5.562973  2436.419
9.333333  0.672971  5.786666  2574.859
9.666667  0.676755  6.011620  2715.777
10.00000  0.680539  6.237836  2859.136
10.33333  0.684323  6.465312  3004.899
10.66667  0.688107  6.694051  3153.032
11.00000  0.691891  6.924050  3303.506
11.33333  0.695675  7.155311  3456.293
11.66667  0.699459  7.387834  3611.366
12.00000  0.703243  7.621617  3768.701
12.33333  0.707028  7.856663  3928.276
12.66667  0.710812  8.092969  4090.071
13.00000  0.714596  8.330537  4254.066
13.33333  0.718381  8.569367  4420.244
13.66667  0.722165  8.809458  4588.588
14.00000  0.725950  9.050810  4759.084
14.33333  0.729734  9.293424  4931.717
14.66667  0.733519  9.537299  5106.474
15.00000  0.737303  9.782436  5283.343
15.33333  0.741088  10.02883  5462.314
15.66667  0.744872  10.27649  5643.375
16.00000  0.748657  10.52542  5826.518
16.33333  0.752442  10.77560  6011.734
16.66667  0.756226  11.02704  6199.014
17.00000  0.760011  11.27975  6388.351
17.33333  0.763796  11.53372  6579.739
17.66667  0.767581  11.78895  6773.172
18.00000  0.771366  12.04544  6968.643
18.33333  0.775151  12.30319  7166.147
18.66667  0.778936  12.56221  7365.679
19.00000  0.782721  12.82248  7567.236
19.33333  0.786506  13.08402  7770.813
19.66667  0.790291  13.34682  7976.407
20.00000  0.794076  13.61088  8184.015
20.33333  0.797861  13.87620  8393.634
20.66667  0.801646  14.14279  8605.260
21.00000  0.805431  14.41063  8818.894
21.33333  0.809217  14.67974  9034.531
21.66667  0.813002  14.95011  9252.171
22.00000  0.816787  15.22174  9471.813
22.33333  0.820572  15.49464  9693.455
22.66667  0.824358  15.76879  9917.097
23.00000  0.828143  16.04421  10142.74
23.33333  0.831929  16.32089  10370.38
23.66667  0.835714  16.59883  10600.01
24.00000  0.839500  16.87803  10831.65
24.33333  0.843285  17.15849  11065.28
24.66667  0.847071  17.44022  11300.91
25.00000  0.850857  17.72321  11538.54
25.33333  0.854642  18.00746  11778.17
25.66667  0.858428  18.29297  12019.81
26.00000  0.862214  18.57974  12263.44
26.33333  0.866000  18.86778  12509.07
26.66667  0.869785  19.15708  12756.71
27.00000  0.873571  19.44764  13006.35
27.33333  0.877357  19.73946  13258.00
27.66667  0.881143  20.03254  13511.66
28.00000  0.884929  20.32689  13767.33
28.33333  0.888715  20.62249  14025.00
28.66667  0.892501  20.91936  14284.69
29.00000  0.896287  21.21749  14546.40
29.33333  0.900073  21.51689  14810.12
29.66667  0.903859  21.81754  15075.86
30.00000  0.907646  22.11946  15343.63
END FTABLE 41
FTABLE     42
 91    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
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(ft)	(acres)	(acre-ft)	(cfs)	(ft/sec)	(Minutes)***
0.000000	0.567034	0.000000	0.000000		
0.333333	0.570817	0.189642	12.41798		
0.666667	0.574600	0.380545	38.95156		
1.000000	0.578383	0.572708	75.67561		
1.333333	0.582166	0.766133	120.8681		
1.666667	0.585949	0.960819	173.4294		
2.000000	0.589732	1.156766	232.5666		
2.333333	0.593515	1.353974	297.6696		
2.666667	0.597299	1.552443	368.2504		
3.000000	0.601082	1.752173	443.9073		
3.333333	0.604865	1.953164	524.3034		
3.666667	0.608649	2.155417	609.1517		
4.000000	0.612432	2.358930	698.2049		
4.333333	0.616215	2.563705	791.2479		
4.666667	0.619999	2.769740	888.0918		
5.000000	0.623782	2.977037	988.5702		
5.333333	0.627566	3.185595	1092.535		
5.666667	0.631349	3.395414	1199.854		
6.000000	0.635133	3.606495	1310.410		
6.333333	0.638916	3.818836	1424.096		
6.666667	0.642700	4.032439	1540.815		
7.000000	0.646484	4.247303	1660.482		
7.333333	0.650267	4.463428	1783.018		
7.666667	0.654051	4.680814	1908.350		
8.000000	0.657835	4.899462	2036.413		
8.333333	0.661619	5.119371	2167.148		
8.666667	0.665403	5.340541	2300.500		
9.000000	0.669187	5.562973	2436.419		
9.333333	0.672971	5.786666	2574.859		
9.666667	0.676755	6.011620	2715.777		
10.00000	0.680539	6.237836	2859.136		
10.33333	0.684323	6.465312	3004.899		
10.66667	0.688107	6.694051	3153.032		
11.00000	0.691891	6.924050	3303.506		
11.33333	0.695675	7.155311	3456.293		
11.66667	0.699459	7.387834	3611.366		
12.00000	0.703243	7.621617	3768.701		
12.33333	0.707028	7.856663	3928.276		
12.66667	0.710812	8.092969	4090.071		
13.00000	0.714596	8.330537	4254.066		
13.33333	0.718381	8.569367	4420.244		
13.66667	0.722165	8.809458	4588.588		
14.00000	0.725950	9.050810	4759.084		
14.33333	0.729734	9.293424	4931.717		
14.66667	0.733519	9.537299	5106.474		
15.00000	0.737303	9.782436	5283.343		
15.33333	0.741088	10.02883	5462.314		
15.66667	0.744872	10.27649	5643.375		
16.00000	0.748657	10.52542	5826.518		
16.33333	0.752442	10.77560	6011.734		
16.66667	0.756226	11.02704	6199.014		
17.00000	0.760011	11.27975	6388.351		
17.33333	0.763796	11.53372	6579.739		
17.66667	0.767581	11.78895	6773.172		
18.00000	0.771366	12.04544	6968.643		
18.33333	0.775151	12.30319	7166.147		
18.66667	0.778936	12.56221	7365.679		
19.00000	0.782721	12.82248	7567.236		
19.33333	0.786506	13.08402	7770.813		
19.66667	0.790291	13.34682	7976.407		
20.00000	0.794076	13.61088	8184.015		
20.33333	0.797861	13.87620	8393.634		
20.66667	0.801646	14.14279	8605.260		
21.00000	0.805431	14.41063	8818.894		
21.33333	0.809217	14.67974	9034.531		
21.66667	0.813002	14.95011	9252.171		
22.00000	0.816787	15.22174	9471.813		
22.33333	0.820572	15.49464	9693.455		
22.66667	0.824358	15.76879	9917.097		

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23.00000  0.828143  16.04421  10142.74
23.33333  0.831929  16.32089  10370.38
23.66667  0.835714  16.59883  10600.01
24.00000  0.839500  16.87803  10831.65
24.33333  0.843285  17.15849  11065.28
24.66667  0.847071  17.44022  11300.91
25.00000  0.850857  17.72321  11538.54
25.33333  0.854642  18.00746  11778.17
25.66667  0.858428  18.29297  12019.81
26.00000  0.862214  18.57974  12263.44
26.33333  0.866000  18.86778  12509.07
26.66667  0.869785  19.15708  12756.71
27.00000  0.873571  19.44764  13006.35
27.33333  0.877357  19.73946  13258.00
27.66667  0.881143  20.03254  13511.66
28.00000  0.884929  20.32689  13767.33
28.33333  0.888715  20.62249  14025.00
28.66667  0.892501  20.91936  14284.69
29.00000  0.896287  21.21749  14546.40
29.33333  0.900073  21.51689  14810.12
29.66667  0.903859  21.81754  15075.86
30.00000  0.907646  22.11946  15343.63
END FTABLE 42
FTABLE      4
  9    4
    Depth      Area    Volume  Outflow1 Velocity  Travel Time***
     (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.000000  0.000000  0.000000
0.500000  1.600000  0.400000  23.00000
1.500000  1.700000  1.090000  54.00000
2.500000  1.800000  2.320000  96.00000
3.500000  2.000000  4.540000  144.0000
5.500000  2.200000  7.830000  195.0000
7.500000  3.600000  12.26000  258.0000
9.500000  4.200000  18.19000  324.0000
10.00000  4.500000  20.00000  999.0000
END FTABLE  4
FTABLE      5
 10    4
    Depth      Area    Volume  Outflow1 Velocity  Travel Time***
     (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.000000  0.000000  0.000000
0.500000  1.600000  2.140000  251.0000
1.500000  1.700000  7.080000  520.0000
2.500000  1.800000  10.91000  640.0000
3.500000  2.000000  15.21000  768.0000
5.500000  2.200000  19.84000  880.0000
7.500000  3.600000  24.92000  960.0000
9.500000  4.200000  30.37000  1040.000
11.50000  5.900000  61.40000  1392.000
12.00000  6.500000  70.00000  9999.000
END FTABLE  5
FTABLE      6
 98    4
    Depth      Area    Volume  Outflow1 Velocity  Travel Time***
     (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.000000  0.000000  0.000000
0.010000  1.400000  0.014000  0.009000
0.200000  1.344000  0.105000  0.844000
0.400000  1.386000  0.272000  2.387000
0.600000  1.429000  0.448000  4.385000
0.800000  1.473000  0.633000  6.751000
1.000000  1.518000  0.828000  9.435000
1.200000  1.564000  1.034000  12.40300
1.400000  1.610000  1.248000  15.62900
1.600000  1.658000  1.473000  19.09500
1.800000  1.706000  1.707000  22.78500
2.000000  1.756000  1.951000  26.68600
2.200000  1.806000  2.204000  30.78800
2.400000  1.858000  2.468000  35.08000
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2.600000	1.910000	2.741000	39.62800
2.800000	1.963000	3.023000	42.46200
3.000000	2.018000	3.316000	45.11800
3.200000	2.073000	3.618000	47.62700
3.400000	2.129000	3.930000	50.00900
3.600000	2.186000	4.251000	52.28400
3.800000	2.244000	4.583000	54.46300
4.000000	2.303000	4.924000	56.55900
4.200000	2.363000	5.274000	58.57900
4.400000	2.424000	5.635000	60.53200
4.600000	2.485000	6.005000	62.42400
4.800000	2.548000	6.385000	64.26100
5.000000	2.612000	6.774000	66.04600
5.200000	2.676000	7.174000	67.78500
5.400000	2.742000	7.583000	69.47900
5.600000	2.808000	8.001000	71.13400
5.800000	2.876000	8.430000	72.75100
6.000000	2.944000	8.868000	74.33200
6.200000	3.014000	9.316000	75.88100
6.400000	3.084000	9.773000	77.39900
6.600000	3.155000	10.24000	78.88800
6.800000	3.227000	10.71700	80.34900
7.000000	3.300000	11.20400	81.78400
7.200000	3.375000	11.70000	83.19400
7.400000	3.450000	12.20600	84.58000
7.600000	3.525000	12.72200	85.94500
7.800000	3.602000	13.24800	87.28800
8.000000	3.680000	13.78300	88.61000
8.200000	3.759000	14.32800	89.91300
8.400000	3.839000	14.88200	91.19800
8.600000	3.919000	15.44700	92.46500
8.800000	4.001000	16.02100	93.71400
9.000000	4.084000	16.60500	94.94700
9.200000	4.167000	17.19800	96.16500
9.400000	4.252000	17.80100	97.36700
9.600000	4.337000	18.41400	102.7660
9.800000	4.423000	19.03700	121.6140
10.00000	4.511000	19.66900	147.9800
10.20000	4.599000	20.31100	180.0440
10.40000	4.688000	20.96300	216.8960
10.60000	4.778000	21.62400	257.9600
10.80000	4.869000	22.29500	302.8310
11.00000	4.961000	22.97600	351.2000
11.20000	5.054000	23.66700	402.8250
11.40000	5.148000	24.36700	457.5060
11.60000	5.243000	25.07700	515.0770
11.80000	5.339000	25.79700	575.3970
12.00000	5.436000	26.52600	638.3440
12.20000	5.533000	27.26500	703.8090
12.40000	5.632000	28.01400	771.6970
12.60000	5.731000	28.77300	841.9230
12.80000	5.832000	29.54100	914.4110
13.00000	5.933000	30.31900	989.0900
13.20000	6.036000	31.10700	1065.897
13.40000	6.139000	31.90400	1144.774
13.60000	6.244000	32.71100	1225.666
13.80000	6.349000	33.52800	1308.525
14.00000	6.455000	34.35500	1393.302
14.20000	6.562000	35.19100	1479.957
14.40000	6.670000	36.03700	1568.447
14.60000	6.779000	36.89200	1658.736
14.80000	6.889000	37.75800	1750.788
15.00000	7.000000	38.63300	1844.568
15.20000	7.112000	39.51800	1940.046
15.40000	7.225000	40.41200	2037.191
15.60000	7.339000	41.31600	2135.975
15.80000	7.453000	42.23000	2236.371
16.00000	7.569000	43.15400	2338.352
16.20000	7.685000	44.08700	2441.896
16.40000	7.803000	45.03000	2546.977

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  16.60000  7.921000  45.98300  2653.573
  16.80000  8.041000  46.94600  2761.664
  17.00000  8.161000  47.91800  2871.229
  17.20000  8.283000  48.90000  2982.247
  17.40000  8.405000  49.89100  3094.699
  17.60000  8.528000  50.89300  3208.569
  17.80000  8.652000  51.90400  3323.837
  18.00000  8.777000  52.92400  3440.487
  18.20000  8.903000  53.95500  3558.503
  18.40000  9.030000  54.99500  3677.869
  18.60000  9.158000  56.04500  3798.569
  18.80000  9.287000  57.10400  3920.590
  19.00000  9.417000  58.17400  4043.916
  19.20000  9.548000  59.25300  4168.534
  END FTABLE  6
  FTABLE      7
   11    4
     Depth      Area    Volume  Outflow1 Velocity  Travel Time***
      (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
  0.000000  0.000000  0.000000  0.000000
  0.500000  1.600000  0.030000  2.850000
  1.500000  1.700000  0.080000  4.270000
  2.500000  1.800000  0.170000  5.710000
  3.500000  2.000000  0.290000  6.840000
  5.500000  2.200000  0.450000  7.760000
  7.500000  3.600000  0.650000  13.30000
  9.500000  4.200000  0.900000  15.99000
  11.50000  5.900000  1.220000  18.17000
  16.50000  7.600000  1.600000  20.06000
  17.50000  8.000000  1.800000  999.0000
  END FTABLE  7
  FTABLE      8
    9    4
     Depth      Area    Volume  Outflow1 Velocity  Travel Time***
      (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
  0.000000  0.000000  0.000000  0.000000
  0.500000  1.600000  0.050000  2.100000
  1.500000  1.700000  0.180000  5.080000
  2.500000  1.800000  0.420000  8.720000
  3.500000  2.000000  0.770000  12.92000
  5.500000  2.200000  1.230000  29.14000
  7.500000  3.600000  1.800000  36.96000
  9.500000  4.200000  2.490000  43.21000
  10.00000  4.500000  2.700000  999.0000
  END FTABLE  8
END FTABLES

EXT SOURCES
<-Volume-> <Member> SsysSgap<--Mult-->Tran <-Target vols> <-Grp> <-Member->  ***
<Name>   # <Name> # tem strg<-factor->strg <Name>   #   #        <Name> # #  ***
WDM      2 PREC     ENGL    1.091          PERLND   1 999 EXTNL  PREC
WDM      2 PREC     ENGL    1.091          IMPLND   1 999 EXTNL  PREC
WDM      1 EVAP     ENGL    1              PERLND   1 999 EXTNL  PETINP
WDM      1 EVAP     ENGL    1              IMPLND   1 999 EXTNL  PETINP
WDM     22 IRRG     ENGL    0.7       SAME PERLND  58     EXTNL  SURLI
WDM     22 IRRG     ENGL    0.7       SAME PERLND  41     EXTNL  SURLI
WDM      1 EVAP     ENGL    1              RCHRES   4     EXTNL  POTEV
WDM      1 EVAP     ENGL    1              RCHRES   5     EXTNL  POTEV
WDM      1 EVAP     ENGL    1              RCHRES   6     EXTNL  POTEV
WDM      1 EVAP     ENGL    1              RCHRES   7     EXTNL  POTEV
WDM      1 EVAP     ENGL    1              RCHRES   8     EXTNL  POTEV

END EXT SOURCES

EXT TARGETS
<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Volume-> <Member> Tsys Tgap Amd ***
<Name>   #        <Name> # #<-factor->strg <Name>   # <Name>    tem strg strg***
RCHRES   9 HYDR   RO     1 1        1      WDM   1000 FLOW     ENGL      REPL
RCHRES   9 HYDR   STAGE  1 1        1      WDM   1001 STAG     ENGL      REPL
COPY   526 OUTPUT MEAN   1 1     12.1      WDM    526 FLOW     ENGL      REPL
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RCHRES  20 HYDR   RO     1 1         1      WDM   1004 FLOW     ENGL       REPL
RCHRES  20 HYDR   STAGE  1 1         1      WDM   1005 STAG     ENGL       REPL
COPY   524 OUTPUT MEAN   1 1      12.1      WDM    524 FLOW     ENGL       REPL
RCHRES  24 HYDR   RO     1 1         1      WDM   1008 FLOW     ENGL       REPL
RCHRES  24 HYDR   STAGE  1 1         1      WDM   1009 STAG     ENGL       REPL
COPY   523 OUTPUT MEAN   1 1      12.1      WDM    523 FLOW     ENGL       REPL
RCHRES  26 HYDR   RO     1 1         1      WDM   1012 FLOW     ENGL       REPL
RCHRES  26 HYDR   STAGE  1 1         1      WDM   1013 STAG     ENGL       REPL
COPY   522 OUTPUT MEAN   1 1      12.1      WDM    522 FLOW     ENGL       REPL
RCHRES   1 HYDR   RO     1 1         1      WDM   1016 FLOW     ENGL       REPL
RCHRES   1 HYDR   STAGE  1 1         1      WDM   1017 STAG     ENGL       REPL
COPY   528 OUTPUT MEAN   1 1      12.1      WDM    528 FLOW     ENGL       REPL
COPY   527 OUTPUT MEAN   1 1      12.1      WDM    527 FLOW     ENGL       REPL
RCHRES  10 HYDR   RO     1 1         1      WDM   1020 FLOW     ENGL       REPL
RCHRES  10 HYDR   STAGE  1 1         1      WDM   1021 STAG     ENGL       REPL
COPY   525 OUTPUT MEAN   1 1      12.1      WDM    525 FLOW     ENGL       REPL
RCHRES  25 HYDR   RO     1 1         1      WDM   1030 FLOW     ENGL       REPL
RCHRES  25 HYDR   STAGE  1 1         1      WDM   1031 STAG     ENGL       REPL
COPY   521 OUTPUT MEAN   1 1      12.1      WDM    521 FLOW     ENGL       REPL
RCHRES  31 HYDR   RO     1 1         1      WDM   1034 FLOW     ENGL       REPL
RCHRES  31 HYDR   STAGE  1 1         1      WDM   1035 STAG     ENGL       REPL
COPY   520 OUTPUT MEAN   1 1      12.1      WDM    520 FLOW     ENGL       REPL
RCHRES  32 HYDR   RO     1 1         1      WDM   1040 FLOW     ENGL       REPL
RCHRES  32 HYDR   STAGE  1 1         1      WDM   1041 STAG     ENGL       REPL
COPY   517 OUTPUT MEAN   1 1      12.1      WDM    517 FLOW     ENGL       REPL
RCHRES  34 HYDR   RO     1 1         1      WDM   1044 FLOW     ENGL       REPL
RCHRES  34 HYDR   STAGE  1 1         1      WDM   1045 STAG     ENGL       REPL
COPY   506 OUTPUT MEAN   1 1      12.1      WDM    506 FLOW     ENGL       REPL
RCHRES  28 HYDR   RO     1 1         1      WDM   1046 FLOW     ENGL       REPL
RCHRES  28 HYDR   STAGE  1 1         1      WDM   1047 STAG     ENGL       REPL
COPY   507 OUTPUT MEAN   1 1      12.1      WDM    507 FLOW     ENGL       REPL
COPY   508 OUTPUT MEAN   1 1      12.1      WDM    508 FLOW     ENGL       REPL
COPY   513 OUTPUT MEAN   1 1      12.1      WDM    513 FLOW     ENGL       REPL
RCHRES  36 HYDR   RO     1 1         1      WDM   1066 FLOW     ENGL       REPL
RCHRES  36 HYDR   STAGE  1 1         1      WDM   1067 STAG     ENGL       REPL
COPY   505 OUTPUT MEAN   1 1      12.1      WDM    505 FLOW     ENGL       REPL
RCHRES  15 HYDR   RO     1 1         1      WDM   1068 FLOW     ENGL       REPL
RCHRES  15 HYDR   STAGE  1 1         1      WDM   1069 STAG     ENGL       REPL
COPY   511 OUTPUT MEAN   1 1      12.1      WDM    511 FLOW     ENGL       REPL
RCHRES  38 HYDR   RO     1 1         1      WDM   1070 FLOW     ENGL       REPL
RCHRES  38 HYDR   STAGE  1 1         1      WDM   1071 STAG     ENGL       REPL
COPY   503 OUTPUT MEAN   1 1      12.1      WDM    503 FLOW     ENGL       REPL
COPY   512 OUTPUT MEAN   1 1      12.1      WDM    512 FLOW     ENGL       REPL
COPY   510 OUTPUT MEAN   1 1      12.1      WDM    510 FLOW     ENGL       REPL
RCHRES  40 HYDR   RO     1 1         1      WDM   1076 FLOW     ENGL       REPL
RCHRES  40 HYDR   STAGE  1 1         1      WDM   1077 STAG     ENGL       REPL
COPY   502 OUTPUT MEAN   1 1      12.1      WDM    502 FLOW     ENGL       REPL
RCHRES  42 HYDR   RO     1 1         1      WDM   1078 FLOW     ENGL       REPL
RCHRES  42 HYDR   STAGE  1 1         1      WDM   1079 STAG     ENGL       REPL
COPY   501 OUTPUT MEAN   1 1      12.1      WDM    501 FLOW     ENGL       REPL
COPY   509 OUTPUT MEAN   1 1      12.1      WDM    509 FLOW     ENGL       REPL
END EXT TARGETS

MASS-LINK
<Volume>   <-Grp> <-Member-><--Mult-->     <Target>       <-Grp> <-Member->***
<Name>             <Name> # #<-factor->     <Name>                <Name> # #***
  MASS-LINK        2
PERLND     PWATER SURO       0.083333      RCHRES         INFLOW IVOL
  END MASS-LINK    2

  MASS-LINK        3
PERLND     PWATER IFWO       0.083333      RCHRES         INFLOW IVOL
  END MASS-LINK    3

  MASS-LINK        5
IMPLND     IWATER SURO       0.083333      RCHRES         INFLOW IVOL
  END MASS-LINK    5

  MASS-LINK        6
RCHRES     ROFLOW                          RCHRES         INFLOW
```

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```
  END MASS-LINK    6

  MASS-LINK       12
PERLND     PWATER SURO       0.083333      COPY           INPUT  MEAN
  END MASS-LINK   12

  MASS-LINK       13
PERLND     PWATER IFWO       0.083333      COPY           INPUT  MEAN
  END MASS-LINK   13

  MASS-LINK       15
IMPLND     IWATER SURO       0.083333      COPY           INPUT  MEAN
  END MASS-LINK   15

  MASS-LINK       16
RCHRES     ROFLOW                          COPY           INPUT  MEAN
  END MASS-LINK   16


END MASS-LINK

END RUN
```

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Mitigated UCI File

```
RUN

GLOBAL
  WWHM4 model simulation
  START       1964 10 01        END    2004 09 30
  RUN INTERP OUTPUT LEVEL    3    0
  RESUME     0 RUN     1                    UNIT SYSTEM     1
END GLOBAL

FILES
<File>  <Un#>   <-----------File Name------------------------------>***
<-ID->                                                              ***
WDM         26   Folsom SOI_networked_ver 9-10a.wdm
MESSU       25   MitFolsom SOI_networked_ver 9-10a.MES
            27   MitFolsom SOI_networked_ver 9-10a.L61
            28   MitFolsom SOI_networked_ver 9-10a.L62
            30   POCFolsom SOI_networked_ver 9-10a1.dat
            31   POCFolsom SOI_networked_ver 9-10a2.dat
            32   POCFolsom SOI_networked_ver 9-10a3.dat
            33   POCFolsom SOI_networked_ver 9-10a4.dat
            34   POCFolsom SOI_networked_ver 9-10a5.dat
            35   POCFolsom SOI_networked_ver 9-10a6.dat
            36   POCFolsom SOI_networked_ver 9-10a7.dat
            37   POCFolsom SOI_networked_ver 9-10a8.dat
            38   POCFolsom SOI_networked_ver 9-10a9.dat
            39   POCFolsom SOI_networked_ver 9-10a10.dat
            40   POCFolsom SOI_networked_ver 9-10a11.dat
            41   POCFolsom SOI_networked_ver 9-10a12.dat
            42   POCFolsom SOI_networked_ver 9-10a13.dat
            43   POCFolsom SOI_networked_ver 9-10a14.dat
            44   POCFolsom SOI_networked_ver 9-10a15.dat
            45   POCFolsom SOI_networked_ver 9-10a16.dat
            46   POCFolsom SOI_networked_ver 9-10a17.dat
            47   POCFolsom SOI_networked_ver 9-10a18.dat
            48   POCFolsom SOI_networked_ver 9-10a19.dat
            49   POCFolsom SOI_networked_ver 9-10a20.dat
            50   POCFolsom SOI_networked_ver 9-10a21.dat
            51   POCFolsom SOI_networked_ver 9-10a22.dat
END FILES

OPN SEQUENCE
    INGRP              INDELT 00:60
      PERLND      51
      PERLND      59
      IMPLND       3
      PERLND      58
      PERLND      50
      IMPLND       2
      PERLND      60
      PERLND      52
      IMPLND       4
      PERLND      49
      PERLND      42
      PERLND      34
      PERLND      17
      PERLND      25
      PERLND      41
      PERLND      57
      IMPLND       1
      PERLND      43
      PERLND      35
      PERLND      33
      PERLND      27
      PERLND      19
      RCHRES       1
      RCHRES       2
      RCHRES       3
      RCHRES       4
```

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```
RCHRES       5
RCHRES       6
RCHRES       7
RCHRES       8
RCHRES       9
RCHRES      10
RCHRES      11
RCHRES      12
RCHRES      13
RCHRES      14
RCHRES      15
RCHRES      16
RCHRES      17
RCHRES      18
RCHRES      19
RCHRES      20
RCHRES      21
RCHRES      22
RCHRES      23
RCHRES      24
RCHRES      25
RCHRES      26
RCHRES      27
RCHRES      28
RCHRES      29
RCHRES      30
RCHRES      31
RCHRES      32
RCHRES      33
RCHRES      34
RCHRES      35
RCHRES      36
RCHRES      37
RCHRES      38
RCHRES      39
RCHRES      40
RCHRES      41
RCHRES      42
RCHRES      43
RCHRES      44
RCHRES      45
RCHRES      46
RCHRES      47
RCHRES      48
RCHRES      49
RCHRES      50
RCHRES      51
RCHRES      52
RCHRES      53
RCHRES      54
RCHRES      55
RCHRES      56
RCHRES      57
RCHRES      58
RCHRES      59
RCHRES      60
RCHRES      61
RCHRES      62
RCHRES      63
RCHRES      64
RCHRES      65
RCHRES      66
RCHRES      67
RCHRES      68
RCHRES      69
RCHRES      70
RCHRES      71
COPY         8
COPY       508
COPY        13
```

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```
      COPY       513
      COPY        10
      COPY       510
      COPY         9
      COPY       509
      COPY        26
      COPY       526
      COPY        28
      COPY       528
      COPY        12
      COPY       512
      COPY        27
      COPY       527
      COPY        11
      COPY       511
      COPY        24
      COPY       524
      COPY        25
      COPY       525
      COPY        23
      COPY       523
      COPY         7
      COPY       507
      COPY        22
      COPY       522
      COPY        21
      COPY       521
      COPY        20
      COPY       520
      COPY        17
      COPY       517
      COPY         6
      COPY       506
      COPY         5
      COPY       505
      COPY         3
      COPY       503
      COPY         2
      COPY       502
      COPY         1
      COPY       501
      DISPLY       8
      DISPLY      13
      DISPLY      10
      DISPLY       9
      DISPLY      26
      DISPLY      28
      DISPLY      12
      DISPLY      27
      DISPLY      11
      DISPLY      24
      DISPLY      25
      DISPLY      23
      DISPLY       7
      DISPLY      22
      DISPLY      21
      DISPLY      20
      DISPLY      17
      DISPLY       6
      DISPLY       5
      DISPLY       3
      DISPLY       2
      DISPLY       1
    END INGRP
END OPN SEQUENCE
DISPLY
  DISPLY-INFO1
    # -  #<----------Title----------->***TRAN PIVL DIG1 FIL1  PYR DIG2 FIL2 YRND
    8        HMB 8b                     MAX                   1    2   37    9
   13        HMB 13                     MAX                   1    2   42    9
```

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```
   10        HMB 10                    MAX                  1    2   39    9
    9        HMB 9                     MAX                  1    2   38    9
   26        POC 26                    MAX                  1    2   55    9
   28        POC 28                    MAX                  1    2   57    9
   12        DB 2                      MAX                  1    2   41    9
   27        DB 9 (was 10)             MAX                  1    2   56    9
   11        POC 11                    MAX                  1    2   40    9
   24        POC 24                    MAX                  1    2   53    9
   25        POC 25                    MAX                  1    2   54    9
   23        POC 23                    MAX                  1    2   52    9
    7        POC 7                     MAX                  1    2   36    9
   22        DB 7 (was 8)              MAX                  1    2   51    9
   21        DB 6 (was 7)              MAX                  1    2   50    9
   20        POC 20                    MAX                  1    2   49    9
   17        POC 17/18                 MAX                  1    2   46    9
    6        POC 6                     MAX                  1    2   35    9
    5        POC 5                     MAX                  1    2   34    9
    3        POC 3/4                   MAX                  1    2   32    9
    2        POC 2                     MAX                  1    2   31    9
    1        POC 1                     MAX                  1    2   30    9
  END DISPLY-INFO1
END DISPLY
COPY
  TIMESERIES
    # -  #  NPT  NMN ***
    1         1    1
    8         1    1
  508         1    1
   13         1    1
  513         1    1
   10         1    1
  510         1    1
    9         1    1
  509         1    1
   26         1    1
  526         1    1
   28         1    1
  528         1    1
   12         1    1
  512         1    1
   27         1    1
  527         1    1
   11         1    1
  511         1    1
   24         1    1
  524         1    1
   25         1    1
  525         1    1
   23         1    1
  523         1    1
    7         1    1
  507         1    1
   22         1    1
  522         1    1
   21         1    1
  521         1    1
   20         1    1
  520         1    1
   17         1    1
  517         1    1
    6         1    1
  506         1    1
    5         1    1
  505         1    1
    3         1    1
  503         1    1
    2         1    1
  502         1    1
  501         1    1
  END TIMESERIES
```

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```
END COPY
GENER
  OPCODE
    #    # OPCD ***
  END OPCODE
  PARM
    #    #         K ***
  END PARM
END GENER
PERLND
  GEN-INFO
    <PLS ><-------Name------->NBLKS   Unit-systems   Printer ***
    # -  #                          User  t-series Engl Metr ***
                                        in  out              ***
   51     D,Grass,Steep(2-5%)     1    1    1    1   27    0
   59     D,Urban,Steep(2-5%)     1    1    1    1   27    0
   58     D,Urban,Mod (1-2%)      1    1    1    1   27    0
   50     D,Grass,Mod (1-2%)      1    1    1    1   27    0
   60     D,Urban,VSteep(>5%)     1    1    1    1   27    0
   52     D,Grass,VSteep(>5%)     1    1    1    1   27    0
   49     D,Grass,Flat(0-1%)      1    1    1    1   27    0
   42     C,Urban,Mod (1-2%)      1    1    1    1   27    0
   34     C,Grass,Mod (1-2%)      1    1    1    1   27    0
   17     B,Grass,Flat(0-1%)      1    1    1    1   27    0
   25     B,Urban,Flat(0-1%)      1    1    1    1   27    0
   41     C,Urban,Flat(0-1%)      1    1    1    1   27    0
   57     D,Urban,Flat(0-1%)      1    1    1    1   27    0
   43     C,Urban,Steep(2-5%)     1    1    1    1   27    0
   35     C,Grass,Steep(2-5%)     1    1    1    1   27    0
   33     C,Grass,Flat(0-1%)      1    1    1    1   27    0
   27     B,Urban,Steep(2-5%)     1    1    1    1   27    0
   19     B,Grass,Steep(2-5%)     1    1    1    1   27    0
  END GEN-INFO
  *** Section PWATER***

  ACTIVITY
    <PLS > ************ Active Sections ******************************
    # -  # ATMP SNOW PWAT  SED  PST  PWG PQAL MSTL PEST NITR PHOS TRAC ***
   51         0    0    1    0    0    0    0    0    0    0    0    0
   59         0    0    1    0    0    0    0    0    0    0    0    0
   58         0    0    1    0    0    0    0    0    0    0    0    0
   50         0    0    1    0    0    0    0    0    0    0    0    0
   60         0    0    1    0    0    0    0    0    0    0    0    0
   52         0    0    1    0    0    0    0    0    0    0    0    0
   49         0    0    1    0    0    0    0    0    0    0    0    0
   42         0    0    1    0    0    0    0    0    0    0    0    0
   34         0    0    1    0    0    0    0    0    0    0    0    0
   17         0    0    1    0    0    0    0    0    0    0    0    0
   25         0    0    1    0    0    0    0    0    0    0    0    0
   41         0    0    1    0    0    0    0    0    0    0    0    0
   57         0    0    1    0    0    0    0    0    0    0    0    0
   43         0    0    1    0    0    0    0    0    0    0    0    0
   35         0    0    1    0    0    0    0    0    0    0    0    0
   33         0    0    1    0    0    0    0    0    0    0    0    0
   27         0    0    1    0    0    0    0    0    0    0    0    0
   19         0    0    1    0    0    0    0    0    0    0    0    0
  END ACTIVITY

  PRINT-INFO
    <PLS > ***************** Print-flags ***************************** PIVL  PYR
    # -  # ATMP SNOW PWAT  SED  PST  PWG PQAL MSTL PEST NITR PHOS TRAC  *********
   51         0    0    4    0    0    0    0    0    0    0    0    0    1    9
   59         0    0    4    0    0    0    0    0    0    0    0    0    1    9
   58         0    0    4    0    0    0    0    0    0    0    0    0    1    9
   50         0    0    4    0    0    0    0    0    0    0    0    0    1    9
   60         0    0    4    0    0    0    0    0    0    0    0    0    1    9
   52         0    0    4    0    0    0    0    0    0    0    0    0    1    9
   49         0    0    4    0    0    0    0    0    0    0    0    0    1    9
   42         0    0    4    0    0    0    0    0    0    0    0    0    1    9
   34         0    0    4    0    0    0    0    0    0    0    0    0    1    9
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 17          0    0    4    0    0    0    0    0    0    0    0    0    1    9
 25          0    0    4    0    0    0    0    0    0    0    0    0    1    9
 41          0    0    4    0    0    0    0    0    0    0    0    0    1    9
 57          0    0    4    0    0    0    0    0    0    0    0    0    1    9
 43          0    0    4    0    0    0    0    0    0    0    0    0    1    9
 35          0    0    4    0    0    0    0    0    0    0    0    0    1    9
 33          0    0    4    0    0    0    0    0    0    0    0    0    1    9
 27          0    0    4    0    0    0    0    0    0    0    0    0    1    9
 19          0    0    4    0    0    0    0    0    0    0    0    0    1    9
END PRINT-INFO

PWAT-PARM1
  <PLS >  PWATER variable monthly parameter value flags  ***
  # -   # CSNO RTOP UZFG  VCS  VUZ  VNN VIFW VIRC  VLE INFC  HWT ***
 51          0    0    0    1    0    0    0    0    1    0    0
 59          0    0    0    1    0    0    0    0    1    0    0
 58          0    0    0    1    0    0    0    0    1    0    0
 50          0    0    0    1    0    0    0    0    1    0    0
 60          0    0    0    1    0    0    0    0    1    0    0
 52          0    0    0    1    0    0    0    0    1    0    0
 49          0    0    0    1    0    0    0    0    1    0    0
 42          0    0    0    1    0    0    0    0    1    0    0
 34          0    0    0    1    0    0    0    0    1    0    0
 17          0    0    0    1    0    0    0    0    1    0    0
 25          0    0    0    1    0    0    0    0    1    0    0
 41          0    0    0    1    0    0    0    0    1    0    0
 57          0    0    0    1    0    0    0    0    1    0    0
 43          0    0    0    1    0    0    0    0    1    0    0
 35          0    0    0    1    0    0    0    0    1    0    0
 33          0    0    0    1    0    0    0    0    1    0    0
 27          0    0    0    1    0    0    0    0    1    0    0
 19          0    0    0    1    0    0    0    0    1    0    0
END PWAT-PARM1

PWAT-PARM2
  <PLS >      PWATER input info: Part 2          ***
  # -   # ***FOREST      LZSN     INFILT      LSUR     SLSUR     KVARY      AGWRC
 51             0       4.3      0.025       400      0.05         3       0.92
 59             0      4.35      0.015       400      0.05         3       0.92
 58             0       4.4      0.018       400      0.02         3       0.92
 50             0      4.35      0.028       400      0.02         3       0.92
 60             0      4.25       0.01       350       0.1         3       0.92
 52             0       4.2       0.02       350       0.1         3       0.92
 49             0       4.4       0.03       400      0.01         3       0.92
 42             0       4.4       0.03       400      0.02         3       0.92
 34             0      4.45      0.043       400      0.02         3       0.92
 17             0       4.7      0.065       400      0.01         3       0.92
 25             0       4.6       0.05       400      0.01         3       0.92
 41             0      4.45      0.035       400      0.01         3       0.92
 57             0      4.45       0.02       400      0.01         3       0.92
 43             0      4.35      0.025       400      0.05         3       0.92
 35             0       4.4       0.04       400      0.05         3       0.92
 33             0       4.5      0.045       400      0.01         3       0.92
 27             0       4.5       0.04       400      0.05         3       0.92
 19             0       4.6      0.055       400      0.05         3       0.92
END PWAT-PARM2

PWAT-PARM3
  <PLS >      PWATER input info: Part 3          ***
  # -   # ***PETMAX    PETMIN    INFEXP    INFILD    DEEPFR    BASETP    AGWETP
 51            40        35         2         2         0         0      0.05
 59            40        35         2         2         0         0      0.05
 58            40        35         2         2         0         0      0.05
 50            40        35         2         2         0         0      0.05
 60            40        35         2         2         0         0      0.05
 52            40        35         2         2         0         0      0.05
 49            40        35         2         2         0         0      0.05
 42            40        35         2         2         0         0      0.05
 34            40        35         2         2         0         0      0.05
 17            40        35         2         2         0         0      0.05
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 25              40          35          2           2           0           0       0.05
 41              40          35          2           2           0           0       0.05
 57              40          35          2           2           0           0       0.05
 43              40          35          2           2           0           0       0.05
 35              40          35          2           2           0           0       0.05
 33              40          35          2           2           0           0       0.05
 27              40          35          2           2           0           0       0.05
 19              40          35          2           2           0           0       0.05
END PWAT-PARM3
PWAT-PARM4
  <PLS >     PWATER input info: Part 4                                          ***
  # -  #      CEPSC       UZSN       NSUR      INTFW       IRC      LZETP      ***
 51               0       0.27       0.25        0.6       0.45          0
 59               0       0.27       0.25       0.45       0.37          0
 58               0       0.28       0.25       0.48       0.38          0
 50               0       0.28       0.25       0.65       0.48          0
 60               0       0.25       0.25       0.35       0.35          0
 52               0       0.25       0.25        0.5        0.4          0
 49               0        0.3       0.25        0.7        0.5          0
 42               0       0.28       0.25       0.48       0.38          0
 34               0       0.28       0.25       0.65       0.48          0
 17               0       0.35       0.25        1.5        0.5          0
 25               0       0.35       0.25          1        0.4          0
 41               0        0.3       0.25        0.5        0.4          0
 57               0        0.3       0.25        0.5        0.4          0
 43               0       0.27       0.25       0.45       0.37          0
 35               0       0.27       0.25        0.6       0.45          0
 33               0        0.3       0.25        0.7        0.5          0
 27               0       0.32       0.25        0.8       0.37          0
 19               0       0.32       0.25        1.4       0.45          0
END PWAT-PARM4
MON-LZETPARM
  <PLS >      PWATER input info: Part 3          ***
  # -  #  JAN  FEB  MAR  APR  MAY  JUN  JUL  AUG  SEP  OCT  NOV  DEC  ***
 51      0.4  0.4  0.4 0.45  0.5 0.55 0.55 0.55 0.55 0.55 0.45  0.4
 59      0.5  0.5  0.5  0.6 0.65 0.65 0.65 0.65 0.65 0.65 0.55  0.5
 58      0.5  0.5  0.5  0.6 0.65 0.65 0.65 0.65 0.65 0.65 0.55  0.5
 50      0.4  0.4  0.4 0.45  0.5 0.55 0.55 0.55 0.55 0.55 0.45  0.4
 60      0.5  0.5  0.5  0.6 0.65 0.65 0.65 0.65 0.65 0.65 0.55  0.5
 52      0.4  0.4  0.4 0.45  0.5 0.55 0.55 0.55 0.55 0.55 0.45  0.4
 49      0.4  0.4  0.4 0.45  0.5 0.55 0.55 0.55 0.55 0.55 0.45  0.4
 42      0.5  0.5  0.5  0.6 0.65 0.65 0.65 0.65 0.65 0.65 0.55  0.5
 34      0.4  0.4  0.4 0.45  0.5 0.55 0.55 0.55 0.55 0.55 0.45  0.4
 17      0.4  0.4  0.4 0.45  0.5 0.55 0.55 0.55 0.55 0.55 0.45  0.4
 25      0.5  0.5  0.5  0.6 0.65 0.65 0.65 0.65 0.65 0.65 0.55  0.5
 41      0.5  0.5  0.5  0.6 0.65 0.65 0.65 0.65 0.65 0.65 0.55  0.5
 57      0.5  0.5  0.5  0.6 0.65 0.65 0.65 0.65 0.65 0.65 0.55  0.5
 43      0.5  0.5  0.5  0.6 0.65 0.65 0.65 0.65 0.65 0.65 0.55  0.5
 35      0.4  0.4  0.4 0.45  0.5 0.55 0.55 0.55 0.55 0.55 0.45  0.4
 33      0.4  0.4  0.4 0.45  0.5 0.55 0.55 0.55 0.55 0.55 0.45  0.4
 27      0.5  0.5  0.5  0.6 0.65 0.65 0.65 0.65 0.65 0.65 0.55  0.5
 19      0.4  0.4  0.4 0.45  0.5 0.55 0.55 0.55 0.55 0.55 0.45  0.4
END MON-LZETPARM
MON-INTERCEP
  <PLS >      PWATER input info: Part 3          ***
  # -  #  JAN  FEB  MAR  APR  MAY  JUN  JUL  AUG  SEP  OCT  NOV  DEC  ***
 51     0.12 0.12 0.12 0.11  0.1  0.1  0.1  0.1  0.1  0.1 0.11 0.12
 59     0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11
 58     0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11
 50     0.12 0.12 0.12 0.11  0.1  0.1  0.1  0.1  0.1  0.1 0.11 0.12
 60     0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11
 52     0.12 0.12 0.12 0.11  0.1  0.1  0.1  0.1  0.1  0.1 0.11 0.12
 49     0.12 0.12 0.12 0.11  0.1  0.1  0.1  0.1  0.1  0.1 0.11 0.12
 42     0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11
 34     0.12 0.12 0.12 0.11  0.1  0.1  0.1  0.1  0.1  0.1 0.11 0.12
 17     0.12 0.12 0.12 0.11  0.1  0.1  0.1  0.1  0.1  0.1 0.11 0.12
 25     0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11
 41     0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11
 57     0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11
 43     0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11
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   35      0.12 0.12 0.12 0.11  0.1  0.1  0.1  0.1  0.1  0.1 0.11 0.12
   33      0.12 0.12 0.12 0.11  0.1  0.1  0.1  0.1  0.1  0.1 0.11 0.12
   27      0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11
   19      0.12 0.12 0.12 0.11  0.1  0.1  0.1  0.1  0.1  0.1 0.11 0.12
  END MON-INTERCEP

  PWAT-STATE1
    <PLS > *** Initial conditions at start of simulation
               ran from 1990 to end of 1992 (pat 1-11-95) RUN 21 ***
    # -  # ***  CEPS      SURS       UZS       IFWS       LZS       AGWS       GWVS
   51             0         0      0.15          0         4       0.05          0
   59             0         0      0.15          0         4       0.05          0
   58             0         0      0.15          0         4       0.05          0
   50             0         0      0.15          0         4       0.05          0
   60             0         0      0.15          0         4       0.05          0
   52             0         0      0.15          0         4       0.05          0
   49             0         0      0.15          0         4       0.05          0
   42             0         0      0.15          0         4       0.05          0
   34             0         0      0.15          0         4       0.05          0
   17             0         0      0.15          0         4       0.05          0
   25             0         0      0.15          0         4       0.05          0
   41             0         0      0.15          0         4       0.05          0
   57             0         0      0.15          0         4       0.05          0
   43             0         0      0.15          0         4       0.05          0
   35             0         0      0.15          0         4       0.05          0
   33             0         0      0.15          0         4       0.05          0
   27             0         0      0.15          0         4       0.05          0
   19             0         0      0.15          0         4       0.05          0
  END PWAT-STATE1

END PERLND

IMPLND
  GEN-INFO
    <PLS ><-------Name-------->  Unit-systems   Printer ***
    # -  #                     User  t-series Engl Metr ***
                                   in  out           ***
    3     Imperv,Steep(2-5%)      1    1    1   27    0
    2     Imperv,Mod (1-2%)       1    1    1   27    0
    4     Imperv,VSteep(>5%)      1    1    1   27    0
    1     Imperv,Flat(0-1%)       1    1    1   27    0
  END GEN-INFO
  *** Section IWATER***

  ACTIVITY
    <PLS > ************ Active Sections ******************************
    # -  # ATMP SNOW IWAT  SLD  IWG IQAL   ***
    3         0    0    1    0    0    0
    2         0    0    1    0    0    0
    4         0    0    1    0    0    0
    1         0    0    1    0    0    0
  END ACTIVITY

  PRINT-INFO
    <ILS > ******** Print-flags ******** PIVL  PYR
    # -  # ATMP SNOW IWAT  SLD  IWG IQAL    *********
    3         0    0    4    0    0    0    1    9
    2         0    0    4    0    0    0    1    9
    4         0    0    4    0    0    0    1    9
    1         0    0    4    0    0    0    1    9
  END PRINT-INFO

  IWAT-PARM1
    <PLS >  IWATER variable monthly parameter value flags  ***
    # -  # CSNO RTOP  VRS  VNN RTLI     ***
    3         0    0    0    0    0
    2         0    0    0    0    0
    4         0    0    0    0    0
    1         0    0    0    0    0
  END IWAT-PARM1
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  IWAT-PARM2
    <PLS >       IWATER input info: Part 2         ***
    # -  # ***  LSUR     SLSUR      NSUR     RETSC
    3            100      0.05      0.05     0.095
    2            100      0.02      0.05       0.1
    4            100       0.1      0.05      0.09
    1            100      0.01      0.05       0.1
  END IWAT-PARM2

  IWAT-PARM3
    <PLS >       IWATER input info: Part 3         ***
    # -  # ***PETMAX    PETMIN
    3              0         0
    2              0         0
    4              0         0
    1              0         0
  END IWAT-PARM3

  IWAT-STATE1
    <PLS > *** Initial conditions at start of simulation
    # -  # ***  RETS      SURS
    3              0         0
    2              0         0
    4              0         0
    1              0         0
  END IWAT-STATE1

END IMPLND

SCHEMATIC
<-Source->                 <--Area-->     <-Target->   MBLK    ***
<Name>   #                 <-factor->     <Name>   #   Tbl#    ***
SB 21***
PERLND  51                    13.25     RCHRES   1      2
PERLND  51                    13.25     RCHRES   1      3
PERLND  59                    69.15     RCHRES   1      2
PERLND  59                    69.15     RCHRES   1      3
IMPLND   3                    47.85     RCHRES   1      5
Open space***
PERLND  51                    30.73     RCHRES  32      2
PERLND  51                    30.73     RCHRES  32      3
SB 7***
PERLND  59                    49.36     RCHRES   2      2
PERLND  59                    49.36     RCHRES   2      3
PERLND  51                     6.15     RCHRES   2      2
PERLND  51                     6.15     RCHRES   2      3
IMPLND   3                    46.69     RCHRES   2      5
Basin  4***
PERLND  51                   252.32     RCHRES  47      2
PERLND  51                   252.32     RCHRES  47      3
SB 8***
PERLND  58                     3.13     RCHRES   3      2
PERLND  58                     3.13     RCHRES   3      3
PERLND  50                     0.47     RCHRES   3      2
PERLND  50                     0.47     RCHRES   3      3
IMPLND   2                     4.75     RCHRES   3      5
SB 57 (partial)***
PERLND  50                     5.38     RCHRES  50      2
PERLND  50                     5.38     RCHRES  50      3
SB 22***
PERLND  58                    74.08     RCHRES   4      2
PERLND  58                    74.08     RCHRES   4      3
PERLND  50                    15.14     RCHRES   4      2
PERLND  50                    15.14     RCHRES   4      3
IMPLND   2                    88.98     RCHRES   4      5
SB 57 (partial)***
PERLND  50                    14.19     RCHRES  55      2
PERLND  50                    14.19     RCHRES  55      3
Offsite (SB 94 95 96)***
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PERLND  50                    71.54     RCHRES  52      2
PERLND  50                    71.54     RCHRES  52      3
SB 17***
PERLND  59                    44.03     RCHRES   5      2
PERLND  59                    44.03     RCHRES   5      3
PERLND  51                     6.47     RCHRES   5      2
PERLND  51                     6.47     RCHRES   5      3
IMPLND   3                    21.85     RCHRES   5      5
SB 48 62 70 85***
PERLND  49                    30.86     RCHRES  60      2
PERLND  49                    30.86     RCHRES  60      3
SB 5***
PERLND  58                    31.39     RCHRES   8      2
PERLND  58                    31.39     RCHRES   8      3
PERLND  50                    13.35     RCHRES   8      2
PERLND  50                    13.35     RCHRES   8      3
IMPLND   2                    38.65     RCHRES   8      5
SB 58***
PERLND  51                    18.44     RCHRES  33      2
PERLND  51                    18.44     RCHRES  33      3
SB 6***
PERLND  60                    38.63     RCHRES   6      2
PERLND  60                    38.63     RCHRES   6      3
PERLND  52                    11.55     RCHRES   6      2
PERLND  52                    11.55     RCHRES   6      3
IMPLND   4                    66.69     RCHRES   6      5
SB 28***
PERLND  59                     5.02     RCHRES   7      2
PERLND  59                     5.02     RCHRES   7      3
PERLND  51                    24.93     RCHRES   7      2
PERLND  51                    24.93     RCHRES   7      3
IMPLND   3                     9.39     RCHRES   7      5
SB 69 83***
PERLND  51                     7.51     RCHRES  48      2
PERLND  51                     7.51     RCHRES  48      3
SB 47***
PERLND  51                    14.74     RCHRES  54      2
PERLND  51                    14.74     RCHRES  54      3
Basin  20***
PERLND  50                   409.47     RCHRES   9      2
PERLND  50                   409.47     RCHRES   9      3
SB 19***
PERLND  58                    42.13     RCHRES  11      2
PERLND  58                    42.13     RCHRES  11      3
PERLND  50                     2.33     RCHRES  11      2
PERLND  50                     2.33     RCHRES  11      3
IMPLND   2                    46.65     RCHRES  11      5
SB 61***
PERLND  49                    34.49     RCHRES  34      2
PERLND  49                    34.49     RCHRES  34      3
SB 71 74 43***
PERLND  50                    38.53     RCHRES  10      2
PERLND  50                    38.53     RCHRES  10      3
SB 51 52***
PERLND  49                    12.55     RCHRES  61      2
PERLND  49                    12.55     RCHRES  61      3
SB 9***
PERLND  58                    51.68     RCHRES  12      2
PERLND  58                    51.68     RCHRES  12      3
PERLND  50                     9.96     RCHRES  12      2
PERLND  50                     9.96     RCHRES  12      3
IMPLND   2                    53.08     RCHRES  12      5
SB 1***
PERLND  59                    97.16     RCHRES  13      2
PERLND  59                    97.16     RCHRES  13      3
PERLND  51                    45.43     RCHRES  13      2
PERLND  51                    45.43     RCHRES  13      3
IMPLND   3                    325.6     RCHRES  13      5
SB 86***
PERLND  50                     5.75     RCHRES  51      2
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PERLND  50                    5.75     RCHRES  51      3
SB 4***
PERLND  58                    7.68     RCHRES  14      2
PERLND  58                    7.68     RCHRES  14      3
PERLND  50                    1.57     RCHRES  14      2
PERLND  50                    1.57     RCHRES  14      3
IMPLND   2                    2.59     RCHRES  14      5
SB 41 42***
PERLND  50                    5.69     RCHRES  42      2
PERLND  50                    5.69     RCHRES  42      3
SB 75 35***
PERLND  50                   36.37     RCHRES  35      2
PERLND  50                   36.37     RCHRES  35      3
SB 26***
PERLND  58                   12.15     RCHRES  15      2
PERLND  58                   12.15     RCHRES  15      3
PERLND  50                     2.1     RCHRES  15      2
PERLND  50                     2.1     RCHRES  15      3
IMPLND   2                   10.18     RCHRES  15      5
SB 84***
PERLND  49                    71.8     RCHRES  62      2
PERLND  49                    71.8     RCHRES  62      3
SB 54***
PERLND  51                    6.82     RCHRES  53      2
PERLND  51                    6.82     RCHRES  53      3
SB 16***
PERLND  58                   29.89     RCHRES  16      2
PERLND  58                   29.89     RCHRES  16      3
PERLND  50                    5.43     RCHRES  16      2
PERLND  50                    5.43     RCHRES  16      3
IMPLND   2                   85.24     RCHRES  16      5
SB 55***
PERLND  50                   18.02     RCHRES  36      2
PERLND  50                   18.02     RCHRES  36      3
SB 53 88***
PERLND  50                   14.29     RCHRES  63      2
PERLND  50                   14.29     RCHRES  63      3
PERLND  49                   44.52     RCHRES  63      2
PERLND  49                   44.52     RCHRES  63      3
SB 23 111***
PERLND  50                   12.06     RCHRES  17      2
PERLND  50                   12.06     RCHRES  17      3
PERLND  58                    8.01     RCHRES  17      2
PERLND  58                    8.01     RCHRES  17      3
IMPLND   2                   12.28     RCHRES  17      5
SB 79 90 80***
PERLND  50                   75.72     RCHRES  64      2
PERLND  50                   75.72     RCHRES  64      3
SB 34***
PERLND  49                   22.67     RCHRES  39      2
PERLND  49                   22.67     RCHRES  39      3
SB 27***
PERLND  58                   50.67     RCHRES  18      2
PERLND  58                   50.67     RCHRES  18      3
PERLND  50                    3.96     RCHRES  18      2
PERLND  50                    3.96     RCHRES  18      3
IMPLND   2                   27.63     RCHRES  18      5
SB 30***
PERLND  42                    0.31     RCHRES  19      2
PERLND  42                    0.31     RCHRES  19      3
PERLND  58                    0.81     RCHRES  19      2
PERLND  58                    0.81     RCHRES  19      3
PERLND  34                     1.4     RCHRES  19      2
PERLND  34                     1.4     RCHRES  19      3
PERLND  50                    0.16     RCHRES  19      2
PERLND  50                    0.16     RCHRES  19      3
IMPLND   2                   10.18     RCHRES  19      5
SB 50 (part 2)***
PERLND  51                   11.79     RCHRES  49      2
PERLND  51                   11.79     RCHRES  49      3
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SB 29***
PERLND  58                      10.87     RCHRES  20      2
PERLND  58                      10.87     RCHRES  20      3
IMPLND   2                       3.62     RCHRES  20      5
SB 25***
PERLND  17                      24.11     RCHRES  21      2
PERLND  17                      24.11     RCHRES  21      3
PERLND  25                       3.73     RCHRES  21      2
PERLND  25                       3.73     RCHRES  21      3
PERLND  41                       0.05     RCHRES  21      2
PERLND  41                       0.05     RCHRES  21      3
PERLND  49                      10.93     RCHRES  21      2
PERLND  49                      10.93     RCHRES  21      3
PERLND  57                      39.69     RCHRES  21      2
PERLND  57                      39.69     RCHRES  21      3
IMPLND   1                      21.86     RCHRES  21      5
SB 3***
PERLND  43                       9.91     RCHRES  22      2
PERLND  43                       9.91     RCHRES  22      3
PERLND  59                       4.04     RCHRES  22      2
PERLND  59                       4.04     RCHRES  22      3
PERLND  35                       2.93     RCHRES  22      2
PERLND  35                       2.93     RCHRES  22      3
PERLND  51                        2.1     RCHRES  22      2
PERLND  51                        2.1     RCHRES  22      3
IMPLND   3                      11.32     RCHRES  22      5
SB 112 76 89 56 49***
PERLND  51                      73.24     RCHRES  44      2
PERLND  51                      73.24     RCHRES  44      3
SB 50 (part1)***
PERLND  51                       15.9     RCHRES  45      2
PERLND  51                       15.9     RCHRES  45      3
SB 91 40 73***
PERLND  33                      13.23     RCHRES  66      2
PERLND  33                      13.23     RCHRES  66      3
PERLND  49                      12.16     RCHRES  66      2
PERLND  49                      12.16     RCHRES  66      3
SB 81***
PERLND  50                       8.17     RCHRES  37      2
PERLND  50                       8.17     RCHRES  37      3
IMPLND   1                       1.59     RCHRES  37      5
SB 44 37***
PERLND  33                       0.55     RCHRES  38      2
PERLND  33                       0.55     RCHRES  38      3
PERLND  49                       7.92     RCHRES  38      2
PERLND  49                       7.92     RCHRES  38      3
IMPLND   1                       1.51     RCHRES  38      5
SB 2***
PERLND  42                       0.53     RCHRES  23      2
PERLND  42                       0.53     RCHRES  23      3
PERLND  50                       0.27     RCHRES  23      2
PERLND  50                       0.27     RCHRES  23      3
PERLND  58                       1.17     RCHRES  23      2
PERLND  58                       1.17     RCHRES  23      3
PERLND  34                       0.11     RCHRES  23      2
PERLND  34                       0.11     RCHRES  23      3
IMPLND   2                      15.27     RCHRES  23      5
SB 38***
PERLND  49                       0.36     RCHRES  68      2
PERLND  49                       0.36     RCHRES  68      3
PERLND  33                      14.08     RCHRES  68      2
PERLND  33                      14.08     RCHRES  68      3
SB 78***
PERLND  33                      15.88     RCHRES  71      2
PERLND  33                      15.88     RCHRES  71      3
PERLND  49                      10.26     RCHRES  71      2
PERLND  49                      10.26     RCHRES  71      3
IMPLND   1                       6.14     RCHRES  71      5
SB 72 39***
PERLND  33                       6.52     RCHRES  40      2
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PERLND  33                    6.52     RCHRES  40      3
PERLND  35                    7.36     RCHRES  40      2
PERLND  35                    7.36     RCHRES  40      3
HMB 1***
PERLND  27                    0.07     RCHRES  24      2
PERLND  27                    0.07     RCHRES  24      3
PERLND  43                    8.65     RCHRES  24      2
PERLND  43                    8.65     RCHRES  24      3
PERLND  59                    0.19     RCHRES  24      2
PERLND  59                    0.19     RCHRES  24      3
PERLND  19                    3.48     RCHRES  24      2
PERLND  19                    3.48     RCHRES  24      3
PERLND  35                    1.55     RCHRES  24      2
PERLND  35                    1.55     RCHRES  24      3
IMPLND   3                    3.08     RCHRES  24      5
Urban 104***
PERLND  58                    16.7     RCHRES  42      2
PERLND  58                    16.7     RCHRES  42      3
IMPLND   2                   12.67     RCHRES  42      5
Off-site 105***
PERLND  58                   80.76     RCHRES  25      2
PERLND  58                   80.76     RCHRES  25      3
IMPLND   2                  276.25     RCHRES  25      5
Off-site 103***
PERLND  58                  437.79     RCHRES  26      2
PERLND  58                  437.79     RCHRES  26      3
IMPLND   2                  604.61     RCHRES  26      5
SB 102***
PERLND  58                  188.16     RCHRES  27      2
PERLND  58                  188.16     RCHRES  27      3
IMPLND   2                  160.24     RCHRES  27      5
SB 98 110 (urban)***
PERLND  58                    1.89     RCHRES  69      2
PERLND  58                    1.89     RCHRES  69      3
PERLND  41                    0.03     RCHRES  69      2
PERLND  41                    0.03     RCHRES  69      3
PERLND  57                     0.1     RCHRES  69      2
PERLND  57                     0.1     RCHRES  69      3
PERLND  33                    1.16     RCHRES  69      2
PERLND  33                    1.16     RCHRES  69      3
PERLND  49                     0.5     RCHRES  69      2
PERLND  49                     0.5     RCHRES  69      3
IMPLND   1                    1.21     RCHRES  69      5
IMPLND   2                   17.01     RCHRES  69      5
SB 99***
PERLND  58                    1.01     RCHRES  46      2
PERLND  58                    1.01     RCHRES  46      3
IMPLND   2                    6.49     RCHRES  46      5
SB 101***
PERLND  58                    3.14     RCHRES  28      2
PERLND  58                    3.14     RCHRES  28      3
IMPLND   2                   16.56     RCHRES  28      5
SB 100***
PERLND  58                    3.51     RCHRES  29      2
PERLND  58                    3.51     RCHRES  29      3
IMPLND   2                   21.89     RCHRES  29      5
SB31***
PERLND  42                    4.05     RCHRES  30      2
PERLND  42                    4.05     RCHRES  30      3
PERLND  34                   12.84     RCHRES  30      2
PERLND  34                   12.84     RCHRES  30      3
PERLND  58                    0.66     RCHRES  30      2
PERLND  58                    0.66     RCHRES  30      3
PERLND  50                    2.82     RCHRES  30      2
PERLND  50                    2.82     RCHRES  30      3
IMPLND   2                   38.87     RCHRES  30      5
SB 59***
PERLND  52                   30.03     RCHRES  41      2
PERLND  52                   30.03     RCHRES  41      3
SB 36***
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PERLND  58                      48.07     RCHRES  31      2
PERLND  58                      48.07     RCHRES  31      3
PERLND  50                       5.89     RCHRES  31      2
PERLND  50                       5.89     RCHRES  31      3
IMPLND   2                     104.21     RCHRES  31      5
SB 46***
PERLND  43                      10.53     RCHRES  43      2
PERLND  43                      10.53     RCHRES  43      3

******Routing******
RCHRES  32                          1     COPY    24     16
RCHRES  32                                RCHRES  47      6
PERLND  51                      30.73     COPY    26     12
PERLND  51                      30.73     COPY    26     13
RCHRES   1                          1     RCHRES  32      6
RCHRES   1                                COPY    26     16
RCHRES  47                          1     COPY    23     16
RCHRES  47                                RCHRES  50      6
PERLND  51                     252.32     COPY    24     12
PERLND  51                     252.32     COPY    24     13
RCHRES   2                          1     RCHRES  47      6
RCHRES   2                                COPY    24     16
RCHRES  50                          1     RCHRES  52      6
RCHRES   3                          1     RCHRES  50      6
RCHRES   3                                COPY    23     16
PERLND  50                       5.38     COPY    23     12
PERLND  50                       5.38     COPY    23     13
RCHRES  52                          1     RCHRES  55      6
RCHRES  52                                COPY    22     16
RCHRES   4                          1     RCHRES  55      6
RCHRES   4                                COPY    22     16
PERLND  50                      14.19     COPY    22     12
PERLND  50                      14.19     COPY    22     13
RCHRES  33                          1     RCHRES  43      6
RCHRES   5                          1     RCHRES  33      6
RCHRES   5                                COPY    28     16
PERLND  51                      18.44     COPY    28     12
PERLND  51                      18.44     COPY    28     13
RCHRES   6                          1     RCHRES  41      6
RCHRES   6                                COPY    27     16
RCHRES  48                          1     RCHRES  54      6
RCHRES   7                          1     RCHRES  48      6
RCHRES   7                                COPY    25     16
PERLND  51                       7.51     COPY    25     12
PERLND  51                       7.51     COPY    25     13
RCHRES  54                          1     RCHRES  57      6
RCHRES  54                                COPY    21     16
RCHRES  43                          1     RCHRES  54      6
RCHRES  56                          1     RCHRES  60      6
RCHRES  56                                COPY    20     16
RCHRES  59                          1     RCHRES  60      6
RCHRES  59                                COPY    20     16
RCHRES  60                          1     COPY    17     16
RCHRES  60                                RCHRES  61      6
PERLND  49                      30.86     COPY    20     12
PERLND  49                      30.86     COPY    20     13
RCHRES   8                          1     RCHRES  60      6
RCHRES   8                                COPY    20     16
RCHRES  61                          1     RCHRES  62      6
RCHRES  34                          1     RCHRES  61      6
RCHRES  34                                COPY    17     16
RCHRES   9                          1     RCHRES  34      6
RCHRES  10                          1     RCHRES  61      6
RCHRES  10                                COPY    17     16
RCHRES  11                          1     RCHRES  61      6
RCHRES  11                                COPY    17     16
PERLND  49                      12.55     COPY    17     12
PERLND  49                      12.55     COPY    17     13
RCHRES  12                          1     RCHRES  61      6
RCHRES  12                                COPY    17     16
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RCHRES	63	1	RCHRES	64	6
RCHRES	62	1	RCHRES	63	6
RCHRES	62		COPY	6	16
RCHRES	51	1	RCHRES	53	6
RCHRES	53	1	RCHRES	63	6
RCHRES	53		COPY	6	16
RCHRES	13	1	RCHRES	36	6
PERLND	59	97.16	COPY	8	12
PERLND	51	45.43	COPY	8	12
IMPLND	3	325.6	COPY	8	15
PERLND	59	97.16	COPY	8	13
PERLND	51	45.43	COPY	8	13
PERLND	50	5.75	COPY	7	12
PERLND	50	5.75	COPY	7	13
RCHRES	14	1	RCHRES	51	6
RCHRES	14		COPY	7	16
RCHRES	42	1	RCHRES	51	6
RCHRES	42		COPY	7	16
RCHRES	35	1	RCHRES	63	6
RCHRES	35		COPY	6	16
RCHRES	15	1	RCHRES	35	6
PERLND	58	12.15	COPY	13	12
PERLND	50	2.1	COPY	13	12
IMPLND	2	10.18	COPY	13	15
PERLND	58	12.15	COPY	13	13
PERLND	50	2.1	COPY	13	13
RCHRES	16	1	RCHRES	63	6
RCHRES	16		COPY	6	16
RCHRES	36	1	RCHRES	51	6
RCHRES	36		COPY	7	16
PERLND	50	14.29	COPY	6	12
PERLND	49	44.52	COPY	6	12
PERLND	50	14.29	COPY	6	13
PERLND	49	44.52	COPY	6	13
RCHRES	64	1	RCHRES	65	6
RCHRES	64		COPY	5	16
RCHRES	17	1	RCHRES	65	6
RCHRES	17		COPY	5	16
RCHRES	37	1	RCHRES	65	6
RCHRES	37		COPY	5	16
RCHRES	65	1	RCHRES	66	6
RCHRES	66	1	RCHRES	67	6
RCHRES	66		COPY	3	16
RCHRES	67	1	RCHRES	68	6
RCHRES	38	1	RCHRES	67	6
RCHRES	38		COPY	3	16
RCHRES	44	1	RCHRES	66	6
RCHRES	39	1	RCHRES	44	6
RCHRES	18	1	RCHRES	39	6
RCHRES	18		COPY	12	16
PERLND	49	22.67	COPY	12	12
PERLND	49	22.67	COPY	12	13
RCHRES	19	1	RCHRES	67	6
RCHRES	19		COPY	3	16
RCHRES	49	1	RCHRES	67	6
RCHRES	49		COPY	3	16
RCHRES	45	1	RCHRES	49	6
RCHRES	20	1	RCHRES	45	6
RCHRES	20		COPY	11	16
PERLND	17	24.11	COPY	10	12
PERLND	25	3.73	COPY	10	12
PERLND	41	0.05	COPY	10	12
PERLND	49	10.93	COPY	10	12
PERLND	57	39.69	COPY	10	12
IMPLND	1	21.86	COPY	10	15
PERLND	17	24.11	COPY	10	13
PERLND	25	3.73	COPY	10	13
PERLND	41	0.05	COPY	10	13
PERLND	49	10.93	COPY	10	13
PERLND	57	39.69	COPY	10	13

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RCHRES	22	1	RCHRES	67	6
RCHRES	22		COPY	3	16
PERLND	51	15.9	COPY	11	12
PERLND	51	15.9	COPY	11	13
RCHRES	69	1	RCHRES	70	6
RCHRES	23	1	RCHRES	69	6
RCHRES	23		COPY	2	16
RCHRES	68	1	RCHRES	69	6
RCHRES	68		COPY	2	16
RCHRES	40	1	RCHRES	69	6
RCHRES	40		COPY	2	16
RCHRES	70	1	RCHRES	71	6
RCHRES	70		COPY	1	16
RCHRES	46	1	RCHRES	70	6
PERLND	33	15.88	COPY	1	12
PERLND	49	10.26	COPY	1	12
IMPLND	1	6.14	COPY	1	15
PERLND	33	15.88	COPY	1	13
PERLND	49	10.26	COPY	1	13
RCHRES	24	1	RCHRES	40	6
PERLND	27	0.07	COPY	9	12
PERLND	43	8.65	COPY	9	12
PERLND	59	0.19	COPY	9	12
PERLND	19	3.48	COPY	9	12
PERLND	35	1.55	COPY	9	12
IMPLND	3	3.08	COPY	9	15
PERLND	27	0.07	COPY	9	13
PERLND	43	8.65	COPY	9	13
PERLND	59	0.19	COPY	9	13
PERLND	19	3.48	COPY	9	13
PERLND	35	1.55	COPY	9	13
RCHRES	25	1	RCHRES	42	6
RCHRES	26	1	RCHRES	37	6
RCHRES	27	1	RCHRES	38	6
PERLND	58	1.89	COPY	2	12
PERLND	41	0.03	COPY	2	12
PERLND	57	0.1	COPY	2	12
PERLND	33	1.16	COPY	2	12
PERLND	49	0.5	COPY	2	12
IMPLND	1	1.21	COPY	2	15
IMPLND	2	17.01	COPY	2	15
PERLND	58	1.89	COPY	2	13
PERLND	41	0.03	COPY	2	13
PERLND	57	0.1	COPY	2	13
PERLND	33	1.16	COPY	2	13
PERLND	49	0.5	COPY	2	13
RCHRES	28	1	RCHRES	46	6
RCHRES	29	1	RCHRES	46	6
RCHRES	30	1	RCHRES	71	6
RCHRES	30		COPY	1	16
PERLND	52	30.03	COPY	27	12
PERLND	52	30.03	COPY	27	13
RCHRES	41	1	COPY	25	16
RCHRES	41		RCHRES	48	6
RCHRES	31	1	RCHRES	57	6
RCHRES	31		COPY	21	16
RCHRES	57	1	RCHRES	58	6
RCHRES	58	1	RCHRES	59	6
RCHRES	55	1	RCHRES	56	6
RCHRES	32	1	COPY	526	16
RCHRES	47	1	COPY	524	16
RCHRES	50	1	COPY	523	16
RCHRES	33	1	COPY	528	16
RCHRES	48	1	COPY	525	16
RCHRES	60	1	COPY	520	16
RCHRES	61	1	COPY	517	16
RCHRES	63	1	COPY	506	16
RCHRES	51	1	COPY	507	16
RCHRES	13	1	COPY	508	16
RCHRES	15	1	COPY	513	16

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RCHRES  65                              1     COPY   505     16
RCHRES  67                              1     COPY   503     16
RCHRES  39                              1     COPY   512     16
RCHRES  45                              1     COPY   511     16
RCHRES  21                              1     COPY   510     16
RCHRES  69                              1     COPY   502     16
RCHRES  71                              1     COPY   501     16
RCHRES  24                              1     COPY   509     16
RCHRES  41                              1     COPY   527     16
RCHRES  57                              1     COPY   521     16
RCHRES  55                              1     COPY   522     16
END SCHEMATIC

NETWORK
<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Target vols> <-Grp> <-Member->  ***
<Name>   #        <Name> # #<-factor->strg <Name>   #   #        <Name> # #  ***
COPY   508 OUTPUT MEAN   1 1   12.1        DISPLY   8     INPUT  TIMSER 1
COPY   513 OUTPUT MEAN   1 1   12.1        DISPLY  13     INPUT  TIMSER 1
COPY   510 OUTPUT MEAN   1 1   12.1        DISPLY  10     INPUT  TIMSER 1
COPY   509 OUTPUT MEAN   1 1   12.1        DISPLY   9     INPUT  TIMSER 1
COPY   526 OUTPUT MEAN   1 1   12.1        DISPLY  26     INPUT  TIMSER 1
COPY   528 OUTPUT MEAN   1 1   12.1        DISPLY  28     INPUT  TIMSER 1
COPY   512 OUTPUT MEAN   1 1   12.1        DISPLY  12     INPUT  TIMSER 1
COPY   527 OUTPUT MEAN   1 1   12.1        DISPLY  27     INPUT  TIMSER 1
COPY   511 OUTPUT MEAN   1 1   12.1        DISPLY  11     INPUT  TIMSER 1
COPY   524 OUTPUT MEAN   1 1   12.1        DISPLY  24     INPUT  TIMSER 1
COPY   525 OUTPUT MEAN   1 1   12.1        DISPLY  25     INPUT  TIMSER 1
COPY   523 OUTPUT MEAN   1 1   12.1        DISPLY  23     INPUT  TIMSER 1
COPY   507 OUTPUT MEAN   1 1   12.1        DISPLY   7     INPUT  TIMSER 1
COPY   522 OUTPUT MEAN   1 1   12.1        DISPLY  22     INPUT  TIMSER 1
COPY   521 OUTPUT MEAN   1 1   12.1        DISPLY  21     INPUT  TIMSER 1
COPY   520 OUTPUT MEAN   1 1   12.1        DISPLY  20     INPUT  TIMSER 1
COPY   517 OUTPUT MEAN   1 1   12.1        DISPLY  17     INPUT  TIMSER 1
COPY   506 OUTPUT MEAN   1 1   12.1        DISPLY   6     INPUT  TIMSER 1
COPY   505 OUTPUT MEAN   1 1   12.1        DISPLY   5     INPUT  TIMSER 1
COPY   503 OUTPUT MEAN   1 1   12.1        DISPLY   3     INPUT  TIMSER 1
COPY   502 OUTPUT MEAN   1 1   12.1        DISPLY   2     INPUT  TIMSER 1
COPY   501 OUTPUT MEAN   1 1   12.1        DISPLY   1     INPUT  TIMSER 1


<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Target vols> <-Grp> <-Member->  ***
<Name>   #        <Name> # #<-factor->strg <Name>   #   #        <Name> # #  ***
END NETWORK

RCHRES
  GEN-INFO
    RCHRES       Name        Nexits   Unit Systems   Printer                ***
    # -  #<----------------><---> User T-series  Engl Metr LKFG             ***
                                        in  out                             ***
    1     HMB 24 (was 26)         1    1    1    1   28    0    1
    2     HMB 22 (was 24)         1    1    1    1   28    0    1
    3     HMB 21 (was 23)         1    1    1    1   28    0    1
    4     HMB 20 (was 22)         1    1    1    1   28    0    1
    5     HMB 26 (was 28)         1    1    1    1   28    0    1
    6     HMB 25 (was 27)         1    1    1    1   28    0    1
    7     HMB 23 (was 25)         1    1    1    1   28    0    1
    8     HMB 18 (was 19 a-080    1    1    1    1   28    0    1
    9     Offsite 97              1    1    1    1   28    0    1
   10     SB 17 SF                1    1    1    1   28    0    1
   11     HMB 17 (was 18)         1    1    1    1   28    0    1
   12     HMB 16 (was 17)         1    1    1    1   28    0    1
   13     HMB 8b                  1    1    1    1   28    0    1
   14     HMB 7                   1    1    1    1   28    0    1
   15     HMB 13                  1    1    1    1   28    0    1
   16     HMB 6                   1    1    1    1   28    0    1
   17     HMB 5                   1    1    1    1   28    0    1
   18     HMB 12                  1    1    1    1   28    0    1
   19     HMB 4                   1    1    1    1   28    0    1
   20     HMB 11                  1    1    1    1   28    0    1
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 21     HMB 10                  1    1    1    1   28    0    1
 22     HMB 3                   1    1    1    1   28    0    1
 23     HMB 2                   1    1    1    1   28    0    1
 24     HMB 9                   1    1    1    1   28    0    1
 25     Urban 105               1    1    1    1   28    0    1
 26     Urban 103               1    1    1    1   28    0    1
 27     Urban 102               1    1    1    1   28    0    1
 28     Urban 101               1    1    1    1   28    0    1
 29     Urban 100               1    1    1    1   28    0    1
 30     HMB One                 1    1    1    1   28    0    1
 31     HMB 19 WQ (was 2-276    1    1    1    1   28    0    1
 32     POC 26                  1    1    1    1   28    0    1
 33     POC 28                  1    1    1    1   28    0    1
 34     SB 18 SF                1    1    1    1   28    0    1
 35     Channel  13            1    1    1    1   28    0    1
 36     Channel 8               1    1    1    1   28    0    1
 37     Urban 2                 1    1    1    1   28    0    1
 38     Urban 3                 1    1    1    1   28    0    1
 39     DB 2                    1    1    1    1   28    0    1
 40     Trib 9                  1    1    1    1   28    0    1
 41     DB 9 (was 10)           1    1    1    1   28    0    1
 42     Urban 1                 1    1    1    1   28    0    1
 43     POC 21 SF               1    1    1    1   28    0    1
 44     Channel  12            1    1    1    1   28    0    1
 45     POC 11                  1    1    1    1   28    0    1
 46     Urban 4                 1    1    1    1   28    0    1
 47     POC 24                  1    1    1    1   28    0    1
 48     POC 25                  1    1    1    1   28    0    1
 49     SF POC 3/4              1    1    1    1   28    0    1
 50     POC 23                  1    1    1    1   28    0    1
 51     POC 7                   1    1    1    1   28    0    1
 52     POC 22                  1    1    1    1   28    0    1
 53     NF                      1    1    1    1   28    0    1
 54     POC 21                  1    1    1    1   28    0    1
 55     DB 7 (was 8)            1    1    1    1   28    0    1
 56     POC 20 SF               1    1    1    1   28    0    1
 57     DB 6 (was 7)            1    1    1    1   28    0    1
 58     POC 20 NF               1    1    1    1   28    0    1
 59     POC 20 NF2              1    1    1    1   28    0    1
 60     POC 20                  1    1    1    1   28    0    1
 61     POC 17/18               1    1    1    1   28    0    1
 62     SF                      1    1    1    1   28    0    1
 63     POC 6                   1    1    1    1   28    0    1
 64     Upstream POC 5          1    1    1    1   28    0    1
 65     POC 5                   1    1    1    1   28    0    1
 66     Upstream POC 3/4-157    1    1    1    1   28    0    1
 67     POC 3/4                 1    1    1    1   28    0    1
 68     upstream POC 2          1    1    1    1   28    0    1
 69     POC 2                   1    1    1    1   28    0    1
 70     upstream POC 1          1    1    1    1   28    0    1
 71     POC 1                   1    1    1    1   28    0    1
END GEN-INFO
*** Section RCHRES***

ACTIVITY
  <PLS > ************ Active Sections ******************************
  # -  # HYFG ADFG CNFG HTFG SDFG GQFG OXFG NUFG PKFG PHFG ***
  1         1    0    0    0    0    0    0    0    0    0
  2         1    0    0    0    0    0    0    0    0    0
  3         1    0    0    0    0    0    0    0    0    0
  4         1    0    0    0    0    0    0    0    0    0
  5         1    0    0    0    0    0    0    0    0    0
  6         1    0    0    0    0    0    0    0    0    0
  7         1    0    0    0    0    0    0    0    0    0
  8         1    0    0    0    0    0    0    0    0    0
  9         1    0    0    0    0    0    0    0    0    0
 10         1    0    0    0    0    0    0    0    0    0
 11         1    0    0    0    0    0    0    0    0    0
 12         1    0    0    0    0    0    0    0    0    0
 13         1    0    0    0    0    0    0    0    0    0
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 14          1    0    0    0    0    0    0    0    0    0
 15          1    0    0    0    0    0    0    0    0    0
 16          1    0    0    0    0    0    0    0    0    0
 17          1    0    0    0    0    0    0    0    0    0
 18          1    0    0    0    0    0    0    0    0    0
 19          1    0    0    0    0    0    0    0    0    0
 20          1    0    0    0    0    0    0    0    0    0
 21          1    0    0    0    0    0    0    0    0    0
 22          1    0    0    0    0    0    0    0    0    0
 23          1    0    0    0    0    0    0    0    0    0
 24          1    0    0    0    0    0    0    0    0    0
 25          1    0    0    0    0    0    0    0    0    0
 26          1    0    0    0    0    0    0    0    0    0
 27          1    0    0    0    0    0    0    0    0    0
 28          1    0    0    0    0    0    0    0    0    0
 29          1    0    0    0    0    0    0    0    0    0
 30          1    0    0    0    0    0    0    0    0    0
 31          1    0    0    0    0    0    0    0    0    0
 32          1    0    0    0    0    0    0    0    0    0
 33          1    0    0    0    0    0    0    0    0    0
 34          1    0    0    0    0    0    0    0    0    0
 35          1    0    0    0    0    0    0    0    0    0
 36          1    0    0    0    0    0    0    0    0    0
 37          1    0    0    0    0    0    0    0    0    0
 38          1    0    0    0    0    0    0    0    0    0
 39          1    0    0    0    0    0    0    0    0    0
 40          1    0    0    0    0    0    0    0    0    0
 41          1    0    0    0    0    0    0    0    0    0
 42          1    0    0    0    0    0    0    0    0    0
 43          1    0    0    0    0    0    0    0    0    0
 44          1    0    0    0    0    0    0    0    0    0
 45          1    0    0    0    0    0    0    0    0    0
 46          1    0    0    0    0    0    0    0    0    0
 47          1    0    0    0    0    0    0    0    0    0
 48          1    0    0    0    0    0    0    0    0    0
 49          1    0    0    0    0    0    0    0    0    0
 50          1    0    0    0    0    0    0    0    0    0
 51          1    0    0    0    0    0    0    0    0    0
 52          1    0    0    0    0    0    0    0    0    0
 53          1    0    0    0    0    0    0    0    0    0
 54          1    0    0    0    0    0    0    0    0    0
 55          1    0    0    0    0    0    0    0    0    0
 56          1    0    0    0    0    0    0    0    0    0
 57          1    0    0    0    0    0    0    0    0    0
 58          1    0    0    0    0    0    0    0    0    0
 59          1    0    0    0    0    0    0    0    0    0
 60          1    0    0    0    0    0    0    0    0    0
 61          1    0    0    0    0    0    0    0    0    0
 62          1    0    0    0    0    0    0    0    0    0
 63          1    0    0    0    0    0    0    0    0    0
 64          1    0    0    0    0    0    0    0    0    0
 65          1    0    0    0    0    0    0    0    0    0
 66          1    0    0    0    0    0    0    0    0    0
 67          1    0    0    0    0    0    0    0    0    0
 68          1    0    0    0    0    0    0    0    0    0
 69          1    0    0    0    0    0    0    0    0    0
 70          1    0    0    0    0    0    0    0    0    0
 71          1    0    0    0    0    0    0    0    0    0
END ACTIVITY

PRINT-INFO
  <PLS > ****************** Print-flags ******************* PIVL  PYR
  # -  # HYDR ADCA CONS HEAT  SED  GQL OXRX NUTR PLNK PHCB PIVL  PYR  *********
  1          4    0    0    0    0    0    0    0    0    0    1    9
  2          4    0    0    0    0    0    0    0    0    0    1    9
  3          4    0    0    0    0    0    0    0    0    0    1    9
  4          4    0    0    0    0    0    0    0    0    0    1    9
  5          4    0    0    0    0    0    0    0    0    0    1    9
  6          4    0    0    0    0    0    0    0    0    0    1    9
  7          4    0    0    0    0    0    0    0    0    0    1    9
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```
  8         4    0    0    0    0    0    0    0    0    0    1    9
  9         4    0    0    0    0    0    0    0    0    0    1    9
 10         4    0    0    0    0    0    0    0    0    0    1    9
 11         4    0    0    0    0    0    0    0    0    0    1    9
 12         4    0    0    0    0    0    0    0    0    0    1    9
 13         4    0    0    0    0    0    0    0    0    0    1    9
 14         4    0    0    0    0    0    0    0    0    0    1    9
 15         4    0    0    0    0    0    0    0    0    0    1    9
 16         4    0    0    0    0    0    0    0    0    0    1    9
 17         4    0    0    0    0    0    0    0    0    0    1    9
 18         4    0    0    0    0    0    0    0    0    0    1    9
 19         4    0    0    0    0    0    0    0    0    0    1    9
 20         4    0    0    0    0    0    0    0    0    0    1    9
 21         4    0    0    0    0    0    0    0    0    0    1    9
 22         4    0    0    0    0    0    0    0    0    0    1    9
 23         4    0    0    0    0    0    0    0    0    0    1    9
 24         4    0    0    0    0    0    0    0    0    0    1    9
 25         4    0    0    0    0    0    0    0    0    0    1    9
 26         4    0    0    0    0    0    0    0    0    0    1    9
 27         4    0    0    0    0    0    0    0    0    0    1    9
 28         4    0    0    0    0    0    0    0    0    0    1    9
 29         4    0    0    0    0    0    0    0    0    0    1    9
 30         4    0    0    0    0    0    0    0    0    0    1    9
 31         4    0    0    0    0    0    0    0    0    0    1    9
 32         4    0    0    0    0    0    0    0    0    0    1    9
 33         4    0    0    0    0    0    0    0    0    0    1    9
 34         4    0    0    0    0    0    0    0    0    0    1    9
 35         4    0    0    0    0    0    0    0    0    0    1    9
 36         4    0    0    0    0    0    0    0    0    0    1    9
 37         4    0    0    0    0    0    0    0    0    0    1    9
 38         4    0    0    0    0    0    0    0    0    0    1    9
 39         4    0    0    0    0    0    0    0    0    0    1    9
 40         4    0    0    0    0    0    0    0    0    0    1    9
 41         4    0    0    0    0    0    0    0    0    0    1    9
 42         4    0    0    0    0    0    0    0    0    0    1    9
 43         4    0    0    0    0    0    0    0    0    0    1    9
 44         4    0    0    0    0    0    0    0    0    0    1    9
 45         4    0    0    0    0    0    0    0    0    0    1    9
 46         4    0    0    0    0    0    0    0    0    0    1    9
 47         4    0    0    0    0    0    0    0    0    0    1    9
 48         4    0    0    0    0    0    0    0    0    0    1    9
 49         4    0    0    0    0    0    0    0    0    0    1    9
 50         4    0    0    0    0    0    0    0    0    0    1    9
 51         4    0    0    0    0    0    0    0    0    0    1    9
 52         4    0    0    0    0    0    0    0    0    0    1    9
 53         4    0    0    0    0    0    0    0    0    0    1    9
 54         4    0    0    0    0    0    0    0    0    0    1    9
 55         4    0    0    0    0    0    0    0    0    0    1    9
 56         4    0    0    0    0    0    0    0    0    0    1    9
 57         4    0    0    0    0    0    0    0    0    0    1    9
 58         4    0    0    0    0    0    0    0    0    0    1    9
 59         4    0    0    0    0    0    0    0    0    0    1    9
 60         4    0    0    0    0    0    0    0    0    0    1    9
 61         4    0    0    0    0    0    0    0    0    0    1    9
 62         4    0    0    0    0    0    0    0    0    0    1    9
 63         4    0    0    0    0    0    0    0    0    0    1    9
 64         4    0    0    0    0    0    0    0    0    0    1    9
 65         4    0    0    0    0    0    0    0    0    0    1    9
 66         4    0    0    0    0    0    0    0    0    0    1    9
 67         4    0    0    0    0    0    0    0    0    0    1    9
 68         4    0    0    0    0    0    0    0    0    0    1    9
 69         4    0    0    0    0    0    0    0    0    0    1    9
 70         4    0    0    0    0    0    0    0    0    0    1    9
 71         4    0    0    0    0    0    0    0    0    0    1    9
END PRINT-INFO

HYDR-PARM1
  RCHRES  Flags for each HYDR Section                                    ***
  # -  #  VC A1 A2 A3  ODFVFG for each *** ODGTFG for each     FUNCT  for each
         FG FG FG FG  possible  exit  *** possible  exit      possible  exit
```

DRAFT

	*	*	*	*	*	*	*	*	*	*	*	*	*	*		***				
1	0	1	0	0	4	0	0	0	0	0	0	0	0	0	2	2	2	2	2
2	0	1	0	0	4	0	0	0	0	0	0	0	0	0	2	2	2	2	2
3	0	1	0	0	4	0	0	0	0	0	0	0	0	0	2	2	2	2	2
4	0	1	0	0	4	0	0	0	0	0	0	0	0	0	2	2	2	2	2
5	0	1	0	0	4	0	0	0	0	0	0	0	0	0	2	2	2	2	2
6	0	1	0	0	4	0	0	0	0	0	0	0	0	0	2	2	2	2	2
7	0	1	0	0	4	0	0	0	0	0	0	0	0	0	2	2	2	2	2
8	0	1	0	0	4	0	0	0	0	0	0	0	0	0	2	2	2	2	2
9	0	1	0	0	4	0	0	0	0	0	0	0	0	0	2	2	2	2	2
10	0	1	0	0	4	0	0	0	0	0	0	0	0	0	2	2	2	2	2
11	0	1	0	0	4	0	0	0	0	0	0	0	0	0	2	2	2	2	2
12	0	1	0	0	4	0	0	0	0	0	0	0	0	0	2	2	2	2	2
13	0	1	0	0	4	0	0	0	0	0	0	0	0	0	2	2	2	2	2
14	0	1	0	0	4	0	0	0	0	0	0	0	0	0	2	2	2	2	2
15	0	1	0	0	4	0	0	0	0	0	0	0	0	0	2	2	2	2	2
16	0	1	0	0	4	0	0	0	0	0	0	0	0	0	2	2	2	2	2
17	0	1	0	0	4	0	0	0	0	0	0	0	0	0	2	2	2	2	2
18	0	1	0	0	4	0	0	0	0	0	0	0	0	0	2	2	2	2	2
19	0	1	0	0	4	0	0	0	0	0	0	0	0	0	2	2	2	2	2
20	0	1	0	0	4	0	0	0	0	0	0	0	0	0	2	2	2	2	2
21	0	1	0	0	4	0	0	0	0	0	0	0	0	0	2	2	2	2	2
22	0	1	0	0	4	0	0	0	0	0	0	0	0	0	2	2	2	2	2
23	0	1	0	0	4	0	0	0	0	0	0	0	0	0	2	2	2	2	2
24	0	1	0	0	4	0	0	0	0	0	0	0	0	0	2	2	2	2	2
25	0	1	0	0	4	0	0	0	0	0	0	0	0	0	2	2	2	2	2
26	0	1	0	0	4	0	0	0	0	0	0	0	0	0	2	2	2	2	2
27	0	1	0	0	4	0	0	0	0	0	0	0	0	0	2	2	2	2	2
28	0	1	0	0	4	0	0	0	0	0	0	0	0	0	2	2	2	2	2
29	0	1	0	0	4	0	0	0	0	0	0	0	0	0	2	2	2	2	2
30	0	1	0	0	4	0	0	0	0	0	0	0	0	0	2	2	2	2	2
31	0	1	0	0	4	0	0	0	0	0	0	0	0	0	2	2	2	2	2
32	0	1	0	0	4	0	0	0	0	0	0	0	0	0	2	2	2	2	2
33	0	1	0	0	4	0	0	0	0	0	0	0	0	0	2	2	2	2	2
34	0	1	0	0	4	0	0	0	0	0	0	0	0	0	2	2	2	2	2
35	0	1	0	0	4	0	0	0	0	0	0	0	0	0	2	2	2	2	2
36	0	1	0	0	4	0	0	0	0	0	0	0	0	0	2	2	2	2	2
37	0	1	0	0	4	0	0	0	0	0	0	0	0	0	2	2	2	2	2
38	0	1	0	0	4	0	0	0	0	0	0	0	0	0	2	2	2	2	2
39	0	1	0	0	4	0	0	0	0	0	0	0	0	0	2	2	2	2	2
40	0	1	0	0	4	0	0	0	0	0	0	0	0	0	2	2	2	2	2
41	0	1	0	0	4	0	0	0	0	0	0	0	0	0	2	2	2	2	2
42	0	1	0	0	4	0	0	0	0	0	0	0	0	0	2	2	2	2	2
43	0	1	0	0	4	0	0	0	0	0	0	0	0	0	2	2	2	2	2
44	0	1	0	0	4	0	0	0	0	0	0	0	0	0	2	2	2	2	2
45	0	1	0	0	4	0	0	0	0	0	0	0	0	0	2	2	2	2	2
46	0	1	0	0	4	0	0	0	0	0	0	0	0	0	2	2	2	2	2
47	0	1	0	0	4	0	0	0	0	0	0	0	0	0	2	2	2	2	2
48	0	1	0	0	4	0	0	0	0	0	0	0	0	0	2	2	2	2	2
49	0	1	0	0	4	0	0	0	0	0	0	0	0	0	2	2	2	2	2
50	0	1	0	0	4	0	0	0	0	0	0	0	0	0	2	2	2	2	2
51	0	1	0	0	4	0	0	0	0	0	0	0	0	0	2	2	2	2	2
52	0	1	0	0	4	0	0	0	0	0	0	0	0	0	2	2	2	2	2
53	0	1	0	0	4	0	0	0	0	0	0	0	0	0	2	2	2	2	2
54	0	1	0	0	4	0	0	0	0	0	0	0	0	0	2	2	2	2	2
55	0	1	0	0	4	0	0	0	0	0	0	0	0	0	2	2	2	2	2
56	0	1	0	0	4	0	0	0	0	0	0	0	0	0	2	2	2	2	2
57	0	1	0	0	4	0	0	0	0	0	0	0	0	0	2	2	2	2	2
58	0	1	0	0	4	0	0	0	0	0	0	0	0	0	2	2	2	2	2
59	0	1	0	0	4	0	0	0	0	0	0	0	0	0	2	2	2	2	2
60	0	1	0	0	4	0	0	0	0	0	0	0	0	0	2	2	2	2	2
61	0	1	0	0	4	0	0	0	0	0	0	0	0	0	2	2	2	2	2
62	0	1	0	0	4	0	0	0	0	0	0	0	0	0	2	2	2	2	2
63	0	1	0	0	4	0	0	0	0	0	0	0	0	0	2	2	2	2	2
64	0	1	0	0	4	0	0	0	0	0	0	0	0	0	2	2	2	2	2
65	0	1	0	0	4	0	0	0	0	0	0	0	0	0	2	2	2	2	2
66	0	1	0	0	4	0	0	0	0	0	0	0	0	0	2	2	2	2	2
67	0	1	0	0	4	0	0	0	0	0	0	0	0	0	2	2	2	2	2
68	0	1	0	0	4	0	0	0	0	0	0	0	0	0	2	2	2	2	2
69	0	1	0	0	4	0	0	0	0	0	0	0	0	0	2	2	2	2	2

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```
 70        0  1  0  0    4  0  0  0  0       0  0  0  0  0       2  2  2  2  2
 71        0  1  0  0    4  0  0  0  0       0  0  0  0  0       2  2  2  2  2
END HYDR-PARM1

HYDR-PARM2
  # -  #    FTABNO       LEN      DELTH     STCOR        KS      DB50        ***
<------><--------><--------><--------><--------><--------><-------->        ***
  1              1      0.01        0.0       0.0       0.5       0.0
  2              2      0.01        0.0       0.0       0.5       0.0
  3              3      0.01        0.0       0.0       0.5       0.0
  4              4      0.01        0.0       0.0       0.5       0.0
  5              5      0.01        0.0       0.0       0.5       0.0
  6              6      0.01        0.0       0.0       0.5       0.0
  7              7      0.01        0.0       0.0       0.5       0.0
  8              8      0.01        0.0       0.0       0.5       0.0
  9              9      1.05        0.0       0.0       0.5       0.0
 10             10      0.28        0.0       0.0       0.5       0.0
 11             11      0.01        0.0       0.0       0.5       0.0
 12             12      0.01        0.0       0.0       0.5       0.0
 13             13      0.01        0.0       0.0       0.5       0.0
 14             14      0.01        0.0       0.0       0.5       0.0
 15             15      0.01        0.0       0.0       0.5       0.0
 16             16      0.01        0.0       0.0       0.5       0.0
 17             17      0.01        0.0       0.0       0.5       0.0
 18             18      0.01        0.0       0.0       0.5       0.0
 19             19      0.01        0.0       0.0       0.5       0.0
 20             20      0.01        0.0       0.0       0.5       0.0
 21             21      0.01        0.0       0.0       0.5       0.0
 22             22      0.01        0.0       0.0       0.5       0.0
 23             23      0.01        0.0       0.0       0.5       0.0
 24             24      0.01        0.0       0.0       0.5       0.0
 25             25      0.01        0.0       0.0       0.5       0.0
 26             26      0.01        0.0       0.0       0.5       0.0
 27             27      0.01        0.0       0.0       0.5       0.0
 28             28      0.01        0.0       0.0       0.5       0.0
 29             29      0.01        0.0       0.0       0.5       0.0
 30             30      0.01        0.0       0.0       0.5       0.0
 31             31      0.01        0.0       0.0       0.5       0.0
 32             32      0.37        0.0       0.0       0.5       0.0
 33             33      0.32        0.0       0.0       0.5       0.0
 34             34      0.64        0.0       0.0       0.5       0.0
 35             35       0.3        0.0       0.0       0.5       0.0
 36             36      0.28        0.0       0.0       0.5       0.0
 37             37      0.11        0.0       0.0       0.5       0.0
 38             38      0.23        0.0       0.0       0.5       0.0
 39             39      0.01        0.0       0.0       0.5       0.0
 40             40      0.36        0.0       0.0       0.5       0.0
 41             41      0.01        0.0       0.0       0.5       0.0
 42             42      0.43        0.0       0.0       0.5       0.0
 43             43      0.47        0.0       0.0       0.5       0.0
 44             44      0.57        0.0       0.0       0.5       0.0
 45             45      0.27        0.0       0.0       0.5       0.0
 46             46      0.09        0.0       0.0       0.5       0.0
 47             47      0.65        0.0       0.0       0.5       0.0
 48             48      0.39        0.0       0.0       0.5       0.0
 49             49      0.14        0.0       0.0       0.5       0.0
 50             50      0.25        0.0       0.0       0.5       0.0
 51             51      0.04        0.0       0.0       0.5       0.0
 52             52      0.39        0.0       0.0       0.5       0.0
 53             53      0.14        0.0       0.0       0.5       0.0
 54             54      0.63        0.0       0.0       0.5       0.0
 55             55      0.01        0.0       0.0       0.5       0.0
 56             56      0.53        0.0       0.0       0.5       0.0
 57             57      0.01        0.0       0.0       0.5       0.0
 58             58      0.02        0.0       0.0       0.5       0.0
 59             59      0.45        0.0       0.0       0.5       0.0
 60             60      0.32        0.0       0.0       0.5       0.0
 61             61      0.25        0.0       0.0       0.5       0.0
 62             62      0.87        0.0       0.0       0.5       0.0
 63             63      0.32        0.0       0.0       0.5       0.0
```

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 64              64      0.36       0.0       0.0       0.5       0.0
 65              65      0.08       0.0       0.0       0.5       0.0
 66              66      0.27       0.0       0.0       0.5       0.0
 67              67      0.05       0.0       0.0       0.5       0.0
 68              68      0.18       0.0       0.0       0.5       0.0
 69              69      0.07       0.0       0.0       0.5       0.0
 70              70      0.19       0.0       0.0       0.5       0.0
 71              71      0.19       0.0       0.0       0.5       0.0
END HYDR-PARM2
HYDR-INIT
  RCHRES  Initial conditions for each HYDR section                    ***
  # -  # ***   VOL     Initial  value  of COLIND     Initial  value  of OUTDGT
        *** ac-ft     for each possible exit        for each possible exit
<------><--------->     <---><---><---><---><---> *** <---><---><---><---><--->
  1         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
  2         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
  3         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
  4         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
  5         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
  6         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
  7         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
  8         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
  9         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
 10         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
 11         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
 12         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
 13         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
 14         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
 15         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
 16         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
 17         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
 18         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
 19         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
 20         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
 21         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
 22         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
 23         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
 24         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
 25         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
 26         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
 27         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
 28         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
 29         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
 30         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
 31         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
 32         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
 33         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
 34         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
 35         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
 36         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
 37         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
 38         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
 39         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
 40         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
 41         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
 42         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
 43         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
 44         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
 45         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
 46         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
 47         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
 48         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
 49         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
 50         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
 51         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
 52         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
 53         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
 54         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
 55         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
 56         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
```

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   57         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
   58         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
   59         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
   60         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
   61         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
   62         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
   63         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
   64         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
   65         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
   66         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
   67         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
   68         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
   69         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
   70         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
   71         0             4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
  END HYDR-INIT
END RCHRES

SPEC-ACTIONS
END SPEC-ACTIONS
FTABLES
  FTABLE     32
   91    4
     Depth      Area    Volume  Outflow1 Velocity  Travel Time***
      (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
  0.000000  0.353903  0.000000  0.000000
  0.111111  0.358819  0.039596  1.501478
  0.222222  0.363736  0.079738  4.727354
  0.333333  0.368652  0.120426  9.219340
  0.444444  0.373569  0.161660  14.78181
  0.555556  0.378486  0.203441  21.29261
  0.666667  0.383403  0.245768  28.66545
  0.777778  0.388319  0.288642  36.83531
  0.888889  0.393236  0.332061  45.75114
  1.000000  0.398153  0.376028  55.37175
  1.111111  0.403070  0.420540  65.66329
  1.222222  0.407987  0.465599  76.59748
  1.333333  0.412904  0.511204  88.15044
  1.444444  0.417821  0.557355  100.3018
  1.555556  0.422738  0.604053  113.0342
  1.666667  0.427655  0.651297  126.3326
  1.777778  0.432572  0.699087  140.1838
  1.888889  0.437489  0.747424  154.5766
  2.000000  0.442406  0.796307  169.5011
  2.111111  0.447323  0.845736  184.9486
  2.222222  0.452240  0.895712  200.9116
  2.333333  0.457157  0.946234  217.3835
  2.444444  0.462075  0.997302  234.3584
  2.555556  0.466992  1.048917  251.8314
  2.666667  0.471909  1.101078  269.7980
  2.777778  0.476827  1.153786  288.2543
  2.888889  0.481744  1.207040  307.1971
  3.000000  0.486662  1.260840  326.6233
  3.111111  0.491579  1.315187  346.5306
  3.222222  0.496497  1.370080  366.9169
  3.333333  0.501414  1.425520  387.7802
  3.444444  0.506332  1.481505  409.1192
  3.555556  0.511249  1.538038  430.9326
  3.666667  0.516167  1.595116  453.2194
  3.777778  0.521085  1.652741  475.9790
  3.888889  0.526002  1.710913  499.2106
  4.000000  0.530920  1.769631  522.9140
  4.111111  0.535838  1.828895  547.0889
  4.222222  0.540756  1.888706  571.7352
  4.333333  0.545674  1.949063  596.8532
  4.444444  0.550591  2.009967  622.4429
  4.555556  0.555509  2.071417  648.5048
  4.666667  0.560427  2.133413  675.0393
  4.777778  0.565345  2.195956  702.0469
  4.888889  0.570263  2.259046  729.5282
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5.000000  0.575181  2.322681  757.4840
5.111111  0.580099  2.386864  785.9152
5.222222  0.585018  2.451592  814.8225
5.333333  0.589936  2.516868  844.2070
5.444444  0.594854  2.582689  874.0696
5.555556  0.599772  2.649057  904.4114
5.666667  0.604690  2.715972  935.2336
5.777778  0.609609  2.783433  966.5373
5.888889  0.614527  2.851440  998.3237
6.000000  0.619445  2.919995  1030.594
6.111111  0.624364  2.989095  1063.350
6.222222  0.629282  3.058742  1096.592
6.333333  0.634201  3.128936  1130.323
6.444444  0.639119  3.199675  1164.543
6.555556  0.644038  3.270962  1199.253
6.666667  0.648956  3.342795  1234.457
6.777778  0.653875  3.415174  1270.154
6.888889  0.658793  3.488100  1306.346
7.000000  0.663712  3.561573  1343.036
7.111111  0.668631  3.635592  1380.224
7.222222  0.673550  3.710158  1417.912
7.333333  0.678468  3.785270  1456.102
7.444444  0.683387  3.860928  1494.795
7.555556  0.688306  3.937134  1533.993
7.666667  0.693225  4.013885  1573.698
7.777778  0.698144  4.091184  1613.911
7.888889  0.703063  4.169028  1654.635
8.000000  0.707982  4.247420  1695.870
8.111111  0.712901  4.326358  1737.618
8.222222  0.717820  4.405842  1779.882
8.333333  0.722739  4.485873  1822.663
8.444444  0.727658  4.566451  1865.962
8.555556  0.732577  4.647575  1909.782
8.666667  0.737496  4.729246  1954.124
8.777778  0.742415  4.811463  1998.990
8.888889  0.747335  4.894227  2044.381
9.000000  0.752254  4.977537  2090.300
9.111111  0.757173  5.061394  2136.749
9.222222  0.762093  5.145798  2183.729
9.333333  0.767012  5.230748  2231.241
9.444444  0.771931  5.316245  2279.289
9.555556  0.776851  5.402288  2327.872
9.666667  0.781770  5.488879  2376.995
9.777778  0.786690  5.576015  2426.657
9.888889  0.791609  5.663698  2476.862
10.00000  0.796529  5.751928  2527.610
END FTABLE 32
FTABLE      1
 97    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.000000  0.000000  0.000000
0.010000  0.550000  0.005000  0.001000
0.100000  0.556000  0.055000  0.035000
0.200000  0.562000  0.111000  0.099000
0.300000  0.568000  0.168000  0.182000
0.400000  0.574000  0.225000  0.258000
0.500000  0.580000  0.283000  0.309000
0.600000  0.586000  0.341000  0.352000
0.700000  0.592000  0.400000  0.391000
0.800000  0.598000  0.460000  0.426000
0.900000  0.604000  0.520000  0.458000
1.000000  0.610000  0.581000  0.488000
1.100000  0.616000  0.642000  0.517000
1.200000  0.622000  0.704000  0.544000
1.300000  0.628000  0.767000  0.570000
1.400000  0.634000  0.830000  0.594000
1.500000  0.640000  0.894000  0.618000
1.600000  0.646000  0.958000  0.641000
1.700000  0.652000  1.023000  0.662000
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1.800000	0.658000	1.088000	0.684000
1.900000	0.664000	1.154000	0.704000
2.000000	0.670000	1.221000	0.724000
2.100000	0.676000	1.288000	0.744000
2.200000	0.682000	1.356000	0.763000
2.300000	0.688000	1.425000	0.781000
2.400000	0.694000	1.494000	0.800000
2.500000	0.700000	1.563000	0.817000
2.600000	0.706000	1.634000	0.835000
2.700000	0.712000	1.705000	0.852000
2.800000	0.718000	1.776000	0.868000
2.900000	0.724000	1.848000	0.885000
3.000000	0.730000	1.921000	0.901000
3.100000	0.736000	1.994000	0.916000
3.200000	0.742000	2.068000	0.932000
3.300000	0.748000	2.142000	0.947000
3.400000	0.754000	2.217000	0.962000
3.500000	0.760000	2.293000	0.977000
3.600000	0.766000	2.369000	0.991000
3.700000	0.772000	2.446000	1.006000
3.800000	0.778000	2.523000	1.020000
3.900000	0.784000	2.601000	1.034000
4.000000	0.790000	2.679000	1.047000
4.100000	0.796000	2.759000	1.061000
4.200000	0.802000	2.838000	1.074000
4.300000	0.808000	2.919000	1.088000
4.400000	0.814000	3.000000	1.290000
4.500000	0.820000	3.081000	1.650000
4.600000	0.826000	3.163000	2.111000
4.700000	0.832000	3.246000	2.655000
4.800000	0.838000	3.329000	3.271000
4.900000	0.844000	3.413000	3.950000
5.000000	0.850000	3.497000	4.675000
5.100000	0.856000	3.583000	5.135000
5.200000	0.862000	3.668000	5.550000
5.300000	0.868000	3.754000	5.930000
5.400000	0.874000	3.841000	6.283000
5.500000	0.880000	3.929000	6.615000
5.600000	0.886000	4.017000	6.928000
5.700000	0.892000	4.105000	7.226000
5.800000	0.898000	4.195000	7.511000
5.900000	0.904000	4.284000	7.784000
6.000000	0.910000	4.375000	8.047000
6.100000	0.916000	4.466000	8.301000
6.200000	0.922000	4.557000	8.546000
6.300000	0.928000	4.650000	8.784000
6.400000	0.934000	4.742000	9.331000
6.500000	0.940000	4.836000	10.13400
6.600000	0.946000	4.930000	11.10100
6.700000	0.952000	5.024000	12.20100
6.800000	0.958000	5.119000	13.41500
6.900000	0.964000	5.215000	14.73000
7.000000	0.970000	5.311000	16.13800
7.100000	0.976000	5.408000	17.63200
7.200000	0.982000	5.506000	19.20500
7.300000	0.988000	5.604000	20.85400
7.400000	0.994000	5.703000	22.57500
7.500000	1.000000	5.802000	24.36400
7.600000	1.006000	5.902000	26.21800
7.700000	1.012000	6.002000	28.13500
7.800000	1.018000	6.103000	30.11300
7.900000	1.024000	6.205000	32.14900
8.000000	1.030000	6.307000	34.24200
8.250000	1.045000	6.566000	39.71200
8.500000	1.060000	6.828000	45.50500
8.750000	1.075000	7.093000	51.60100
9.000000	1.090000	7.363000	57.98500
9.250000	1.105000	7.636000	64.64400
9.500000	1.120000	7.912000	71.56700
9.750000	1.135000	8.193000	78.74300

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10.00000  1.150000  8.477000  86.16300
10.25000  1.165000  8.765000  101.1680
10.50000  1.180000  9.057000  121.1930
10.75000  1.195000  9.352000  145.4680
11.00000  1.210000  9.651000  173.1680
11.25000  1.225000  9.954000  203.8220
11.50000  1.240000  10.26000  237.1170
11.75000  1.255000  10.57000  999.0000
END FTABLE  1
FTABLE     47
 91    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.473140  0.000000  0.000000
0.222222  0.490665  0.107089  2.230578
0.444444  0.508190  0.218073  6.947652
0.666667  0.525714  0.332952  13.43575
0.888889  0.543239  0.451724  21.40354
1.111111  0.560763  0.574391  30.68332
1.333333  0.578288  0.700952  41.16782
1.555556  0.595813  0.831408  52.78483
1.777778  0.613338  0.965758  65.48441
2.000000  0.630863  1.104003  79.23165
2.222222  0.648388  1.246142  94.00220
2.444444  0.665913  1.392175  109.7794
2.666667  0.683438  1.542103  126.5521
2.888889  0.700963  1.695925  144.3138
3.111111  0.718488  1.853642  163.0610
3.333333  0.736013  2.015253  182.7930
3.555556  0.753539  2.180759  203.5111
3.777778  0.771064  2.350159  225.2182
4.000000  0.788590  2.523454  247.9185
4.222222  0.806115  2.700644  271.6174
4.444444  0.823641  2.881728  296.3212
4.666667  0.841166  3.066706  322.0366
4.888889  0.858692  3.255579  348.7712
5.111111  0.876217  3.448347  376.5332
5.333333  0.893743  3.645009  405.3307
5.555556  0.911269  3.845566  435.1728
5.777778  0.928795  4.050018  466.0683
6.000000  0.946321  4.258364  498.0266
6.222222  0.963847  4.470604  531.0572
6.444444  0.981373  4.686740  565.1697
6.666667  0.998899  4.906770  600.3740
6.888889  1.016425  5.130695  636.6800
7.111111  1.033951  5.358514  674.0977
7.333333  1.051477  5.590229  712.6372
7.555556  1.069003  5.825838  752.3086
7.777778  1.086530  6.065341  793.1222
8.000000  1.104056  6.308740  835.0883
8.222222  1.121583  6.556033  878.2170
8.444444  1.139109  6.807221  922.5188
8.666667  1.156636  7.062304  968.0040
8.888889  1.174162  7.321281  1014.683
9.111111  1.191689  7.584154  1062.566
9.333333  1.209216  7.850921  1111.663
9.555556  1.226742  8.121583  1161.985
9.777778  1.244269  8.396140  1213.543
10.00000  1.261796  8.674591  1266.346
10.22222  1.279323  8.956938  1320.404
10.44444  1.296850  9.243179  1375.729
10.66667  1.314377  9.533316  1432.330
10.88889  1.331904  9.827347  1490.218
11.11111  1.349431  10.12527  1549.403
11.33333  1.366959  10.42709  1609.895
11.55556  1.384486  10.73281  1671.704
11.77778  1.402013  11.04242  1734.842
12.00000  1.419540  11.35593  1799.317
12.22222  1.437068  11.67333  1865.140
12.44444  1.454595  11.99462  1932.321
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12.66667  1.472123  12.31982  2000.870
12.88889  1.489651  12.64890  2070.798
13.11111  1.507178  12.98188  2142.114
13.33333  1.524706  13.31876  2214.829
13.55556  1.542234  13.65953  2288.952
13.77778  1.559761  14.00420  2364.493
14.00000  1.577289  14.35276  2441.463
14.22222  1.594817  14.70521  2519.871
14.44444  1.612345  15.06156  2599.728
14.66667  1.629873  15.42181  2681.042
14.88889  1.647401  15.78595  2763.825
15.11111  1.664929  16.15399  2848.085
15.33333  1.682458  16.52592  2933.833
15.55556  1.699986  16.90175  3021.078
15.77778  1.717514  17.28147  3109.830
16.00000  1.735042  17.66509  3200.099
16.22222  1.752571  18.05260  3291.895
16.44444  1.770099  18.44401  3385.226
16.66667  1.787628  18.83931  3480.104
16.88889  1.805156  19.23851  3576.537
17.11111  1.822685  19.64160  3674.535
17.33333  1.840214  20.04859  3774.108
17.55556  1.857742  20.45948  3875.264
17.77778  1.875271  20.87425  3978.015
18.00000  1.892800  21.29293  4082.368
18.22222  1.910329  21.71550  4188.334
18.44444  1.927858  22.14196  4295.922
18.66667  1.945387  22.57232  4405.142
18.88889  1.962916  23.00658  4516.002
19.11111  1.980445  23.44473  4628.512
19.33333  1.997974  23.88678  4742.682
19.55556  2.015503  24.33272  4858.521
19.77778  2.033033  24.78256  4976.038
20.00000  2.050562  25.23629  5095.243
END FTABLE 47
FTABLE      2
 91    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.000000  0.000000  0.000000
0.010000  0.400000  0.004000  0.001000
0.200000  0.422000  0.080000  0.099000
0.300000  0.433000  0.123000  0.182000
0.400000  0.443000  0.166000  0.258000
0.500000  0.453000  0.211000  0.309000
0.600000  0.464000  0.256000  0.352000
0.700000  0.474000  0.302000  0.391000
0.800000  0.484000  0.350000  0.426000
0.900000  0.495000  0.399000  0.458000
1.000000  0.505000  0.448000  0.488000
1.100000  0.516000  0.499000  0.517000
1.200000  0.526000  0.551000  0.544000
1.300000  0.536000  0.603000  0.570000
1.400000  0.547000  0.657000  0.594000
1.500000  0.557000  0.712000  0.618000
1.600000  0.567000  0.768000  0.641000
1.700000  0.578000  0.825000  0.662000
1.800000  0.588000  0.883000  0.684000
1.900000  0.598000  0.942000  0.704000
2.000000  0.609000  1.002000  0.724000
2.100000  0.619000  1.063000  0.744000
2.200000  0.630000  1.125000  0.763000
2.300000  0.640000  1.188000  0.781000
2.400000  0.650000  1.252000  0.800000
2.500000  0.661000  1.317000  0.817000
2.600000  0.671000  1.384000  0.835000
2.700000  0.681000  1.451000  0.852000
2.800000  0.692000  1.519000  0.868000
2.900000  0.702000  1.589000  0.885000
3.000000  0.713000  1.659000  0.901000
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3.100000  0.723000  1.731000  0.916000
3.200000  0.733000  1.803000  0.932000
3.300000  0.744000  1.877000  0.947000
3.400000  0.754000  1.952000  0.962000
3.500000  0.764000  2.027000  0.977000
3.600000  0.775000  2.104000  0.991000
3.700000  0.785000  2.182000  1.006000
3.800000  0.796000  2.260000  1.020000
3.900000  0.806000  2.340000  1.034000
4.000000  0.816000  2.421000  1.047000
4.100000  0.827000  2.503000  1.061000
4.200000  0.837000  2.586000  1.074000
4.300000  0.847000  2.670000  1.088000
4.400000  0.858000  2.755000  1.101000
4.500000  0.868000  2.841000  1.114000
4.600000  0.879000  2.928000  1.167000
4.700000  0.889000  3.016000  1.317000
4.800000  0.899000  3.106000  1.519000
4.900000  0.910000  3.196000  1.763000
5.000000  0.920000  3.287000  2.042000
5.100000  0.930000  3.380000  2.351000
5.200000  0.941000  3.473000  2.688000
5.300000  0.951000  3.567000  3.051000
5.400000  0.961000  3.663000  3.437000
5.500000  0.972000  3.759000  3.846000
5.600000  0.982000  3.857000  4.276000
5.700000  0.993000  3.955000  4.725000
5.800000  1.003000  4.055000  5.195000
5.900000  1.013000  4.156000  5.682000
6.000000  1.024000  4.257000  6.188000
6.100000  1.034000  4.360000  6.710000
6.200000  1.044000  4.464000  7.249000
6.300000  1.055000  4.569000  7.804000
6.400000  1.065000  4.675000  8.375000
6.500000  1.076000  4.782000  8.961000
6.600000  1.086000  4.890000  9.619000
6.700000  1.096000  4.999000  10.01100
6.800000  1.107000  5.109000  10.38600
6.900000  1.117000  5.220000  10.74700
7.000000  1.127000  5.332000  11.09500
7.100000  1.138000  5.445000  11.93200
7.200000  1.148000  5.559000  13.17300
7.300000  1.159000  5.675000  14.67400
7.400000  1.169000  5.791000  16.38500
7.500000  1.179000  5.908000  18.27600
7.600000  1.190000  6.027000  20.32800
7.700000  1.200000  6.146000  22.52600
7.800000  1.210000  6.266000  24.86000
7.900000  1.221000  6.388000  27.32100
8.000000  1.231000  6.511000  29.90200
8.200000  1.252000  6.759000  35.39700
8.400000  1.273000  7.011000  41.30800
8.600000  1.293000  7.268000  47.60400
8.800000  1.314000  7.528000  54.26000
9.000000  1.335000  7.793000  61.25600
9.200000  1.356000  8.062000  68.99300
9.400000  1.376000  8.336000  75.93300
9.600000  1.397000  8.613000  83.49600
9.800000  1.418000  8.895000  91.51200
10.00000  1.439000  9.180000  999.0000
END FTABLE  2
FTABLE     50
 91    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.215174  0.000000  0.000000
0.222222  0.222006  0.048576  2.063491
0.444444  0.228837  0.098669  6.441103
0.666667  0.235669  0.150281  12.47488
0.888889  0.242501  0.203411  19.89232
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1.111111	0.249332	0.258059	28.53285
1.333333	0.256164	0.314225	38.29094
1.555556	0.262996	0.371910	49.09335
1.777778	0.269827	0.431112	60.88756
2.000000	0.276659	0.491833	73.63528
2.222222	0.283491	0.554072	87.30834
2.444444	0.290323	0.617829	101.8860
2.666667	0.297155	0.683104	117.3531
2.888889	0.303986	0.749898	133.6988
3.111111	0.310818	0.818209	150.9156
3.333333	0.317650	0.888039	168.9988
3.555556	0.324482	0.959387	187.9457
3.777778	0.331314	1.032254	207.7554
4.000000	0.338146	1.106638	228.4283
4.222222	0.344979	1.182541	249.9660
4.444444	0.351811	1.259962	272.3712
4.666667	0.358643	1.338901	295.6472
4.888889	0.365475	1.419359	319.7981
5.111111	0.372307	1.501335	344.8284
5.333333	0.379140	1.584829	370.7434
5.555556	0.385972	1.669841	397.5484
5.777778	0.392804	1.756372	425.2494
6.000000	0.399637	1.844421	453.8525
6.222222	0.406469	1.933988	483.3640
6.444444	0.413301	2.025074	513.7906
6.666667	0.420134	2.117678	545.1391
6.888889	0.426966	2.211800	577.4163
7.111111	0.433799	2.307440	610.6294
7.333333	0.440632	2.404599	644.7856
7.555556	0.447464	2.503277	679.8922
7.777778	0.454297	2.603472	715.9566
8.000000	0.461129	2.705186	752.9861
8.222222	0.467962	2.808419	790.9884
8.444444	0.474795	2.913170	829.9710
8.666667	0.481628	3.019439	869.9416
8.888889	0.488461	3.127226	910.9077
9.111111	0.495293	3.236532	952.8771
9.333333	0.502126	3.347357	995.8574
9.555556	0.508959	3.459700	1039.856
9.777778	0.515792	3.573561	1084.882
10.00000	0.522625	3.688941	1130.942
10.22222	0.529458	3.805839	1178.043
10.44444	0.536291	3.924255	1226.195
10.66667	0.543124	4.044190	1275.404
10.88889	0.549957	4.165644	1325.678
11.11111	0.556791	4.288616	1377.025
11.33333	0.563624	4.413106	1429.453
11.55556	0.570457	4.539115	1482.970
11.77778	0.577290	4.666643	1537.583
12.00000	0.584124	4.795689	1593.301
12.22222	0.590957	4.926253	1650.130
12.44444	0.597790	5.058336	1708.079
12.66667	0.604624	5.191938	1767.155
12.88889	0.611457	5.327058	1827.366
13.11111	0.618290	5.463696	1888.720
13.33333	0.625124	5.601854	1951.224
13.55556	0.631957	5.741529	2014.887
13.77778	0.638791	5.882724	2079.715
14.00000	0.645625	6.025436	2145.717
14.22222	0.652458	6.169668	2212.899
14.44444	0.659292	6.315418	2281.271
14.66667	0.666126	6.462687	2350.838
14.88889	0.672959	6.611474	2421.610
15.11111	0.679793	6.761780	2493.592
15.33333	0.686627	6.913604	2566.794
15.55556	0.693461	7.066947	2641.222
15.77778	0.700295	7.221809	2716.884
16.00000	0.707129	7.378189	2793.788
16.22222	0.713962	7.536088	2871.941
16.44444	0.720796	7.695506	2951.350

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16.66667  0.727630  7.856442  3032.023
16.88889  0.734465  8.018897  3113.967
17.11111  0.741299  8.182871  3197.190
17.33333  0.748133  8.348363  3281.699
17.55556  0.754967  8.515374  3367.502
17.77778  0.761801  8.683904  3454.605
18.00000  0.768635  8.853953  3543.017
18.22222  0.775469  9.025520  3632.744
18.44444  0.782304  9.198606  3723.794
18.66667  0.789138  9.373210  3816.174
18.88889  0.795972  9.549334  3909.892
19.11111  0.802807  9.726976  4004.954
19.33333  0.809641  9.906137  4101.369
19.55556  0.816476  10.08682  4199.142
19.77778  0.823310  10.26901  4298.282
20.00000  0.830145  10.45273  4398.795
END FTABLE 50
FTABLE      3
 83    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.000000  0.000000  0.000000
0.010000  0.100000  0.001000  0.001000
0.100000  0.104000  0.010000  0.009000
0.200000  0.108000  0.021000  0.025000
0.300000  0.112000  0.032000  0.037000
0.400000  0.116000  0.044000  0.045000
0.500000  0.120000  0.056000  0.053000
0.600000  0.124000  0.068000  0.059000
0.700000  0.128000  0.081000  0.065000
0.800000  0.132000  0.094000  0.070000
0.900000  0.135000  0.107000  0.075000
1.000000  0.139000  0.121000  0.079000
1.100000  0.143000  0.135000  0.083000
1.200000  0.147000  0.150000  0.088000
1.300000  0.151000  0.165000  0.091000
1.400000  0.155000  0.180000  0.095000
1.500000  0.159000  0.196000  0.099000
1.600000  0.162000  0.212000  0.102000
1.700000  0.166000  0.228000  0.106000
1.800000  0.170000  0.245000  0.109000
1.900000  0.174000  0.262000  0.112000
2.000000  0.178000  0.280000  0.115000
2.100000  0.182000  0.298000  0.153000
2.200000  0.185000  0.316000  0.220000
2.300000  0.189000  0.335000  0.292000
2.400000  0.193000  0.354000  0.337000
2.500000  0.197000  0.373000  0.375000
2.600000  0.201000  0.393000  0.577000
2.700000  0.204000  0.413000  0.915000
2.800000  0.208000  0.434000  1.342000
2.900000  0.212000  0.455000  1.841000
3.000000  0.216000  0.476000  2.401000
3.100000  0.220000  0.498000  3.017000
3.200000  0.223000  0.520000  3.684000
3.300000  0.227000  0.542000  4.397000
3.400000  0.231000  0.565000  5.068000
3.500000  0.235000  0.588000  6.370000
3.600000  0.238000  0.612000  8.333000
3.700000  0.242000  0.636000  10.72200
3.800000  0.246000  0.660000  13.45300
3.900000  0.250000  0.685000  16.48200
4.000000  0.253000  0.710000  19.77800
4.100000  0.257000  0.735000  23.31700
4.200000  0.261000  0.761000  27.08200
4.300000  0.265000  0.787000  31.05900
4.400000  0.268000  0.814000  35.23700
4.500000  0.272000  0.841000  39.60600
4.600000  0.276000  0.868000  44.15700
4.700000  0.280000  0.896000  48.88300
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4.800000  0.283000  0.924000  53.77700
4.900000  0.287000  0.952000  58.83400
5.000000  0.291000  0.981000  64.04700
5.100000  0.294000  1.010000  69.41300
5.200000  0.298000  1.040000  74.92800
5.300000  0.302000  1.070000  80.58600
5.400000  0.306000  1.100000  86.38500
5.500000  0.309000  1.131000  92.32100
5.600000  0.313000  1.162000  98.39000
5.700000  0.317000  1.193000  104.5910
5.800000  0.320000  1.225000  110.9190
5.900000  0.324000  1.257000  117.3730
6.000000  0.328000  1.290000  123.9510
6.100000  0.331000  1.323000  130.6490
6.200000  0.335000  1.356000  137.4660
6.300000  0.339000  1.390000  144.3990
6.400000  0.342000  1.424000  151.4470
6.500000  0.346000  1.458000  158.6080
6.600000  0.350000  1.493000  165.8790
6.700000  0.353000  1.528000  173.2600
6.800000  0.357000  1.564000  180.7490
6.900000  0.361000  1.600000  188.3440
7.000000  0.364000  1.636000  196.0430
7.100000  0.368000  1.673000  203.8460
7.200000  0.372000  1.710000  211.7510
7.300000  0.375000  1.747000  219.7560
7.400000  0.379000  1.785000  227.8610
7.500000  0.382000  1.823000  236.0640
7.600000  0.386000  1.862000  244.3630
7.700000  0.390000  1.901000  252.7590
7.800000  0.393000  1.940000  261.2490
7.900000  0.397000  1.980000  269.8330
8.000000  0.401000  2.020000  278.5100
8.100000  0.600000  3.300000  999.0000
END FTABLE  3
FTABLE     52
 91    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.330716  0.000000  0.000000
0.222222  0.341216  0.074659  2.222447
0.444444  0.351715  0.151651  6.937281
0.666667  0.362215  0.230977  13.43586
0.888889  0.372715  0.312636  21.42469
1.111111  0.383214  0.396628  30.73082
1.333333  0.393714  0.482954  41.24061
1.555556  0.404214  0.571612  52.87515
1.777778  0.414714  0.662604  65.57791
2.000000  0.425214  0.755930  79.30763
2.222222  0.435714  0.851588  94.03395
2.444444  0.446214  0.949580  109.7345
2.666667  0.456714  1.049905  126.3931
2.888889  0.467214  1.152564  143.9980
3.111111  0.477714  1.257556  162.5411
3.333333  0.488214  1.364881  182.0173
3.555556  0.498714  1.474540  202.4238
3.777778  0.509214  1.586532  223.7594
4.000000  0.519715  1.700857  246.0248
4.222222  0.530215  1.817516  269.2217
4.444444  0.540715  1.936508  293.3528
4.666667  0.551216  2.057834  318.4218
4.888889  0.561716  2.181493  344.4330
5.111111  0.572216  2.307486  371.3916
5.333333  0.582717  2.435811  399.3028
5.555556  0.593217  2.566471  428.1728
5.777778  0.603718  2.699464  458.0076
6.000000  0.614218  2.834790  488.8141
6.222222  0.624719  2.972450  520.5990
6.444444  0.635220  3.112443  553.3694
6.666667  0.645721  3.254770  587.1327
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6.888889  0.656221  3.399430  621.8964
7.111111  0.666722  3.546423  657.6680
7.333333  0.677223  3.695751  694.4554
7.555556  0.687724  3.847411  732.2663
7.777778  0.698225  4.001406  771.1088
8.000000  0.708726  4.157733  810.9909
8.222222  0.719227  4.316395  851.9206
8.444444  0.729728  4.477390  893.9062
8.666667  0.740229  4.640718  936.9558
8.888889  0.750730  4.806380  981.0776
9.111111  0.761231  4.974376  1026.280
9.333333  0.771732  5.144705  1072.571
9.555556  0.782233  5.317368  1119.960
9.777778  0.792735  5.492364  1168.454
10.00000  0.803236  5.669694  1218.061
10.22222  0.813737  5.849358  1268.791
10.44444  0.824239  6.031356  1320.652
10.66667  0.834740  6.215686  1373.652
10.88889  0.845242  6.402351  1427.799
11.11111  0.855743  6.591349  1483.102
11.33333  0.866245  6.782681  1539.568
11.55556  0.876746  6.976347  1597.208
11.77778  0.887248  7.172346  1656.028
12.00000  0.897749  7.370679  1716.037
12.22222  0.908251  7.571346  1777.244
12.44444  0.918753  7.774347  1839.657
12.66667  0.929255  7.979681  1903.284
12.88889  0.939757  8.187349  1968.133
13.11111  0.950258  8.397350  2034.214
13.33333  0.960760  8.609686  2101.533
13.55556  0.971262  8.824355  2170.099
13.77778  0.981764  9.041358  2239.922
14.00000  0.992266  9.260695  2311.008
14.22222  1.002768  9.482365  2383.365
14.44444  1.013270  9.706369  2457.004
14.66667  1.023772  9.932707  2531.930
14.88889  1.034275  10.16138  2608.153
15.11111  1.044777  10.39239  2685.681
15.33333  1.055279  10.62572  2764.522
15.55556  1.065781  10.86140  2844.683
15.77778  1.076284  11.09941  2926.174
16.00000  1.086786  11.33975  3009.002
16.22222  1.097289  11.58242  3093.175
16.44444  1.107791  11.82743  3178.701
16.66667  1.118293  12.07477  3265.588
16.88889  1.128796  12.32445  3353.845
17.11111  1.139299  12.57646  3443.479
17.33333  1.149801  12.83080  3534.498
17.55556  1.160304  13.08748  3626.910
17.77778  1.170807  13.34649  3720.724
18.00000  1.181309  13.60784  3815.946
18.22222  1.191812  13.87152  3912.585
18.44444  1.202315  14.13754  4010.649
18.66667  1.212818  14.40588  4110.146
18.88889  1.223321  14.67657  4211.083
19.11111  1.233823  14.94958  4313.468
19.33333  1.244326  15.22493  4417.309
19.55556  1.254829  15.50262  4522.615
19.77778  1.265332  15.78263  4629.391
20.00000  1.275836  16.06499  4737.648
END FTABLE 52
FTABLE      4
 97    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.000000  0.000000  0.000000
0.010000  0.180000  0.002000  0.001000
0.200000  0.195000  0.035000  0.124000
0.300000  0.202000  0.055000  0.228000
0.400000  0.209000  0.075000  0.323000
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0.500000	0.216000	0.096000	0.386000
0.600000	0.223000	0.118000	0.440000
0.700000	0.230000	0.140000	0.488000
0.800000	0.236000	0.164000	0.532000
0.900000	0.243000	0.187000	0.573000
1.000000	0.250000	0.212000	0.610000
1.100000	0.257000	0.237000	0.646000
1.200000	0.264000	0.263000	0.680000
1.300000	0.271000	0.290000	0.712000
1.400000	0.278000	0.317000	0.743000
1.500000	0.284000	0.345000	0.772000
1.600000	0.291000	0.374000	0.801000
1.700000	0.298000	0.403000	0.828000
1.800000	0.305000	0.433000	0.855000
1.900000	0.312000	0.464000	0.880000
2.000000	0.319000	0.495000	0.905000
2.100000	0.326000	0.527000	0.930000
2.200000	0.333000	0.560000	0.954000
2.300000	0.339000	0.594000	0.977000
2.400000	0.346000	0.628000	0.999000
2.500000	0.353000	0.663000	1.022000
2.600000	0.360000	0.698000	1.043000
2.700000	0.367000	0.735000	1.064000
2.800000	0.374000	0.772000	1.085000
2.900000	0.381000	0.809000	1.106000
3.000000	0.388000	0.848000	1.126000
3.100000	0.394000	0.887000	1.145000
3.200000	0.401000	0.926000	1.165000
3.300000	0.408000	0.967000	1.184000
3.400000	0.415000	1.008000	1.203000
3.500000	0.422000	1.049000	1.221000
3.600000	0.429000	1.092000	1.239000
3.700000	0.436000	1.135000	1.257000
3.800000	0.443000	1.179000	1.275000
3.900000	0.449000	1.223000	1.292000
4.000000	0.456000	1.269000	1.309000
4.100000	0.463000	1.314000	1.326000
4.200000	0.470000	1.361000	1.343000
4.300000	0.477000	1.408000	1.360000
4.400000	0.484000	1.456000	1.376000
4.500000	0.491000	1.505000	1.392000
4.600000	0.498000	1.554000	1.408000
4.700000	0.504000	1.604000	1.424000
4.800000	0.511000	1.655000	1.439000
4.900000	0.518000	1.706000	1.455000
5.000000	0.525000	1.758000	1.470000
5.100000	0.532000	1.811000	1.485000
5.200000	0.539000	1.865000	1.500000
5.300000	0.546000	1.919000	1.515000
5.400000	0.552000	1.974000	1.530000
5.500000	0.559000	2.029000	1.544000
5.600000	0.566000	2.085000	1.559000
5.700000	0.573000	2.142000	1.573000
5.800000	0.580000	2.200000	1.587000
5.900000	0.587000	2.258000	1.601000
6.000000	0.594000	2.317000	1.615000
6.100000	0.601000	2.377000	1.629000
6.200000	0.607000	2.437000	1.643000
6.300000	0.614000	2.498000	1.656000
6.400000	0.621000	2.560000	1.670000
6.500000	0.628000	2.622000	1.683000
6.600000	0.635000	2.685000	1.696000
6.700000	0.642000	2.749000	1.709000
6.800000	0.649000	2.814000	1.722000
6.900000	0.656000	2.879000	1.735000
7.000000	0.662000	2.945000	1.748000
7.100000	0.669000	3.011000	1.761000
7.200000	0.676000	3.078000	1.774000
7.300000	0.683000	3.146000	1.786000
7.400000	0.690000	3.215000	1.799000

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7.500000  0.697000  3.284000  1.811000
7.600000  0.704000  3.354000  1.823000
7.700000  0.711000  3.425000  1.836000
7.800000  0.717000  3.496000  1.848000
7.900000  0.724000  3.568000  1.860000
8.000000  0.731000  3.641000  1.872000
8.100000  0.738000  3.714000  1.884000
8.200000  0.745000  3.789000  1.895000
8.300000  0.752000  3.863000  1.907000
8.400000  0.759000  3.939000  1.919000
8.500000  0.765000  4.015000  1.931000
8.600000  0.772000  4.092000  1.942000
8.700000  0.779000  4.169000  1.954000
8.800000  0.786000  4.248000  1.965000
8.900000  0.793000  4.327000  1.976000
9.000000  0.800000  4.406000  1.988000
9.200000  0.814000  4.568000  2.010000
9.400000  0.827000  4.732000  2.032000
9.600000  0.841000  4.898000  2.054000
9.800000  0.855000  5.068000  2.076000
10.00000  0.869000  5.240000  2.097000
10.10000  0.882000  5.415000  999.0000
END FTABLE  4
FTABLE     33
 91    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)    (cfs)   (ft/sec)    (Minutes)***
0.000000  0.307254  0.000000  0.000000
0.022222  0.308108  0.006837  0.125539
0.044444  0.308962  0.013694  0.397846
0.066667  0.309816  0.020569  0.780605
0.088889  0.310670  0.027463  1.258644
0.111111  0.311524  0.034377  1.822508
0.133333  0.312377  0.041309  2.465454
0.155556  0.313231  0.048260  3.182311
0.177778  0.314085  0.055230  3.968921
0.200000  0.314939  0.062219  4.821832
0.222222  0.315793  0.069227  5.738107
0.244444  0.316647  0.076255  6.715201
0.266667  0.317501  0.083301  7.750880
0.288889  0.318355  0.090366  8.843154
0.311111  0.319208  0.097450  9.990240
0.333333  0.320062  0.104553  11.19052
0.355556  0.320916  0.111675  12.44253
0.377778  0.321770  0.118816  13.74490
0.400000  0.322624  0.125976  15.09641
0.422222  0.323478  0.133155  16.49590
0.444444  0.324332  0.140352  17.94230
0.466667  0.325186  0.147569  19.43461
0.488889  0.326039  0.154805  20.97190
0.511111  0.326893  0.162060  22.55330
0.533333  0.327747  0.169334  24.17798
0.555556  0.328601  0.176626  25.84517
0.577778  0.329455  0.183938  27.55413
0.600000  0.330309  0.191269  29.30417
0.622222  0.331163  0.198619  31.09464
0.644444  0.332017  0.205987  32.92492
0.666667  0.332871  0.213375  34.79440
0.688889  0.333725  0.220782  36.70252
0.711111  0.334578  0.228207  38.64875
0.733333  0.335432  0.235652  40.63257
0.755556  0.336286  0.243115  42.65350
0.777778  0.337140  0.250598  44.71105
0.800000  0.337994  0.258099  46.80478
0.822222  0.338848  0.265620  48.93427
0.844444  0.339702  0.273159  51.09909
0.866667  0.340556  0.280718  53.29885
0.888889  0.341410  0.288295  55.53316
0.911111  0.342264  0.295891  57.80167
0.933333  0.343118  0.303507  60.10402
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0.955556  0.343972  0.311141  62.43986
0.977778  0.344825  0.318794  64.80888
1.000000  0.345679  0.326467  67.21076
1.022222  0.346533  0.334158  69.64519
1.044444  0.347387  0.341868  72.11188
1.066667  0.348241  0.349597  74.61054
1.088889  0.349095  0.357345  77.14091
1.111111  0.349949  0.365113  79.70272
1.133333  0.350803  0.372899  82.29572
1.155556  0.351657  0.380704  84.91965
1.177778  0.352511  0.388528  87.57429
1.200000  0.353365  0.396371  90.25939
1.222222  0.354219  0.404233  92.97474
1.244444  0.355073  0.412114  95.72012
1.266667  0.355927  0.420014  98.49532
1.288889  0.356781  0.427933  101.3001
1.311111  0.357635  0.435871  104.1344
1.333333  0.358489  0.443828  106.9978
1.355556  0.359343  0.451804  109.8903
1.377778  0.360197  0.459799  112.8117
1.400000  0.361051  0.467813  115.7618
1.422222  0.361905  0.475845  118.7404
1.444444  0.362759  0.483897  121.7473
1.466667  0.363613  0.491968  124.7825
1.488889  0.364466  0.500058  127.8456
1.511111  0.365320  0.508166  130.9367
1.533333  0.366174  0.516294  134.0556
1.555556  0.367028  0.524441  137.2020
1.577778  0.367882  0.532607  140.3759
1.600000  0.368736  0.540791  143.5772
1.622222  0.369590  0.548995  146.8056
1.644444  0.370444  0.557217  150.0612
1.666667  0.371298  0.565459  153.3436
1.688889  0.372152  0.573720  156.6530
1.711111  0.373006  0.581999  159.9890
1.733333  0.373860  0.590298  163.3517
1.755556  0.374714  0.598615  166.7409
1.777778  0.375568  0.606952  170.1564
1.800000  0.376422  0.615307  173.5983
1.822222  0.377276  0.623682  177.0663
1.844444  0.378130  0.632075  180.5604
1.866667  0.378984  0.640487  184.0805
1.888889  0.379838  0.648919  187.6265
1.911111  0.380692  0.657369  191.1984
1.933333  0.381546  0.665838  194.7959
1.955556  0.382400  0.674327  198.4191
1.977778  0.383255  0.682834  202.0678
2.000000  0.384109  0.691360  205.7420
END FTABLE 33
FTABLE      5
 96    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.000000  0.000000  0.000000
0.010000  0.320000  0.003000  0.001000
0.100000  0.323000  0.035000  0.026000
0.300000  0.332000  0.100000  0.126000
0.500000  0.341000  0.167000  0.184000
0.700000  0.350000  0.236000  0.228000
0.900000  0.359000  0.306000  0.265000
1.100000  0.369000  0.379000  0.297000
1.300000  0.378000  0.453000  0.326000
1.500000  0.387000  0.529000  0.353000
1.700000  0.396000  0.607000  0.378000
1.900000  0.405000  0.687000  0.401000
2.100000  0.414000  0.769000  0.423000
2.300000  0.423000  0.852000  0.444000
2.500000  0.433000  0.938000  0.464000
2.700000  0.442000  1.025000  0.483000
2.900000  0.451000  1.114000  0.501000
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3.100000	0.460000	1.205000	0.519000
3.300000	0.469000	1.297000	0.536000
3.500000	0.478000	1.392000	0.553000
3.700000	0.487000	1.488000	0.668000
3.900000	0.497000	1.586000	0.866000
4.100000	0.506000	1.686000	1.116000
4.300000	0.515000	1.788000	1.409000
4.500000	0.524000	1.892000	1.739000
4.700000	0.533000	1.998000	2.103000
4.900000	0.542000	2.105000	2.496000
5.100000	0.552000	2.214000	2.918000
5.300000	0.561000	2.325000	3.365000
5.500000	0.570000	2.438000	3.837000
5.700000	0.579000	2.553000	4.227000
5.900000	0.588000	2.670000	4.521000
6.100000	0.597000	2.788000	4.901000
6.300000	0.606000	2.908000	5.602000
6.500000	0.616000	3.030000	6.477000
6.700000	0.625000	3.154000	7.483000
6.900000	0.634000	3.280000	8.599000
7.100000	0.643000	3.408000	9.813000
7.300000	0.652000	3.537000	11.11300
7.500000	0.661000	3.669000	12.49500
7.700000	0.671000	3.802000	13.95100
7.900000	0.680000	3.937000	15.47900
8.100000	0.689000	4.073000	17.07400
8.300000	0.698000	4.212000	18.73300
8.500000	0.707000	4.353000	20.45400
8.700000	0.716000	4.495000	22.23300
8.900000	0.725000	4.639000	24.07000
9.100000	0.735000	4.785000	25.96200
9.300000	0.744000	4.933000	27.90700
9.500000	0.753000	5.083000	29.90400
9.700000	0.762000	5.234000	31.95100
9.900000	0.771000	5.387000	34.04700
10.10000	0.780000	5.543000	36.19200
10.30000	0.789000	5.700000	38.38300
10.50000	0.799000	5.859000	40.62000
10.70000	0.808000	6.019000	42.90200
10.90000	0.817000	6.182000	45.22800
11.10000	0.826000	6.346000	47.59700
11.30000	0.835000	6.512000	53.67300
11.50000	0.844000	6.680000	61.79400
11.70000	0.854000	6.850000	71.79200
11.90000	0.863000	7.022000	83.30300
12.10000	0.872000	7.196000	96.11800
12.30000	0.881000	7.371000	110.0970
12.50000	0.890000	7.548000	125.1370
12.70000	0.899000	7.727000	141.1580
12.90000	0.908000	7.908000	158.0970
13.10000	0.918000	8.091000	175.9020
13.30000	0.927000	8.276000	194.5290
13.50000	0.936000	8.462000	213.9390
13.70000	0.945000	8.650000	234.1000
13.90000	0.954000	8.840000	254.9820
14.10000	0.963000	9.032000	276.5600
14.30000	0.973000	9.226000	298.8100
14.50000	0.982000	9.422000	321.7120
14.70000	0.991000	9.619000	345.2460
14.90000	1.000000	9.819000	369.3950
15.10000	1.009000	10.02000	394.1430
15.30000	1.018000	10.22300	419.4740
15.50000	1.027000	10.42800	445.3750
15.70000	1.037000	10.63400	471.8340
15.90000	1.046000	10.84300	498.8380
16.10000	1.055000	11.05300	526.3760
16.30000	1.064000	11.26500	554.4380
16.50000	1.073000	11.47900	583.0130
16.70000	1.082000	11.69500	612.0920
16.90000	1.091000	11.91300	641.6660

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17.10000  1.101000  12.13200  671.7280
17.30000  1.110000  12.35400  702.2680
17.50000  1.119000  12.57700  733.2790
17.70000  1.128000  12.80200  764.7550
17.90000  1.137000  13.02900  796.6870
18.10000  1.146000  13.25700  829.0700
18.30000  1.156000  13.48800  861.8970
18.50000  1.165000  13.72000  895.1620
18.70000  1.174000  13.95400  9999.000
END FTABLE  5
FTABLE      6
 81    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.000000  0.000000  0.000000
0.100000  0.350000  0.035000  0.035000
0.200000  0.360000  0.070000  0.099000
0.300000  0.364000  0.107000  0.182000
0.400000  0.369000  0.144000  0.258000
0.500000  0.373000  0.181000  0.309000
0.600000  0.377000  0.219000  0.352000
0.700000  0.382000  0.257000  0.391000
0.800000  0.386000  0.296000  0.426000
0.900000  0.391000  0.335000  0.458000
1.000000  0.395000  0.374000  0.488000
1.100000  0.400000  0.414000  0.517000
1.200000  0.404000  0.454000  0.544000
1.300000  0.409000  0.495000  0.570000
1.400000  0.413000  0.536000  0.594000
1.500000  0.418000  0.578000  0.618000
1.600000  0.422000  0.620000  0.641000
1.700000  0.426000  0.662000  0.662000
1.800000  0.431000  0.705000  0.684000
1.900000  0.435000  0.749000  0.704000
2.000000  0.440000  0.793000  0.724000
2.100000  0.444000  0.837000  0.744000
2.200000  0.449000  0.881000  0.763000
2.300000  0.453000  0.927000  0.781000
2.400000  0.457000  0.972000  0.800000
2.500000  0.462000  1.018000  0.817000
2.600000  0.466000  1.064000  0.835000
2.700000  0.471000  1.111000  0.852000
2.800000  0.475000  1.158000  0.868000
2.900000  0.479000  1.206000  0.885000
3.000000  0.484000  1.254000  0.901000
3.100000  0.488000  1.303000  0.916000
3.200000  0.493000  1.352000  0.932000
3.300000  0.497000  1.401000  0.947000
3.400000  0.501000  1.451000  0.962000
3.500000  0.506000  1.501000  0.977000
3.600000  0.510000  1.552000  0.991000
3.700000  0.514000  1.603000  1.006000
3.800000  0.519000  1.655000  1.020000
3.900000  0.523000  1.707000  1.034000
4.000000  0.527000  1.759000  1.047000
4.100000  0.532000  1.812000  1.061000
4.200000  0.536000  1.865000  1.074000
4.300000  0.540000  1.919000  1.088000
4.400000  0.545000  1.973000  1.101000
4.500000  0.549000  2.028000  1.114000
4.600000  0.553000  2.083000  1.126000
4.700000  0.558000  2.138000  1.139000
4.800000  0.562000  2.194000  1.152000
4.900000  0.566000  2.250000  1.164000
5.000000  0.571000  2.307000  1.176000
5.100000  0.575000  2.364000  1.188000
5.200000  0.579000  2.422000  1.200000
5.300000  0.584000  2.480000  1.212000
5.400000  0.588000  2.539000  1.224000
5.500000  0.592000  2.598000  1.236000
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5.600000  0.597000  2.657000  1.247000
5.700000  0.601000  2.717000  1.258000
5.800000  0.605000  2.777000  1.270000
5.900000  0.609000  2.837000  1.281000
6.000000  0.614000  2.899000  1.292000
6.100000  0.618000  2.960000  1.303000
6.200000  0.622000  3.022000  1.314000
6.300000  0.627000  3.084000  1.325000
6.400000  0.631000  3.147000  1.336000
6.500000  0.635000  3.210000  1.346000
6.600000  0.639000  3.274000  1.357000
6.700000  0.644000  3.338000  1.367000
6.800000  0.648000  3.403000  1.378000
6.900000  0.652000  3.468000  1.388000
7.000000  0.656000  3.533000  1.399000
7.100000  0.661000  3.599000  1.409000
7.200000  0.665000  3.665000  1.419000
7.300000  0.669000  3.732000  1.429000
7.400000  0.673000  3.799000  1.439000
7.500000  0.677000  3.867000  1.449000
7.600000  0.682000  3.935000  1.459000
7.700000  0.686000  4.003000  1.679000
7.800000  0.690000  4.072000  2.074000
7.900000  0.694000  4.141000  2.582000
8.000000  0.699000  4.211000  999.0000
END FTABLE  6
FTABLE     48
 91    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.235308  0.000000  0.000000
0.111111  0.240537  0.026436  0.806799
0.222222  0.245767  0.053453  2.529307
0.333333  0.250997  0.081051  4.914880
0.444444  0.256226  0.109230  7.856487
0.555556  0.261456  0.137990  11.28874
0.666667  0.266686  0.167331  15.16677
0.777778  0.271916  0.197253  19.45791
0.888889  0.277145  0.227757  24.13744
1.000000  0.282375  0.258841  29.18625
1.111111  0.287605  0.290507  34.58926
1.222222  0.292835  0.322754  40.33447
1.333333  0.298065  0.355581  46.41225
1.444444  0.303295  0.388990  52.81484
1.555556  0.308525  0.422980  59.53596
1.666667  0.313755  0.457551  66.57055
1.777778  0.318985  0.492704  73.91453
1.888889  0.324215  0.528437  81.56467
2.000000  0.329445  0.564751  89.51841
2.111111  0.334675  0.601647  97.77377
2.222222  0.339905  0.639124  106.3293
2.333333  0.345135  0.677181  115.1838
2.444444  0.350366  0.715820  124.3367
2.555556  0.355596  0.755040  133.7876
2.666667  0.360826  0.794842  143.5363
2.777778  0.366056  0.835224  153.5829
2.888889  0.371287  0.876187  163.9278
3.000000  0.376517  0.917732  174.5714
3.111111  0.381747  0.959858  185.5143
3.222222  0.386978  1.002565  196.7574
3.333333  0.392208  1.045853  208.3015
3.444444  0.397438  1.089722  220.1476
3.555556  0.402669  1.134173  232.2969
3.666667  0.407899  1.179204  244.7504
3.777778  0.413130  1.224817  257.5096
3.888889  0.418360  1.271011  270.5756
4.000000  0.423591  1.317786  283.9499
4.111111  0.428821  1.365142  297.6339
4.222222  0.434052  1.413079  311.6292
4.333333  0.439282  1.461598  325.9372
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4.444444  0.444513  1.510698  340.5594
4.555556  0.449744  1.560379  355.4976
4.666667  0.454974  1.610641  370.7534
4.777778  0.460205  1.661484  386.3283
4.888889  0.465436  1.712909  402.2242
5.000000  0.470667  1.764914  418.4426
5.111111  0.475897  1.817501  434.9854
5.222222  0.481128  1.870669  451.8543
5.333333  0.486359  1.924419  469.0510
5.444444  0.491590  1.978749  486.5773
5.555556  0.496821  2.033661  504.4351
5.666667  0.502052  2.089154  522.6261
5.777778  0.507283  2.145228  541.1521
5.888889  0.512514  2.201883  560.0150
6.000000  0.517745  2.259120  579.2166
6.111111  0.522976  2.316938  598.7587
6.222222  0.528207  2.375337  618.6433
6.333333  0.533438  2.434317  638.8720
6.444444  0.538669  2.493878  659.4469
6.555556  0.543900  2.554021  680.3697
6.666667  0.549131  2.614745  701.6423
6.777778  0.554362  2.676050  723.2666
6.888889  0.559593  2.737937  745.2445
7.000000  0.564825  2.800404  767.5778
7.111111  0.570056  2.863453  790.2685
7.222222  0.575287  2.927083  813.3183
7.333333  0.580518  2.991295  836.7292
7.444444  0.585750  3.056087  860.5030
7.555556  0.590981  3.121461  884.6417
7.666667  0.596213  3.187417  909.1471
7.777778  0.601444  3.253953  934.0210
7.888889  0.606675  3.321071  959.2654
8.000000  0.611907  3.388770  984.8822
8.111111  0.617138  3.457050  1010.873
8.222222  0.622370  3.525912  1037.240
8.333333  0.627601  3.595355  1063.985
8.444444  0.632833  3.665379  1091.110
8.555556  0.638064  3.735984  1118.617
8.666667  0.643296  3.807171  1146.507
8.777778  0.648528  3.878939  1174.783
8.888889  0.653759  3.951288  1203.446
9.000000  0.658991  4.024219  1232.498
9.111111  0.664223  4.097730  1261.941
9.222222  0.669454  4.171824  1291.777
9.333333  0.674686  4.246498  1322.008
9.444444  0.679918  4.321754  1352.636
9.555556  0.685150  4.397591  1383.662
9.666667  0.690382  4.474009  1415.088
9.777778  0.695613  4.551009  1446.917
9.888889  0.700845  4.628590  1479.150
10.00000  0.706077  4.706752  1511.788
END FTABLE 48
FTABLE      7
 82    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.000000  0.000000  0.000000
0.010000  0.590000  0.006000  0.001000
0.100000  0.602000  0.057000  0.026000
0.200000  0.613000  0.118000  0.074000
0.300000  0.624000  0.180000  0.126000
0.400000  0.635000  0.242000  0.158000
0.500000  0.645000  0.306000  0.184000
0.600000  0.656000  0.371000  0.207000
0.700000  0.667000  0.437000  0.228000
0.800000  0.678000  0.504000  0.247000
0.900000  0.689000  0.573000  0.265000
1.000000  0.700000  0.642000  0.281000
1.100000  0.711000  0.712000  0.297000
1.200000  0.722000  0.784000  0.347000
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 1.300000  0.733000  0.856000  0.425000
 1.400000  0.744000  0.930000  0.522000
 1.500000  0.755000  1.005000  0.634000
 1.600000  0.766000  1.081000  0.758000
 1.700000  0.777000  1.158000  0.894000
 1.800000  0.788000  1.236000  1.037000
 1.900000  0.799000  1.315000  1.132000
 2.000000  0.810000  1.395000  1.218000
 2.100000  0.821000  1.476000  1.297000
 2.200000  0.832000  1.559000  1.370000
 2.300000  0.842000  1.642000  1.440000
 2.400000  0.853000  1.727000  1.506000
 2.500000  0.864000  1.813000  1.569000
 2.600000  0.875000  1.899000  1.629000
 2.700000  0.886000  1.987000  1.687000
 2.800000  0.897000  2.076000  1.743000
 2.900000  0.908000  2.166000  1.797000
 3.000000  0.919000  2.257000  1.850000
 3.100000  0.930000  2.349000  1.900000
 3.200000  0.941000  2.443000  1.950000
 3.300000  0.951000  2.537000  1.998000
 3.400000  0.962000  2.633000  2.045000
 3.500000  0.973000  2.729000  2.091000
 3.600000  0.984000  2.827000  2.136000
 3.700000  0.995000  2.926000  2.180000
 3.800000  1.006000  3.025000  2.223000
 3.900000  1.017000  3.126000  2.265000
 4.000000  1.027000  3.228000  2.307000
 4.100000  1.038000  3.331000  2.347000
 4.200000  1.049000  3.436000  2.387000
 4.300000  1.060000  3.541000  2.427000
 4.400000  1.071000  3.647000  2.465000
 4.500000  1.082000  3.755000  2.503000
 4.600000  1.092000  3.863000  2.541000
 4.700000  1.103000  3.973000  2.578000
 4.800000  1.114000  4.084000  2.614000
 4.900000  1.125000  4.195000  2.650000
 5.000000  1.136000  4.308000  2.685000
 5.100000  1.147000  4.422000  2.720000
 5.200000  1.157000  4.537000  2.755000
 5.300000  1.168000  4.653000  2.789000
 5.400000  1.179000  4.771000  2.822000
 5.500000  1.190000  4.889000  2.855000
 5.600000  1.201000  5.009000  2.888000
 5.700000  1.211000  5.129000  2.921000
 5.800000  1.222000  5.251000  2.953000
 5.900000  1.233000  5.373000  2.985000
 6.000000  1.244000  5.497000  3.016000
 6.100000  1.254000  5.622000  3.047000
 6.200000  1.265000  5.748000  3.078000
 6.300000  1.276000  5.875000  3.108000
 6.400000  1.287000  6.003000  3.138000
 6.500000  1.298000  6.132000  3.168000
 6.600000  1.308000  6.263000  3.198000
 6.700000  1.319000  6.394000  3.227000
 6.800000  1.330000  6.527000  3.256000
 6.900000  1.341000  6.660000  3.285000
 7.000000  1.351000  6.795000  3.314000
 7.200000  1.373000  7.068000  3.370000
 7.400000  1.394000  7.345000  3.425000
 7.600000  1.416000  7.626000  3.480000
 7.800000  1.437000  7.912000  3.534000
 8.000000  1.459000  8.202000  3.586000
 8.200000  1.480000  8.496000  3.639000
 8.400000  1.501000  8.795000  3.690000
 8.600000  1.523000  9.098000  3.741000
 8.800000  1.544000  9.406000  3.790000
 9.000000  1.565000  9.717000  999.0000
END FTABLE  7
FTABLE     54
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DRAFT

91 4

Depth (ft)	Area (acres)	Volume (acre-ft)	Outflow1 (cfs)	Velocity (ft/sec)	Travel Time*** (Minutes)***
0.000000	0.766299	0.000000	0.000000		
0.044444	0.769705	0.034133	0.301288		
0.088889	0.773112	0.068418	0.953820		
0.133333	0.776518	0.102854	1.869579		
0.177778	0.779924	0.137442	3.011553		
0.222222	0.783330	0.172181	4.356578		
0.266667	0.786736	0.207071	5.888099		
0.311111	0.790142	0.242113	7.593393		
0.355556	0.793548	0.277306	9.462229		
0.400000	0.796954	0.312651	11.48611		
0.444444	0.800361	0.348147	13.65783		
0.488889	0.803767	0.383794	15.97113		
0.533333	0.807173	0.419593	18.42056		
0.577778	0.810579	0.455543	21.00126		
0.622222	0.813985	0.491644	23.70888		
0.666667	0.817391	0.527897	26.53952		
0.711111	0.820797	0.564301	29.48962		
0.755556	0.824204	0.600857	32.55595		
0.800000	0.827610	0.637564	35.73553		
0.844444	0.831016	0.674422	39.02562		
0.888889	0.834422	0.711432	42.42370		
0.933333	0.837828	0.748593	45.92742		
0.977778	0.841234	0.785905	49.53461		
1.022222	0.844641	0.823369	53.24322		
1.066667	0.848047	0.860984	57.05137		
1.111111	0.851453	0.898751	60.95727		
1.155556	0.854859	0.936669	64.95925		
1.200000	0.858265	0.974739	69.05575		
1.244444	0.861671	1.012959	73.24529		
1.288889	0.865078	1.051332	77.52647		
1.333333	0.868484	1.089855	81.89800		
1.377778	0.871890	1.128530	86.35861		
1.422222	0.875296	1.167357	90.90715		
1.466667	0.878702	1.206334	95.54249		
1.511111	0.882109	1.245463	100.2636		
1.555556	0.885515	1.284744	105.0694		
1.600000	0.888921	1.324176	109.9590		
1.644444	0.892327	1.363759	114.9316		
1.688889	0.895733	1.403494	119.9861		
1.733333	0.899140	1.443380	125.1219		
1.777778	0.902546	1.483417	130.3381		
1.822222	0.905952	1.523606	135.6340		
1.866667	0.909358	1.563946	141.0089		
1.911111	0.912765	1.604438	146.4621		
1.955556	0.916171	1.645081	151.9929		
2.000000	0.919577	1.685875	157.6008		
2.044444	0.922983	1.726821	163.2851		
2.088889	0.926390	1.767918	169.0454		
2.133333	0.929796	1.809167	174.8810		
2.177778	0.933202	1.850567	180.7914		
2.222222	0.936608	1.892118	186.7761		
2.266667	0.940015	1.933821	192.8348		
2.311111	0.943421	1.975675	198.9668		
2.355556	0.946827	2.017681	205.1719		
2.400000	0.950233	2.059838	211.4495		
2.444444	0.953640	2.102146	217.7993		
2.488889	0.957046	2.144605	224.2209		
2.533333	0.960452	2.187217	230.7140		
2.577778	0.963858	2.229979	237.2781		
2.622222	0.967265	2.272893	243.9130		
2.666667	0.970671	2.315958	250.6183		
2.711111	0.974077	2.359175	257.3938		
2.755556	0.977484	2.402543	264.2391		
2.800000	0.980890	2.446062	271.1539		
2.844444	0.984296	2.489733	278.1380		
2.888889	0.987702	2.533555	285.1912		
2.933333	0.991109	2.577529	292.3131		

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2.977778  0.994515  2.621654  299.5036
3.022222  0.997921  2.665930  306.7624
3.066667  1.001328  2.710358  314.0893
3.111111  1.004734  2.754937  321.4841
3.155556  1.008140  2.799667  328.9466
3.200000  1.011547  2.844549  336.4766
3.244444  1.014953  2.889583  344.0739
3.288889  1.018359  2.934767  351.7383
3.333333  1.021766  2.980104  359.4697
3.377778  1.025172  3.025591  367.2679
3.422222  1.028578  3.071230  375.1328
3.466667  1.031985  3.117020  383.0642
3.511111  1.035391  3.162962  391.0620
3.555556  1.038797  3.209055  399.1260
3.600000  1.042204  3.255299  407.2561
3.644444  1.045610  3.301695  415.4522
3.688889  1.049016  3.348243  423.7142
3.733333  1.052423  3.394941  432.0420
3.777778  1.055829  3.441791  440.4354
3.822222  1.059235  3.488793  448.8944
3.866667  1.062642  3.535945  457.4189
3.911111  1.066048  3.583250  466.0088
3.955556  1.069454  3.630705  474.6639
4.000000  1.072861  3.678312  483.3843
END FTABLE 54
FTABLE     43
 91    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.342700  0.000000  0.000000
0.044444  0.345239  0.015288  0.227257
0.088889  0.347777  0.030688  0.718160
0.133333  0.350316  0.046201  1.405264
0.177778  0.352855  0.061827  2.259970
0.222222  0.355394  0.077566  3.264324
0.266667  0.357933  0.093418  4.405488
0.311111  0.360472  0.109382  5.673620
0.355556  0.363011  0.125460  7.060835
0.400000  0.365549  0.141650  8.560625
0.444444  0.368088  0.157953  10.16750
0.488889  0.370627  0.174369  11.87673
0.533333  0.373166  0.190898  13.68425
0.577778  0.375705  0.207539  15.58644
0.622222  0.378244  0.224293  17.58012
0.666667  0.380783  0.241161  19.66246
0.711111  0.383322  0.258141  21.83090
0.755556  0.385861  0.275234  24.08315
0.800000  0.388399  0.292440  26.41713
0.844444  0.390938  0.309758  28.83095
0.888889  0.393477  0.327190  31.32287
0.933333  0.396016  0.344734  33.89134
0.977778  0.398555  0.362391  36.53489
1.022222  0.401094  0.380161  39.25220
1.066667  0.403633  0.398044  42.04205
1.111111  0.406172  0.416040  44.90330
1.155556  0.408711  0.434148  47.83492
1.200000  0.411250  0.452369  50.83594
1.244444  0.413789  0.470704  53.90546
1.288889  0.416328  0.489151  57.04266
1.333333  0.418867  0.507711  60.24677
1.377778  0.421406  0.526383  63.51707
1.422222  0.423945  0.545169  66.85291
1.466667  0.426484  0.564067  70.25365
1.511111  0.429023  0.583078  73.71873
1.555556  0.431562  0.602203  77.24761
1.600000  0.434101  0.621440  80.83979
1.644444  0.436640  0.640789  84.49481
1.688889  0.439179  0.660252  88.21224
1.733333  0.441718  0.679827  91.99167
1.777778  0.444257  0.699516  95.83273
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1.822222  0.446796  0.719317  99.73507
1.866667  0.449335  0.739231  103.6984
1.911111  0.451874  0.759258  107.7223
1.955556  0.454413  0.779397  111.8066
2.000000  0.456952  0.799650  115.9510
2.044444  0.459491  0.820015  120.1553
2.088889  0.462030  0.840494  124.4193
2.133333  0.464569  0.861085  128.7426
2.177778  0.467108  0.881789  133.1252
2.222222  0.469647  0.902605  137.5669
2.266667  0.472186  0.923535  142.0675
2.311111  0.474725  0.944578  146.6268
2.355556  0.477264  0.965733  151.2447
2.400000  0.479803  0.987001  155.9211
2.444444  0.482342  1.008382  160.6559
2.488889  0.484882  1.029876  165.4489
2.533333  0.487421  1.051483  170.3001
2.577778  0.489960  1.073202  175.2094
2.622222  0.492499  1.095035  180.1766
2.666667  0.495038  1.116980  185.2019
2.711111  0.497577  1.139038  190.2849
2.755556  0.500116  1.161209  195.4258
2.800000  0.502655  1.183493  200.6245
2.844444  0.505194  1.205889  205.8809
2.888889  0.507734  1.228399  211.1951
2.933333  0.510273  1.251021  216.5669
2.977778  0.512812  1.273757  221.9963
3.022222  0.515351  1.296605  227.4834
3.066667  0.517890  1.319566  233.0282
3.111111  0.520429  1.342639  238.6306
3.155556  0.522968  1.365826  244.2906
3.200000  0.525508  1.389125  250.0082
3.244444  0.528047  1.412538  255.7836
3.288889  0.530586  1.436063  261.6165
3.333333  0.533125  1.459701  267.5072
3.377778  0.535664  1.483452  273.4556
3.422222  0.538204  1.507315  279.4618
3.466667  0.540743  1.531292  285.5257
3.511111  0.543282  1.555382  291.6474
3.555556  0.545821  1.579584  297.8270
3.600000  0.548360  1.603899  304.0644
3.644444  0.550900  1.628327  310.3598
3.688889  0.553439  1.652868  316.7132
3.733333  0.555978  1.677521  323.1246
3.777778  0.558517  1.702288  329.5941
3.822222  0.561056  1.727167  336.1217
3.866667  0.563596  1.752160  342.7075
3.911111  0.566135  1.777265  349.3516
3.955556  0.568674  1.802483  356.0540
4.000000  0.571213  1.827814  362.8147
END FTABLE 43
FTABLE     56
 91    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.515152  0.000000  0.000000
0.222222  0.529462  0.116068  2.183471
0.444444  0.543772  0.235316  6.827425
0.666667  0.558083  0.357745  13.24001
0.888889  0.572393  0.483353  21.13155
1.111111  0.586703  0.612142  30.32858
1.333333  0.601014  0.744110  40.71494
1.555556  0.615324  0.879259  52.20827
1.777778  0.629635  1.017588  64.74812
2.000000  0.643945  1.159096  78.28920
2.222222  0.658256  1.303785  92.79709
2.444444  0.672566  1.451655  108.2455
2.666667  0.686877  1.602704  124.6143
2.888889  0.701188  1.756933  141.8882
3.111111  0.715498  1.914343  160.0556
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3.333333	0.729809	2.074933	179.1080
3.555556	0.744120	2.238702	199.0392
3.777778	0.758431	2.405652	219.8453
4.000000	0.772741	2.575783	241.5236
4.222222	0.787052	2.749093	264.0732
4.444444	0.801363	2.925584	287.4941
4.666667	0.815674	3.105254	311.7873
4.888889	0.829985	3.288105	336.9546
5.111111	0.844296	3.474137	362.9987
5.333333	0.858607	3.663348	389.9225
5.555556	0.872918	3.855740	417.7297
5.777778	0.887229	4.051311	446.4244
6.000000	0.901540	4.250063	476.0110
6.222222	0.915851	4.451996	506.4943
6.444444	0.930162	4.657108	537.8792
6.666667	0.944473	4.865401	570.1711
6.888889	0.958784	5.076874	603.3755
7.111111	0.973096	5.291528	637.4981
7.333333	0.987407	5.509361	672.5446
7.555556	1.001718	5.730375	708.5211
7.777778	1.016029	5.954569	745.4337
8.000000	1.030341	6.181944	783.2887
8.222222	1.044652	6.412498	822.0923
8.444444	1.058963	6.646233	861.8509
8.666667	1.073275	6.883149	902.5710
8.888889	1.087586	7.123244	944.2592
9.111111	1.101898	7.366520	986.9220
9.333333	1.116209	7.612977	1030.566
9.555556	1.130521	7.862613	1075.198
9.777778	1.144832	8.115430	1120.825
10.00000	1.159144	8.371428	1167.453
10.22222	1.173455	8.630605	1215.090
10.44444	1.187767	8.892963	1263.741
10.66667	1.202079	9.158502	1313.414
10.88889	1.216390	9.427221	1364.116
11.11111	1.230702	9.699120	1415.853
11.33333	1.245014	9.974199	1468.633
11.55556	1.259326	10.25246	1522.462
11.77778	1.273637	10.53390	1577.347
12.00000	1.287949	10.81852	1633.295
12.22222	1.302261	11.10632	1690.313
12.44444	1.316573	11.39730	1748.407
12.66667	1.330885	11.69147	1807.585
12.88889	1.345197	11.98881	1867.854
13.11111	1.359509	12.28933	1929.219
13.33333	1.373821	12.59303	1991.689
13.55556	1.388133	12.89992	2055.270
13.77778	1.402445	13.20998	2119.969
14.00000	1.416757	13.52323	2185.792
14.22222	1.431069	13.83965	2252.747
14.44444	1.445381	14.15926	2320.840
14.66667	1.459694	14.48204	2390.079
14.88889	1.474006	14.80801	2460.469
15.11111	1.488318	15.13716	2532.018
15.33333	1.502630	15.46948	2604.733
15.55556	1.516943	15.80499	2678.620
15.77778	1.531255	16.14368	2753.686
16.00000	1.545567	16.48555	2829.938
16.22222	1.559880	16.83060	2907.382
16.44444	1.574192	17.17883	2986.026
16.66667	1.588505	17.53024	3065.876
16.88889	1.602817	17.88483	3146.938
17.11111	1.617130	18.24260	3229.220
17.33333	1.631442	18.60356	3312.728
17.55556	1.645755	18.96769	3397.469
17.77778	1.660067	19.33500	3483.449
18.00000	1.674380	19.70550	3570.675
18.22222	1.688693	20.07917	3659.154
18.44444	1.703005	20.45603	3748.892
18.66667	1.717318	20.83606	3839.896

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18.88889  1.731631  21.21928  3932.173
19.11111  1.745943  21.60568  4025.728
19.33333  1.760256  21.99525  4120.569
19.55556  1.774569  22.38801  4216.703
19.77778  1.788882  22.78395  4314.135
20.00000  1.803195  23.18307  4412.872
END FTABLE 56
FTABLE     59
 91    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.549816  0.000000  0.000000
0.066667  0.553482  0.036777  0.525649
0.133333  0.557148  0.073798  1.661848
0.200000  0.560814  0.111063  3.253183
0.266667  0.564480  0.148573  5.233866
0.333333  0.568146  0.186327  7.562607
0.400000  0.571811  0.224326  10.20988
0.466667  0.575477  0.262569  13.15301
0.533333  0.579143  0.301056  16.37383
0.600000  0.582809  0.339788  19.85729
0.666667  0.586475  0.378764  23.59068
0.733333  0.590141  0.417984  27.56307
0.800000  0.593807  0.457449  31.76491
0.866667  0.597473  0.497158  36.18783
0.933333  0.601139  0.537112  40.82438
1.000000  0.604804  0.577310  45.66787
1.066667  0.608470  0.617753  50.71233
1.133333  0.612136  0.658440  55.95231
1.200000  0.615802  0.699371  61.38289
1.266667  0.619468  0.740547  66.99956
1.333333  0.623134  0.781967  72.79822
1.400000  0.626800  0.823631  78.77508
1.466667  0.630466  0.865540  84.92665
1.533333  0.634132  0.907693  91.24974
1.600000  0.637798  0.950091  97.74138
1.666667  0.641464  0.992733  104.3988
1.733333  0.645130  1.035619  111.2195
1.800000  0.648796  1.078750  118.2010
1.866667  0.652462  1.122126  125.3412
1.933333  0.656128  1.165745  132.6381
2.000000  0.659794  1.209609  140.0896
2.066667  0.663460  1.253718  147.6941
2.133333  0.667126  1.298071  155.4497
2.200000  0.670792  1.342668  163.3551
2.266667  0.674458  1.387509  171.4087
2.333333  0.678124  1.432596  179.6091
2.400000  0.681790  1.477926  187.9551
2.466667  0.685456  1.523501  196.4455
2.533333  0.689122  1.569320  205.0791
2.600000  0.692788  1.615384  213.8549
2.666667  0.696454  1.661692  222.7718
2.733333  0.700120  1.708244  231.8291
2.800000  0.703786  1.755041  241.0257
2.866667  0.707452  1.802082  250.3609
2.933333  0.711118  1.849368  259.8339
3.000000  0.714784  1.896898  269.4440
3.066667  0.718450  1.944673  279.1905
3.133333  0.722116  1.992691  289.0728
3.200000  0.725782  2.040955  299.0903
3.266667  0.729448  2.089462  309.2424
3.333333  0.733115  2.138215  319.5286
3.400000  0.736781  2.187211  329.9485
3.466667  0.740447  2.236452  340.5015
3.533333  0.744113  2.285937  351.1873
3.600000  0.747779  2.335667  362.0054
3.666667  0.751445  2.385641  372.9556
3.733333  0.755111  2.435860  384.0373
3.800000  0.758777  2.486323  395.2504
3.866667  0.762444  2.537030  406.5946
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3.933333  0.766110  2.587982  418.0695
4.000000  0.769776  2.639178  429.6749
4.066667  0.773442  2.690619  441.4106
4.133333  0.777108  2.742304  453.2764
4.200000  0.780774  2.794233  465.2720
4.266667  0.784440  2.846407  477.3973
4.333333  0.788107  2.898825  489.6522
4.400000  0.791773  2.951488  502.0365
4.466667  0.795439  3.004395  514.5500
4.533333  0.799105  3.057546  527.1926
4.600000  0.802771  3.110942  539.9643
4.666667  0.806438  3.164582  552.8650
4.733333  0.810104  3.218467  565.8945
4.800000  0.813770  3.272596  579.0529
4.866667  0.817436  3.326970  592.3400
4.933333  0.821102  3.381588  605.7558
5.000000  0.824769  3.436450  619.3003
5.066667  0.828435  3.491557  632.9735
5.133333  0.832101  3.546908  646.7753
5.200000  0.835767  3.602504  660.7058
5.266667  0.839434  3.658344  674.7649
5.333333  0.843100  3.714428  688.9527
5.400000  0.846766  3.770757  703.2692
5.466667  0.850432  3.827330  717.7144
5.533333  0.854099  3.884148  732.2884
5.600000  0.857765  3.941210  746.9912
5.666667  0.861431  3.998517  761.8229
5.733333  0.865097  4.056068  776.7834
5.800000  0.868764  4.113863  791.8730
5.866667  0.872430  4.171903  807.0916
5.933333  0.876096  4.230187  822.4394
6.000000  0.879763  4.288716  837.9164
END FTABLE 59
FTABLE     60
 91    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.590220  0.000000  0.000000
0.066667  0.592844  0.039435  0.478465
0.133333  0.595467  0.079046  1.514728
0.200000  0.598091  0.118831  2.969012
0.266667  0.600714  0.158791  4.782540
0.333333  0.603337  0.198926  6.918527
0.400000  0.605961  0.239236  9.350680
0.466667  0.608584  0.279721  12.05880
0.533333  0.611208  0.320381  15.02663
0.600000  0.613831  0.361215  18.24069
0.666667  0.616455  0.402225  21.68951
0.733333  0.619078  0.443409  25.36319
0.800000  0.621702  0.484769  29.25304
0.866667  0.624325  0.526303  33.35135
0.933333  0.626948  0.568012  37.65123
1.000000  0.629572  0.609896  42.14647
1.066667  0.632195  0.651955  46.83142
1.133333  0.634819  0.694189  51.70095
1.200000  0.637442  0.736597  56.75032
1.266667  0.640066  0.779181  61.97520
1.333333  0.642689  0.821940  67.37157
1.400000  0.645313  0.864873  72.93571
1.466667  0.647936  0.907981  78.66415
1.533333  0.650559  0.951264  84.55367
1.600000  0.653183  0.994723  90.60125
1.666667  0.655806  1.038356  96.80406
1.733333  0.658430  1.082163  103.1595
1.800000  0.661053  1.126146  109.6650
1.866667  0.663677  1.170304  116.3182
1.933333  0.666300  1.214636  123.1170
2.000000  0.668924  1.259144  130.0593
2.066667  0.671547  1.303826  137.1430
2.133333  0.674171  1.348684  144.3664
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2.200000  0.676794  1.393716  151.7276
2.266667  0.679418  1.438923  159.2250
2.333333  0.682041  1.484305  166.8570
2.400000  0.684665  1.529862  174.6220
2.466667  0.687288  1.575593  182.5187
2.533333  0.689912  1.621500  190.5457
2.600000  0.692535  1.667582  198.7017
2.666667  0.695159  1.713838  206.9853
2.733333  0.697782  1.760269  215.3956
2.800000  0.700406  1.806876  223.9312
2.866667  0.703029  1.853657  232.5912
2.933333  0.705653  1.900613  241.3746
3.000000  0.708276  1.947744  250.2802
3.066667  0.710900  1.995050  259.3073
3.133333  0.713523  2.042530  268.4549
3.200000  0.716147  2.090186  277.7222
3.266667  0.718770  2.138017  287.1084
3.333333  0.721394  2.186022  296.6125
3.400000  0.724017  2.234202  306.2340
3.466667  0.726641  2.282558  315.9721
3.533333  0.729264  2.331088  325.8262
3.600000  0.731888  2.379793  335.7954
3.666667  0.734511  2.428673  345.8793
3.733333  0.737135  2.477728  356.0773
3.800000  0.739758  2.526958  366.3886
3.866667  0.742382  2.576362  376.8129
3.933333  0.745005  2.625942  387.3495
4.000000  0.747629  2.675696  397.9980
4.066667  0.750252  2.725626  408.7579
4.133333  0.752876  2.775730  419.6287
4.200000  0.755499  2.826009  430.6099
4.266667  0.758123  2.876463  441.7011
4.333333  0.760747  2.927092  452.9020
4.400000  0.763370  2.977896  464.2121
4.466667  0.765994  3.028875  475.6311
4.533333  0.768617  3.080029  487.1585
4.600000  0.771241  3.131357  498.7941
4.666667  0.773864  3.182861  510.5375
4.733333  0.776488  3.234539  522.3884
4.800000  0.779111  3.286392  534.3464
4.866667  0.781735  3.338421  546.4114
4.933333  0.784359  3.390624  558.5830
5.000000  0.786982  3.443002  570.8610
5.066667  0.789606  3.495555  583.2451
5.133333  0.792229  3.548282  595.7350
5.200000  0.794853  3.601185  608.3306
5.266667  0.797476  3.654263  621.0316
5.333333  0.800100  3.707515  633.8377
5.400000  0.802723  3.760943  646.7489
5.466667  0.805347  3.814545  659.7649
5.533333  0.807971  3.868322  672.8855
5.600000  0.810594  3.922275  686.1105
5.666667  0.813218  3.976402  699.4398
5.733333  0.815841  4.030704  712.8733
5.800000  0.818465  4.085181  726.4107
5.866667  0.821089  4.139832  740.0519
5.933333  0.823712  4.194659  753.7969
6.000000  0.826336  4.249661  767.6454
END FTABLE 60
FTABLE      8
 74    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.000000  0.000000  0.000000
0.010000  0.600000  0.006000  0.001000
0.100000  0.611000  0.069000  0.035000
0.200000  0.620000  0.129000  0.099000
0.300000  0.630000  0.191000  0.182000
0.400000  0.640000  0.253000  0.258000
0.500000  0.650000  0.316000  0.309000
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0.600000  0.660000  0.380000  0.352000
0.700000  0.669000  0.445000  0.391000
0.800000  0.679000  0.511000  0.426000
0.900000  0.689000  0.579000  0.458000
1.000000  0.699000  0.647000  0.488000
1.100000  0.709000  0.716000  0.517000
1.200000  0.719000  0.786000  0.544000
1.300000  0.728000  0.858000  0.570000
1.400000  0.738000  0.930000  0.594000
1.500000  0.748000  1.003000  0.618000
1.600000  0.758000  1.078000  0.641000
1.700000  0.768000  1.153000  0.662000
1.800000  0.777000  1.229000  0.684000
1.900000  0.787000  1.307000  0.704000
2.000000  0.797000  1.385000  0.724000
2.100000  0.807000  1.464000  0.744000
2.200000  0.817000  1.545000  0.763000
2.300000  0.827000  1.626000  0.781000
2.400000  0.836000  1.709000  0.800000
2.500000  0.846000  1.792000  0.817000
2.600000  0.856000  1.877000  0.835000
2.700000  0.866000  1.962000  0.852000
2.800000  0.876000  2.049000  0.868000
2.900000  0.886000  2.136000  0.885000
3.000000  0.895000  2.225000  0.901000
3.100000  0.905000  2.314000  0.954000
3.200000  0.915000  2.405000  1.125000
3.300000  0.925000  2.496000  1.363000
3.400000  0.935000  2.589000  1.652000
3.500000  0.944000  2.682000  1.982000
3.600000  0.954000  2.777000  2.310000
3.700000  0.964000  2.873000  2.528000
3.800000  0.974000  2.969000  2.722000
3.900000  0.984000  3.067000  2.899000
4.000000  0.994000  3.166000  3.062000
4.100000  1.003000  3.265000  3.214000
4.200000  1.013000  3.366000  3.358000
4.300000  1.023000  3.468000  3.495000
4.400000  1.033000  3.571000  3.626000
4.500000  1.043000  3.674000  3.751000
4.600000  1.052000  3.779000  3.871000
4.700000  1.062000  3.885000  3.988000
4.800000  1.072000  3.992000  4.495000
4.900000  1.082000  4.099000  5.326000
5.000000  1.092000  4.208000  6.367000
5.100000  1.102000  4.318000  7.577000
5.200000  1.111000  4.429000  8.934000
5.300000  1.121000  4.541000  10.42100
5.400000  1.131000  4.654000  12.02600
5.500000  1.141000  4.768000  13.74200
5.600000  1.151000  4.883000  15.56000
5.700000  1.161000  4.999000  17.47600
5.800000  1.170000  5.115000  19.48300
5.900000  1.180000  5.233000  21.57800
6.000000  1.190000  5.352000  23.75700
6.100000  1.200000  5.472000  26.01700
6.200000  1.210000  5.593000  28.35500
6.300000  1.219000  5.715000  30.76800
6.400000  1.229000  5.838000  33.25300
6.500000  1.239000  5.962000  35.81000
6.600000  1.249000  6.088000  38.43500
6.700000  1.259000  6.214000  40.96100
6.800000  1.269000  6.341000  42.67200
6.900000  1.278000  6.469000  44.31200
7.000000  1.288000  6.598000  45.89000
7.200000  1.308000  6.859000  48.88500
7.400000  1.327000  7.125000  999.0000
END FTABLE  8
FTABLE     61
 91    4
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Depth (ft)	Area (acres)	Volume (acre-ft)	Outflow1 (cfs)	Velocity (ft/sec)	Travel Time*** (Minutes)***
0.000000	0.458333	0.000000	0.000000		
0.111111	0.461729	0.051115	1.413369		
0.222222	0.465125	0.102606	4.466411		
0.333333	0.468520	0.154476	8.739676		
0.444444	0.471916	0.206722	14.05530		
0.555556	0.475312	0.259346	20.30162		
0.666667	0.478707	0.312347	27.39879		
0.777778	0.482103	0.365725	35.28561		
0.888889	0.485499	0.419481	43.91304		
1.000000	0.488894	0.473614	53.24059		
1.111111	0.492290	0.528124	63.23411		
1.222222	0.495686	0.583012	73.86428		
1.333333	0.499082	0.638276	85.10565		
1.444444	0.502477	0.693919	96.93583		
1.555556	0.505873	0.749938	109.3350		
1.666667	0.509269	0.806335	122.2856		
1.777778	0.512665	0.863109	135.7717		
1.888889	0.516060	0.920260	149.7790		
2.000000	0.519456	0.977789	164.2945		
2.111111	0.522852	1.035695	179.3066		
2.222222	0.526248	1.093978	194.8045		
2.333333	0.529644	1.152639	210.7784		
2.444444	0.533039	1.211677	227.2193		
2.555556	0.536435	1.271092	244.1189		
2.666667	0.539831	1.330885	261.4696		
2.777778	0.543227	1.391055	279.2645		
2.888889	0.546623	1.451602	297.4969		
3.000000	0.550019	1.512526	316.1610		
3.111111	0.553414	1.573828	335.2511		
3.222222	0.556810	1.635507	354.7621		
3.333333	0.560206	1.697564	374.6892		
3.444444	0.563602	1.759998	395.0280		
3.555556	0.566998	1.822809	415.7744		
3.666667	0.570394	1.885997	436.9244		
3.777778	0.573790	1.949563	458.4746		
3.888889	0.577186	2.013506	480.4215		
4.000000	0.580582	2.077826	502.7622		
4.111111	0.583978	2.142524	525.4937		
4.222222	0.587374	2.207599	548.6132		
4.333333	0.590770	2.273052	572.1184		
4.444444	0.594166	2.338881	596.0069		
4.555556	0.597562	2.405088	620.2765		
4.666667	0.600958	2.471673	644.9252		
4.777778	0.604354	2.538635	669.9510		
4.888889	0.607750	2.605974	695.3524		
5.000000	0.611146	2.673690	721.1276		
5.111111	0.614542	2.741784	747.2750		
5.222222	0.617938	2.810255	773.7935		
5.333333	0.621334	2.879103	800.6815		
5.444444	0.624730	2.948329	827.9380		
5.555556	0.628126	3.017932	855.5618		
5.666667	0.631522	3.087912	883.5519		
5.777778	0.634918	3.158270	911.9074		
5.888889	0.638314	3.229005	940.6273		
6.000000	0.641710	3.300118	969.7110		
6.111111	0.645106	3.371608	999.1577		
6.222222	0.648502	3.443475	1028.967		
6.333333	0.651898	3.515719	1059.137		
6.444444	0.655295	3.588341	1089.669		
6.555556	0.658691	3.661340	1120.562		
6.666667	0.662087	3.734717	1151.815		
6.777778	0.665483	3.808471	1183.428		
6.888889	0.668879	3.882602	1215.400		
7.000000	0.672275	3.957110	1247.732		
7.111111	0.675671	4.031996	1280.423		
7.222222	0.679068	4.107260	1313.473		
7.333333	0.682464	4.182900	1346.882		
7.444444	0.685860	4.258918	1380.649		

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7.555556  0.689256  4.335314  1414.774
7.666667  0.692652  4.412086  1449.258
7.777778  0.696049  4.489236  1484.101
7.888889  0.699445  4.566764  1519.302
8.000000  0.702841  4.644669  1554.862
8.111111  0.706237  4.722951  1590.780
8.222222  0.709634  4.801610  1627.056
8.333333  0.713030  4.880647  1663.692
8.444444  0.716426  4.960061  1700.687
8.555556  0.719822  5.039853  1738.040
8.666667  0.723219  5.120022  1775.753
8.777778  0.726615  5.200568  1813.826
8.888889  0.730011  5.281492  1852.258
9.000000  0.733408  5.362793  1891.050
9.111111  0.736804  5.444471  1930.203
9.222222  0.740200  5.526527  1969.716
9.333333  0.743597  5.608960  2009.590
9.444444  0.746993  5.691771  2049.825
9.555556  0.750389  5.774959  2090.422
9.666667  0.753786  5.858524  2131.381
9.777778  0.757182  5.942467  2172.702
9.888889  0.760579  6.026787  2214.386
10.00000  0.763975  6.111484  2256.432
END FTABLE 61
FTABLE     34
 91    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.465014  0.000000  0.000000
0.088889  0.471903  0.041641  0.344097
0.177778  0.478792  0.083894  1.082835
0.266667  0.485682  0.126759  2.110831
0.355556  0.492571  0.170237  3.383105
0.444444  0.499460  0.214328  4.871620
0.533333  0.506349  0.259030  6.556626
0.622222  0.513239  0.304345  8.423282
0.711111  0.520128  0.350273  10.45999
0.800000  0.527017  0.396812  12.65742
0.888889  0.533906  0.443964  15.00794
0.977778  0.540796  0.491729  17.50521
1.066667  0.547685  0.540106  20.14389
1.155556  0.554574  0.589095  22.91947
1.244444  0.561464  0.638697  25.82809
1.333333  0.568353  0.688911  28.86644
1.422222  0.575242  0.739737  32.03168
1.511111  0.582131  0.791176  35.32135
1.600000  0.589021  0.843227  38.73331
1.688889  0.595910  0.895891  42.26572
1.777778  0.602799  0.949167  45.91698
1.866667  0.609689  1.003055  49.68569
1.955556  0.616578  1.057556  53.57066
2.044444  0.623467  1.112669  57.57083
2.133333  0.630357  1.168395  61.68532
2.222222  0.637246  1.224733  65.91335
2.311111  0.644135  1.281683  70.25427
2.400000  0.651025  1.339246  74.70752
2.488889  0.657914  1.397421  79.27264
2.577778  0.664803  1.456208  83.94924
2.666667  0.671693  1.515608  88.73701
2.755556  0.678582  1.575620  93.63569
2.844444  0.685472  1.636245  98.64511
2.933333  0.692361  1.697482  103.7651
3.022222  0.699250  1.759331  108.9957
3.111111  0.706140  1.821793  114.3367
3.200000  0.713029  1.884867  119.7881
3.288889  0.719918  1.948554  125.3501
3.377778  0.726808  2.012853  131.0226
3.466667  0.733697  2.077764  136.8058
3.555556  0.740587  2.143288  142.6998
3.644444  0.747476  2.209424  148.7048
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3.733333  0.754366  2.276172  154.8208
3.822222  0.761255  2.343533  161.0482
3.911111  0.768144  2.411507  167.3872
4.000000  0.775034  2.480092  173.8379
4.088889  0.781923  2.549290  180.4006
4.177778  0.788813  2.619101  187.0756
4.266667  0.795702  2.689524  193.8632
4.355556  0.802592  2.760559  200.7636
4.444444  0.809481  2.832207  207.7773
4.533333  0.816370  2.904467  214.9044
4.622222  0.823260  2.977339  222.1454
4.711111  0.830149  3.050824  229.5005
4.800000  0.837039  3.124921  236.9702
4.888889  0.843928  3.199631  244.5547
4.977778  0.850818  3.274953  252.2545
5.066667  0.857707  3.350887  260.0699
5.155556  0.864597  3.427434  268.0013
5.244444  0.871486  3.504594  276.0491
5.333333  0.878376  3.582365  284.2136
5.422222  0.885265  3.660749  292.4954
5.511111  0.892155  3.739746  300.8947
5.600000  0.899044  3.819354  309.4120
5.688889  0.905934  3.899576  318.0477
5.777778  0.912823  3.980409  326.8022
5.866667  0.919713  4.061855  335.6759
5.955556  0.926602  4.143914  344.6693
6.044444  0.933492  4.226585  353.7828
6.133333  0.940381  4.309868  363.0168
6.222222  0.947271  4.393764  372.3717
6.311111  0.954160  4.478272  381.8480
6.400000  0.961050  4.563392  391.4462
6.488889  0.967940  4.649125  401.1666
6.577778  0.974829  4.735470  411.0097
6.666667  0.981719  4.822428  420.9760
6.755556  0.988608  4.909998  431.0658
6.844444  0.995498  4.998181  441.2797
6.933333  1.002387  5.086975  451.6181
7.022222  1.009277  5.176383  462.0815
7.111111  1.016166  5.266402  472.6702
7.200000  1.023056  5.357035  483.3848
7.288889  1.029946  5.448279  494.2257
7.377778  1.036835  5.540136  505.1934
7.466667  1.043725  5.632605  516.2883
7.555556  1.050614  5.725687  527.5109
7.644444  1.057504  5.819381  538.8616
7.733333  1.064394  5.913688  550.3409
7.822222  1.071283  6.008607  561.9493
7.911111  1.078173  6.104138  573.6872
8.000000  1.085062  6.200282  585.5551
END FTABLE 34
FTABLE      9
 91    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.762948  0.000000  0.000000
0.088889  0.774251  0.068320  0.395642
0.177778  0.785554  0.137645  1.245041
0.266667  0.796857  0.207974  2.427028
0.355556  0.808160  0.279308  3.889886
0.444444  0.819463  0.351647  5.601376
0.533333  0.830766  0.424990  7.538791
0.622222  0.842070  0.499339  9.685068
0.711111  0.853373  0.574692  12.02687
0.800000  0.864676  0.651049  14.55346
0.888889  0.875979  0.728412  17.25609
0.977778  0.887282  0.806779  20.12744
1.066667  0.898585  0.886151  23.16139
1.155556  0.909889  0.966528  26.35274
1.244444  0.921192  1.047909  29.69706
1.333333  0.932495  1.130295  33.19056
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1.422222	0.943798	1.213686	36.82994
1.511111	0.955102	1.298081	40.61239
1.600000	0.966405	1.383482	44.53546
1.688889	0.977708	1.469887	48.59702
1.777778	0.989011	1.557296	52.79522
1.866667	1.000314	1.645711	57.12848
1.955556	1.011618	1.735130	61.59540
2.044444	1.022921	1.825554	66.19479
2.133333	1.034224	1.916983	70.92562
2.222222	1.045527	2.009416	75.78700
2.311111	1.056831	2.102854	80.77818
2.400000	1.068134	2.197297	85.89851
2.488889	1.079437	2.292745	91.14747
2.577778	1.090740	2.389197	96.52461
2.666667	1.102044	2.486654	102.0296
2.755556	1.113347	2.585116	107.6621
2.844444	1.124650	2.684582	113.4219
2.933333	1.135954	2.785054	119.3089
3.022222	1.147257	2.886530	125.3229
3.111111	1.158560	2.989011	131.4640
3.200000	1.169864	3.092496	137.7321
3.288889	1.181167	3.196986	144.1272
3.377778	1.192470	3.302481	150.6495
3.466667	1.203774	3.408981	157.2990
3.555556	1.215077	3.516486	164.0759
3.644444	1.226380	3.624995	170.9804
3.733333	1.237684	3.734509	178.0126
3.822222	1.248987	3.845027	185.1728
3.911111	1.260290	3.956551	192.4613
4.000000	1.271594	4.069079	199.8783
4.088889	1.282897	4.182612	207.4241
4.177778	1.294201	4.297150	215.0990
4.266667	1.305504	4.412692	222.9034
4.355556	1.316807	4.529239	230.8375
4.444444	1.328111	4.646791	238.9018
4.533333	1.339414	4.765348	247.0965
4.622222	1.350718	4.884909	255.4222
4.711111	1.362021	5.005475	263.8791
4.800000	1.373324	5.127046	272.4677
4.888889	1.384628	5.249622	281.1884
4.977778	1.395931	5.373202	290.0416
5.066667	1.407235	5.497787	299.0277
5.155556	1.418538	5.623377	308.1472
5.244444	1.429842	5.749972	317.4005
5.333333	1.441145	5.877571	326.7881
5.422222	1.452448	6.006176	336.3104
5.511111	1.463752	6.135784	345.9679
5.600000	1.475055	6.266398	355.7611
5.688889	1.486359	6.398017	365.6903
5.777778	1.497662	6.530640	375.7563
5.866667	1.508966	6.664268	385.9593
5.955556	1.520269	6.798900	396.2998
6.044444	1.531573	6.934538	406.7785
6.133333	1.542876	7.071180	417.3957
6.222222	1.554180	7.208827	428.1520
6.311111	1.565483	7.347479	439.0478
6.400000	1.576787	7.487135	450.0838
6.488889	1.588090	7.627796	461.2603
6.577778	1.599394	7.769462	472.5778
6.666667	1.610698	7.912133	484.0370
6.755556	1.622001	8.055808	495.6383
6.844444	1.633305	8.200489	507.3822
6.933333	1.644608	8.346174	519.2693
7.022222	1.655912	8.492863	531.3000
7.111111	1.667215	8.640558	543.4749
7.200000	1.678519	8.789257	555.7946
7.288889	1.689822	8.938961	568.2594
7.377778	1.701126	9.089670	580.8700
7.466667	1.712430	9.241384	593.6269
7.555556	1.723733	9.394102	606.5306

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7.644444  1.735037  9.547825  619.5816
7.733333  1.746340  9.702553  632.7805
7.822222  1.757644  9.858286  646.1278
7.911111  1.768948  10.01502  659.6240
8.000000  1.780251  10.17277  673.2697
END FTABLE  9
FTABLE     10
 91    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.136915  0.000000  0.000000
0.066667  0.139197  0.009204  0.224683
0.133333  0.141479  0.018560  0.706357
0.200000  0.143761  0.028068  1.375773
0.266667  0.146043  0.037728  2.203399
0.333333  0.148325  0.047540  3.170899
0.400000  0.150607  0.057504  4.265435
0.466667  0.152889  0.067621  5.477427
0.533333  0.155172  0.077890  6.799442
0.600000  0.157454  0.088310  8.225560
0.666667  0.159736  0.098883  9.750975
0.733333  0.162018  0.109609  11.37173
0.800000  0.164300  0.120486  13.08454
0.866667  0.166582  0.131515  14.88664
0.933333  0.168864  0.142697  16.77571
1.000000  0.171147  0.154031  18.74977
1.066667  0.173429  0.165516  20.80716
1.133333  0.175711  0.177154  22.94644
1.200000  0.177993  0.188944  25.16640
1.266667  0.180275  0.200887  27.46600
1.333333  0.182558  0.212981  29.84436
1.400000  0.184840  0.225228  32.30074
1.466667  0.187122  0.237627  34.83450
1.533333  0.189404  0.250177  37.44512
1.600000  0.191687  0.262880  40.13216
1.666667  0.193969  0.275736  42.89525
1.733333  0.196251  0.288743  45.73411
1.800000  0.198533  0.301902  48.64850
1.866667  0.200816  0.315214  51.63826
1.933333  0.203098  0.328678  54.70325
2.000000  0.205380  0.342294  57.84340
2.066667  0.207662  0.356062  61.05866
2.133333  0.209945  0.369982  64.34902
2.200000  0.212227  0.384054  67.71451
2.266667  0.214509  0.398279  71.15518
2.333333  0.216791  0.412656  74.67111
2.400000  0.219074  0.427185  78.26241
2.466667  0.221356  0.441866  81.92920
2.533333  0.223638  0.456699  85.67161
2.600000  0.225921  0.471684  89.48983
2.666667  0.228203  0.486821  93.38401
2.733333  0.230485  0.502111  97.35436
2.800000  0.232768  0.517553  101.4011
2.866667  0.235050  0.533147  105.5244
2.933333  0.237332  0.548893  109.7245
3.000000  0.239615  0.564791  114.0017
3.066667  0.241897  0.580841  118.3562
3.133333  0.244180  0.597044  122.7882
3.200000  0.246462  0.613399  127.2981
3.266667  0.248744  0.629906  131.8861
3.333333  0.251027  0.646565  136.5524
3.400000  0.253309  0.663376  141.2975
3.466667  0.255592  0.680339  146.1215
3.533333  0.257874  0.697455  151.0247
3.600000  0.260156  0.714722  156.0075
3.666667  0.262439  0.732142  161.0702
3.733333  0.264721  0.749714  166.2131
3.800000  0.267004  0.767438  171.4365
3.866667  0.269286  0.785315  176.7407
3.933333  0.271568  0.803343  182.1260
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4.000000  0.273851  0.821524  187.5928
4.066667  0.276133  0.839857  193.1413
4.133333  0.278416  0.858342  198.7720
4.200000  0.280698  0.876979  204.4852
4.266667  0.282981  0.895768  210.2811
4.333333  0.285263  0.914710  216.1601
4.400000  0.287546  0.933803  222.1227
4.466667  0.289828  0.953049  228.1690
4.533333  0.292111  0.972447  234.2994
4.600000  0.294393  0.991997  240.5144
4.666667  0.296676  1.011699  246.8142
4.733333  0.298958  1.031554  253.1991
4.800000  0.301241  1.051560  259.6696
4.866667  0.303523  1.071719  266.2260
4.933333  0.305806  1.092030  272.8686
5.000000  0.308088  1.112493  279.5978
5.066667  0.310371  1.133109  286.4139
5.133333  0.312654  1.153876  293.3172
5.200000  0.314936  1.174796  300.3082
5.266667  0.317219  1.195868  307.3872
5.333333  0.319501  1.217092  314.5545
5.400000  0.321784  1.238468  321.8105
5.466667  0.324066  1.259996  329.1556
5.533333  0.326349  1.281677  336.5900
5.600000  0.328632  1.303509  344.1142
5.666667  0.330914  1.325494  351.7285
5.733333  0.333197  1.347631  359.4332
5.800000  0.335479  1.369920  367.2288
5.866667  0.337762  1.392362  375.1155
5.933333  0.340045  1.414955  383.0938
6.000000  0.342327  1.437701  391.1640
END FTABLE 10
FTABLE     11
 82    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.000000  0.000000  0.000000
0.010000  0.680000  0.007000  0.001000
0.200000  0.701000  0.139000  0.112000
0.300000  0.712000  0.209000  0.205000
0.400000  0.722000  0.281000  0.291000
0.500000  0.732000  0.354000  0.347000
0.600000  0.743000  0.428000  0.396000
0.700000  0.753000  0.503000  0.440000
0.800000  0.764000  0.579000  0.479000
0.900000  0.774000  0.656000  0.515000
1.000000  0.784000  0.734000  0.549000
1.100000  0.795000  0.813000  0.581000
1.200000  0.805000  0.893000  0.612000
1.300000  0.815000  0.974000  0.641000
1.400000  0.826000  1.056000  0.668000
1.500000  0.836000  1.139000  0.695000
1.600000  0.846000  1.223000  0.721000
1.700000  0.857000  1.308000  0.745000
1.800000  0.867000  1.395000  0.769000
1.900000  0.877000  1.482000  0.792000
2.000000  0.888000  1.570000  0.815000
2.100000  0.898000  1.659000  0.837000
2.200000  0.908000  1.750000  0.858000
2.300000  0.919000  1.841000  0.879000
2.400000  0.929000  1.933000  0.899000
2.500000  0.939000  2.027000  0.919000
2.600000  0.950000  2.121000  0.939000
2.700000  0.960000  2.216000  0.958000
2.800000  0.970000  2.313000  0.977000
2.900000  0.980000  2.410000  0.995000
3.000000  0.991000  2.509000  1.013000
3.100000  1.001000  2.608000  1.031000
3.200000  1.011000  2.709000  1.048000
3.300000  1.022000  2.810000  1.173000
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3.400000  1.032000  2.913000  1.413000
3.500000  1.042000  3.017000  1.723000
3.600000  1.052000  3.121000  2.088000
3.700000  1.063000  3.227000  2.502000
3.800000  1.073000  3.334000  2.832000
3.900000  1.083000  3.441000  3.079000
4.000000  1.093000  3.550000  3.301000
4.100000  1.104000  3.660000  3.505000
4.200000  1.114000  3.771000  3.694000
4.300000  1.124000  3.882000  3.871000
4.400000  1.134000  3.995000  4.039000
4.500000  1.145000  4.109000  4.199000
4.600000  1.155000  4.224000  4.352000
4.700000  1.165000  4.340000  4.499000
4.800000  1.175000  4.457000  4.640000
4.900000  1.186000  4.575000  4.776000
5.000000  1.196000  4.694000  4.908000
5.100000  1.206000  4.814000  5.037000
5.200000  1.216000  4.935000  5.161000
5.300000  1.226000  5.057000  5.394000
5.400000  1.237000  5.180000  5.981000
5.500000  1.247000  5.304000  6.765000
5.600000  1.257000  5.429000  7.698000
5.700000  1.267000  5.555000  8.755000
5.800000  1.277000  5.683000  9.923000
5.900000  1.288000  5.811000  11.18900
6.000000  1.298000  5.940000  12.54700
6.100000  1.308000  6.070000  13.98900
6.200000  1.318000  6.202000  15.51100
6.300000  1.328000  6.334000  17.10800
6.400000  1.338000  6.467000  18.77600
6.500000  1.349000  6.602000  20.51300
6.600000  1.359000  6.737000  22.31600
6.700000  1.369000  6.873000  24.18100
6.800000  1.379000  7.011000  26.10800
6.900000  1.389000  7.149000  28.09300
7.000000  1.399000  7.289000  30.13600
7.100000  1.409000  7.429000  32.23400
7.200000  1.420000  7.571000  34.38600
7.300000  1.430000  7.713000  36.59100
7.400000  1.440000  7.857000  38.84700
7.500000  1.450000  8.002000  41.15300
7.600000  1.460000  8.147000  43.50800
7.700000  1.470000  8.294000  45.91100
7.800000  1.480000  8.442000  48.36100
7.900000  1.490000  8.590000  50.85700
8.000000  1.501000  8.740000  53.39800
8.100000  1.511000  8.891000  999.0000
END FTABLE 11
FTABLE     12
 93    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.000000  0.000000  0.000000
0.010000  1.560000  0.016000  0.002000
0.100000  1.570000  0.158000  0.053000
0.200000  1.581000  0.316000  0.149000
0.300000  1.592000  0.474000  0.274000
0.400000  1.603000  0.633000  0.421000
0.500000  1.614000  0.794000  0.542000
0.600000  1.625000  0.956000  0.628000
0.700000  1.636000  1.118000  0.703000
0.800000  1.648000  1.282000  0.772000
0.900000  1.659000  1.447000  0.834000
1.000000  1.670000  1.614000  0.893000
1.100000  1.681000  1.781000  0.947000
1.200000  1.692000  1.949000  0.999000
1.300000  1.703000  2.119000  1.048000
1.400000  1.714000  2.289000  1.095000
1.500000  1.725000  2.461000  1.140000
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1.600000	1.737000	2.634000	1.183000
1.700000	1.748000	2.808000	1.225000
1.800000	1.759000	2.983000	1.266000
1.900000	1.770000	3.159000	1.305000
2.000000	1.781000	3.337000	1.343000
2.100000	1.792000	3.515000	1.485000
2.200000	1.803000	3.695000	1.714000
2.300000	1.815000	3.875000	1.998000
2.400000	1.826000	4.057000	2.327000
2.500000	1.837000	4.240000	2.696000
2.600000	1.848000	4.424000	3.099000
2.700000	1.859000	4.609000	3.534000
2.800000	1.870000	4.796000	3.998000
2.900000	1.881000	4.983000	4.489000
3.000000	1.892000	5.171000	5.006000
3.100000	1.904000	5.361000	5.435000
3.200000	1.915000	5.552000	5.764000
3.300000	1.926000	5.744000	6.070000
3.400000	1.937000	5.937000	6.623000
3.500000	1.948000	6.131000	7.380000
3.600000	1.959000	6.326000	8.265000
3.700000	1.970000	6.522000	9.255000
3.800000	1.981000	6.720000	10.33400
3.900000	1.993000	6.918000	11.49400
4.000000	2.004000	7.118000	12.72600
4.100000	2.015000	7.318000	14.02600
4.200000	2.026000	7.520000	15.39000
4.300000	2.037000	7.723000	16.81400
4.400000	2.048000	7.927000	18.29500
4.500000	2.059000	8.133000	19.83100
4.600000	2.070000	8.339000	21.41900
4.700000	2.082000	8.547000	23.05800
4.800000	2.093000	8.755000	24.74600
4.900000	2.104000	8.965000	26.48100
5.000000	2.115000	9.176000	28.26200
5.100000	2.126000	9.388000	30.08700
5.200000	2.137000	9.601000	31.95600
5.300000	2.148000	9.815000	33.75600
5.400000	2.160000	10.03000	35.01200
5.500000	2.171000	10.24600	36.21800
5.600000	2.182000	10.46400	37.38100
5.700000	2.193000	10.68300	38.50500
5.800000	2.204000	10.90200	39.59300
5.900000	2.215000	11.12300	40.65000
6.000000	2.226000	11.34500	41.67800
6.100000	2.237000	11.56800	42.67900
6.200000	2.249000	11.79200	43.65500
6.300000	2.260000	12.01800	44.60800
6.400000	2.271000	12.24400	45.54100
6.500000	2.282000	12.47200	46.45300
6.600000	2.293000	12.70000	47.34600
6.700000	2.304000	12.93000	48.22300
6.800000	2.315000	13.16100	49.08200
6.900000	2.326000	13.39300	49.92600
7.000000	2.338000	13.62600	50.75600
7.100000	2.349000	13.86100	51.57100
7.200000	2.360000	14.09600	52.37400
7.300000	2.371000	14.33200	53.16300
7.400000	2.382000	14.57000	53.94100
7.500000	2.393000	14.80900	54.70700
7.600000	2.404000	15.04900	55.46200
7.700000	2.415000	15.28900	56.20700
7.800000	2.427000	15.53200	56.94100
7.900000	2.438000	15.77500	57.66600
8.000000	2.449000	16.01900	58.38200
8.200000	2.471000	16.51100	59.78700
8.400000	2.493000	17.00700	61.15900
8.600000	2.516000	17.50800	62.50000
8.800000	2.538000	18.01400	63.81200
9.000000	2.560000	18.52300	65.09700

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9.200000  2.582000  19.03800  66.35600
9.400000  2.605000  19.55600  68.48600
9.600000  2.627000  20.08000  71.33200
9.800000  2.649000  20.60700  74.64000
10.00000  2.671000  21.13900  78.31700
10.10000  2.683000  21.40700  999.0000
END FTABLE 12
FTABLE     63
 91    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.782369  0.000000  0.000000
0.111111  0.784543  0.087051  2.380343
0.222222  0.786717  0.174343  7.517951
0.333333  0.788892  0.261877  14.70155
0.444444  0.791066  0.349652  23.62688
0.555556  0.793240  0.437669  34.10112
0.666667  0.795414  0.525928  45.98494
0.777778  0.797588  0.614428  59.17028
0.888889  0.799762  0.703170  73.56955
1.000000  0.801937  0.792153  89.10950
1.111111  0.804111  0.881378  105.7275
1.222222  0.806285  0.970844  123.3692
1.333333  0.808459  1.060552  141.9865
1.444444  0.810633  1.150502  161.5367
1.555556  0.812808  1.240693  181.9815
1.666667  0.814982  1.331126  203.2861
1.777778  0.817156  1.421800  225.4188
1.888889  0.819330  1.512716  248.3508
2.000000  0.821505  1.603873  272.0554
2.111111  0.823679  1.695273  296.5079
2.222222  0.825853  1.786913  321.6857
2.333333  0.828027  1.878795  347.5676
2.444444  0.830202  1.970919  374.1338
2.555556  0.832376  2.063285  401.3659
2.666667  0.834550  2.155892  429.2466
2.777778  0.836724  2.248740  457.7597
2.888889  0.838899  2.341830  486.8901
3.000000  0.841073  2.435162  516.6233
3.111111  0.843247  2.528735  546.9459
3.222222  0.845421  2.622550  577.8449
3.333333  0.847596  2.716607  609.3085
3.444444  0.849770  2.810905  641.3250
3.555556  0.851944  2.905445  673.8837
3.666667  0.854119  3.000226  706.9743
3.777778  0.856293  3.095249  740.5868
3.888889  0.858467  3.190513  774.7121
4.000000  0.860642  3.286019  809.3413
4.111111  0.862816  3.381767  844.4658
4.222222  0.864990  3.477756  880.0777
4.333333  0.867165  3.573987  916.1692
4.444444  0.869339  3.670459  952.7331
4.555556  0.871513  3.767174  989.7621
4.666667  0.873688  3.864129  1027.250
4.777778  0.875862  3.961326  1065.190
4.888889  0.878036  4.058765  1103.575
5.000000  0.880211  4.156446  1142.401
5.111111  0.882385  4.254368  1181.661
5.222222  0.884559  4.352531  1221.351
5.333333  0.886734  4.450936  1261.464
5.444444  0.888908  4.549583  1301.996
5.555556  0.891083  4.648471  1342.942
5.666667  0.893257  4.747601  1384.297
5.777778  0.895431  4.846973  1426.057
5.888889  0.897606  4.946586  1468.219
6.000000  0.899780  5.046441  1510.776
6.111111  0.901955  5.146537  1553.727
6.222222  0.904129  5.246875  1597.066
6.333333  0.906304  5.347455  1640.791
6.444444  0.908478  5.448276  1684.897
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6.555556  0.910652  5.549339  1729.382
6.666667  0.912827  5.650643  1774.242
6.777778  0.915001  5.752189  1819.473
6.888889  0.917176  5.853977  1865.074
7.000000  0.919350  5.956006  1911.040
7.111111  0.921525  6.058277  1957.370
7.222222  0.923699  6.160789  2004.060
7.333333  0.925874  6.263544  2051.108
7.444444  0.928048  6.366539  2098.511
7.555556  0.930223  6.469776  2146.267
7.666667  0.932397  6.573255  2194.373
7.777778  0.934572  6.676976  2242.827
7.888889  0.936746  6.780938  2291.627
8.000000  0.938921  6.885142  2340.771
8.111111  0.941095  6.989587  2390.257
8.222222  0.943270  7.094274  2440.082
8.333333  0.945444  7.199202  2490.245
8.444444  0.947619  7.304372  2540.744
8.555556  0.949793  7.409784  2591.577
8.666667  0.951968  7.515438  2642.742
8.777778  0.954142  7.621333  2694.238
8.888889  0.956317  7.727469  2746.063
9.000000  0.958491  7.833847  2798.215
9.111111  0.960666  7.940467  2850.693
9.222222  0.962840  8.047329  2903.496
9.333333  0.965015  8.154432  2956.621
9.444444  0.967190  8.261777  3010.068
9.555556  0.969364  8.369363  3063.835
9.666667  0.971539  8.477191  3117.921
9.777778  0.973713  8.585260  3172.325
9.888889  0.975888  8.693571  3227.045
10.00000  0.978062  8.802124  3282.080
END FTABLE 63
FTABLE     62
 91    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  1.587810  0.000000  0.000000
0.088889  1.592515  0.141348  0.992869
0.177778  1.597220  0.283114  3.134765
0.266667  1.601925  0.425298  6.128109
0.355556  1.606630  0.567900  9.845379
0.444444  1.611335  0.710921  14.20567
0.533333  1.616041  0.854360  19.15048
0.622222  1.620746  0.998217  24.63444
0.711111  1.625451  1.142493  30.62079
0.800000  1.630156  1.287186  37.07876
0.888889  1.634861  1.432298  43.98209
0.977778  1.639566  1.577828  51.30794
1.066667  1.644271  1.723777  59.03621
1.155556  1.648976  1.870143  67.14901
1.244444  1.653682  2.016928  75.63029
1.333333  1.658387  2.164131  84.46551
1.422222  1.663092  2.311752  93.64148
1.511111  1.667797  2.459792  103.1461
1.600000  1.672502  2.608250  112.9683
1.688889  1.677207  2.757126  123.0978
1.777778  1.681912  2.906420  133.5253
1.866667  1.686618  3.056132  144.2417
1.955556  1.691323  3.206263  155.2391
2.044444  1.696028  3.356812  166.5098
2.133333  1.700733  3.507779  178.0465
2.222222  1.705438  3.659164  189.8427
2.311111  1.710143  3.810968  201.8920
2.400000  1.714849  3.963190  214.1886
2.488889  1.719554  4.115830  226.7268
2.577778  1.724259  4.268888  239.5014
2.666667  1.728964  4.422365  252.5074
2.755556  1.733669  4.576260  265.7402
2.844444  1.738375  4.730573  279.1953
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2.933333  1.743080  4.885304  292.8685
3.022222  1.747785  5.040454  306.7557
3.111111  1.752490  5.196021  320.8532
3.200000  1.757195  5.352007  335.1574
3.288889  1.761901  5.508412  349.6647
3.377778  1.766606  5.665234  364.3721
3.466667  1.771311  5.822475  379.2762
3.555556  1.776016  5.980134  394.3742
3.644444  1.780721  6.138211  409.6632
3.733333  1.785427  6.296707  425.1404
3.822222  1.790132  6.455620  440.8034
3.911111  1.794837  6.614952  456.6495
4.000000  1.799542  6.774702  472.6765
4.088889  1.804247  6.934871  488.8821
4.177778  1.808953  7.095458  505.2640
4.266667  1.813658  7.256462  521.8202
4.355556  1.818363  7.417886  538.5487
4.444444  1.823068  7.579727  555.4476
4.533333  1.827774  7.741987  572.5150
4.622222  1.832479  7.904665  589.7492
4.711111  1.837184  8.067761  607.1484
4.800000  1.841889  8.231275  624.7111
4.888889  1.846595  8.395208  642.4357
4.977778  1.851300  8.559559  660.3206
5.066667  1.856005  8.724328  678.3645
5.155556  1.860710  8.889515  696.5659
5.244444  1.865416  9.055121  714.9234
5.333333  1.870121  9.221145  733.4359
5.422222  1.874826  9.387587  752.1020
5.511111  1.879532  9.554447  770.9205
5.600000  1.884237  9.721726  789.8904
5.688889  1.888942  9.889422  809.0104
5.777778  1.893647  10.05754  828.2796
5.866667  1.898353  10.22607  847.6968
5.955556  1.903058  10.39502  867.2612
6.044444  1.907763  10.56439  886.9716
6.133333  1.912469  10.73418  906.8273
6.222222  1.917174  10.90439  926.8273
6.311111  1.921879  11.07501  946.9708
6.400000  1.926584  11.24605  967.2568
6.488889  1.931290  11.41752  987.6847
6.577778  1.935995  11.58939  1008.254
6.666667  1.940700  11.76169  1028.963
6.755556  1.945406  11.93441  1049.812
6.844444  1.950111  12.10754  1070.799
6.933333  1.954816  12.28109  1091.925
7.022222  1.959522  12.45506  1113.189
7.111111  1.964227  12.62945  1134.589
7.200000  1.968932  12.80426  1156.126
7.288889  1.973638  12.97949  1177.798
7.377778  1.978343  13.15513  1199.606
7.466667  1.983048  13.33119  1221.548
7.555556  1.987754  13.50767  1243.624
7.644444  1.992459  13.68457  1265.834
7.733333  1.997164  13.86189  1288.177
7.822222  2.001870  14.03962  1310.653
7.911111  2.006575  14.21777  1333.260
8.000000  2.011280  14.39635  1356.000
END FTABLE 62
FTABLE     51
 91    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.036478  0.000000  0.000000
0.088889  0.036942  0.003263  0.850300
0.177778  0.037406  0.006568  2.678893
0.266667  0.037870  0.009913  5.227429
0.355556  0.038334  0.013300  8.385652
0.444444  0.038799  0.016728  12.08458
0.533333  0.039263  0.020198  16.27534
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0.622222	0.039727	0.023708	20.92094
0.711111	0.040191	0.027260	25.99221
0.800000	0.040655	0.030853	31.46552
0.888889	0.041119	0.034488	37.32130
0.977778	0.041583	0.038163	43.54316
1.066667	0.042047	0.041880	50.11713
1.155556	0.042512	0.045638	57.03128
1.244444	0.042976	0.049438	64.27528
1.333333	0.043440	0.053279	71.84018
1.422222	0.043904	0.057161	79.71813
1.511111	0.044369	0.061084	87.90229
1.600000	0.044833	0.065048	96.38662
1.688889	0.045297	0.069054	105.1658
1.777778	0.045762	0.073101	114.2352
1.866667	0.046226	0.077190	123.5906
1.955556	0.046690	0.081319	133.2283
2.044444	0.047155	0.085490	143.1452
2.133333	0.047619	0.089702	153.3382
2.222222	0.048084	0.093956	163.8050
2.311111	0.048548	0.098250	174.5431
2.400000	0.049013	0.102586	185.5507
2.488889	0.049477	0.106964	196.8260
2.577778	0.049942	0.111382	208.3675
2.666667	0.050406	0.115842	220.1738
2.755556	0.050871	0.120344	232.2438
2.844444	0.051335	0.124886	244.5765
2.933333	0.051800	0.129470	257.1710
3.022222	0.052265	0.134095	270.0267
3.111111	0.052729	0.138761	283.1428
3.200000	0.053194	0.143469	296.5189
3.288889	0.053659	0.148218	310.1547
3.377778	0.054123	0.153008	324.0499
3.466667	0.054588	0.157840	338.2042
3.555556	0.055053	0.162713	352.6175
3.644444	0.055517	0.167627	367.2897
3.733333	0.055982	0.172583	382.2209
3.822222	0.056447	0.177579	397.4112
3.911111	0.056912	0.182618	412.8607
4.000000	0.057377	0.187697	428.5695
4.088889	0.057841	0.192818	444.5379
4.177778	0.058306	0.197980	460.7661
4.266667	0.058771	0.203183	477.2546
4.355556	0.059236	0.208428	494.0037
4.444444	0.059701	0.213714	511.0137
4.533333	0.060166	0.219042	528.2851
4.622222	0.060631	0.224410	545.8183
4.711111	0.061096	0.229821	563.6139
4.800000	0.061561	0.235272	581.6724
4.888889	0.062026	0.240765	599.9943
4.977778	0.062491	0.246299	618.5803
5.066667	0.062956	0.251874	637.4308
5.155556	0.063421	0.257491	656.5465
5.244444	0.063886	0.263149	675.9281
5.333333	0.064351	0.268848	695.5762
5.422222	0.064816	0.274589	715.4915
5.511111	0.065282	0.280371	735.6747
5.600000	0.065747	0.286195	756.1265
5.688889	0.066212	0.292060	776.8475
5.777778	0.066677	0.297966	797.8386
5.866667	0.067142	0.303913	819.1005
5.955556	0.067608	0.309902	840.6340
6.044444	0.068073	0.315932	862.4397
6.133333	0.068538	0.322004	884.5185
6.222222	0.069003	0.328117	906.8713
6.311111	0.069469	0.334271	929.4987
6.400000	0.069934	0.340467	952.4016
6.488889	0.070399	0.346704	975.5808
6.577778	0.070865	0.352982	999.0372
6.666667	0.071330	0.359302	1022.772
6.755556	0.071796	0.365663	1046.785

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6.844444  0.072261  0.372066  1071.077
6.933333  0.072727  0.378510  1095.651
7.022222  0.073192  0.384995  1120.505
7.111111  0.073657  0.391522  1145.642
7.200000  0.074123  0.398090  1171.062
7.288889  0.074589  0.404699  1196.766
7.377778  0.075054  0.411350  1222.755
7.466667  0.075520  0.418042  1249.030
7.555556  0.075985  0.424776  1275.591
7.644444  0.076451  0.431551  1302.440
7.733333  0.076916  0.438367  1329.577
7.822222  0.077382  0.445225  1357.003
7.911111  0.077848  0.452124  1384.720
8.000000  0.078313  0.459064  1412.727
END FTABLE 51
FTABLE     53
 91    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.174242  0.000000  0.000000
0.088889  0.175792  0.015557  1.420554
0.177778  0.177342  0.031252  4.485199
0.266667  0.178892  0.047085  8.769328
0.355556  0.180442  0.063055  14.09239
0.444444  0.181992  0.079163  20.34103
0.533333  0.183542  0.095409  27.43431
0.622222  0.185092  0.111793  35.31037
0.711111  0.186642  0.128314  43.91981
0.800000  0.188192  0.144974  53.22203
0.888889  0.189742  0.161771  63.18294
0.977778  0.191292  0.178706  73.77343
1.066667  0.192843  0.195778  84.96837
1.155556  0.194393  0.212989  96.74583
1.244444  0.195943  0.230337  109.0865
1.333333  0.197493  0.247823  121.9732
1.422222  0.199043  0.265447  135.3908
1.511111  0.200593  0.283209  149.3257
1.600000  0.202144  0.301108  163.7654
1.688889  0.203694  0.319145  178.6991
1.777778  0.205244  0.337320  194.1166
1.866667  0.206795  0.355633  210.0089
1.955556  0.208345  0.374084  226.3678
2.044444  0.209895  0.392672  243.1856
2.133333  0.211446  0.411399  260.4556
2.222222  0.212996  0.430263  278.1715
2.311111  0.214546  0.449264  296.3275
2.400000  0.216097  0.468404  314.9183
2.488889  0.217647  0.487682  333.9392
2.577778  0.219198  0.507097  353.3856
2.666667  0.220748  0.526650  373.2536
2.755556  0.222298  0.546341  393.5394
2.844444  0.223849  0.566170  414.2396
2.933333  0.225400  0.586136  435.3510
3.022222  0.226950  0.606241  456.8708
3.111111  0.228501  0.626483  478.7963
3.200000  0.230051  0.646863  501.1250
3.288889  0.231602  0.667381  523.8547
3.377778  0.233152  0.688037  546.9835
3.466667  0.234703  0.708830  570.5094
3.555556  0.236254  0.729762  594.4307
3.644444  0.237804  0.750831  618.7459
3.733333  0.239355  0.772038  643.4536
3.822222  0.240906  0.793383  668.5524
3.911111  0.242457  0.814866  694.0413
4.000000  0.244007  0.836486  719.9192
4.088889  0.245558  0.858245  746.1852
4.177778  0.247109  0.880141  772.8383
4.266667  0.248660  0.902175  799.8780
4.355556  0.250210  0.924347  827.3035
4.444444  0.251761  0.946657  855.1143
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4.533333  0.253312  0.969105  883.3099
4.622222  0.254863  0.991691  911.8899
4.711111  0.256414  1.014414  940.8539
4.800000  0.257965  1.037275  970.2016
4.888889  0.259516  1.060274  999.9329
4.977778  0.261067  1.083411  1030.048
5.066667  0.262618  1.106686  1060.545
5.155556  0.264169  1.130099  1091.427
5.244444  0.265720  1.153650  1122.691
5.333333  0.267271  1.177338  1154.338
5.422222  0.268822  1.201164  1186.369
5.511111  0.270373  1.225129  1218.784
5.600000  0.271924  1.249231  1251.582
5.688889  0.273475  1.273471  1284.764
5.777778  0.275026  1.297849  1318.330
5.866667  0.276577  1.322364  1352.280
5.955556  0.278129  1.347018  1386.615
6.044444  0.279680  1.371809  1421.335
6.133333  0.281231  1.396739  1456.440
6.222222  0.282782  1.421806  1491.931
6.311111  0.284334  1.447011  1527.809
6.400000  0.285885  1.472354  1564.073
6.488889  0.287436  1.497835  1600.724
6.577778  0.288987  1.523454  1637.762
6.666667  0.290539  1.549211  1675.189
6.755556  0.292090  1.575105  1713.004
6.844444  0.293641  1.601138  1751.209
6.933333  0.295193  1.627308  1789.803
7.022222  0.296744  1.653616  1828.787
7.111111  0.298296  1.680063  1868.163
7.200000  0.299847  1.706647  1907.930
7.288889  0.301399  1.733369  1948.089
7.377778  0.302950  1.760229  1988.641
7.466667  0.304502  1.787227  2029.587
7.555556  0.306053  1.814362  2070.927
7.644444  0.307605  1.841636  2112.662
7.733333  0.309156  1.869048  2154.792
7.822222  0.310708  1.896597  2197.319
7.911111  0.312259  1.924285  2240.242
8.000000  0.313811  1.952110  2283.564
END FTABLE 53
FTABLE     13
 83    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.000000  0.000000  0.000000
0.010000  1.500000  0.015000  0.002000
0.250000  1.522000  0.375000  0.278000
0.500000  1.545000  0.758000  0.785000
0.750000  1.568000  1.148000  1.381000
1.000000  1.591000  1.543000  1.747000
1.250000  1.614000  1.944000  2.049000
1.500000  1.637000  2.351000  2.311000
1.750000  1.660000  2.764000  2.547000
2.000000  1.683000  3.182000  2.763000
2.250000  1.706000  3.606000  2.963000
2.500000  1.729000  4.035000  3.150000
2.750000  1.752000  4.471000  3.327000
3.000000  1.775000  4.912000  3.495000
3.250000  1.798000  5.358000  3.655000
3.500000  1.821000  5.811000  3.808000
3.750000  1.844000  6.269000  3.956000
4.000000  1.867000  6.733000  4.098000
4.250000  1.890000  7.203000  4.235000
4.500000  1.912000  7.678000  4.368000
4.750000  1.935000  8.159000  4.497000
5.000000  1.958000  8.646000  4.623000
5.250000  1.981000  9.138000  4.745000
5.500000  2.004000  9.636000  4.864000
5.750000  2.027000  10.14000  4.981000
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6.000000  2.050000  10.65000  5.094000
6.250000  2.073000  11.16500  5.205000
6.500000  2.096000  11.68600  5.314000
6.750000  2.119000  12.21300  5.421000
7.000000  2.142000  12.74600  5.525000
7.250000  2.164000  13.28400  5.628000
7.500000  2.187000  13.82800  5.729000
7.750000  2.210000  14.37700  5.828000
8.000000  2.233000  14.93300  5.925000
8.250000  2.256000  15.49400  6.021000
8.500000  2.279000  16.06100  6.116000
8.750000  2.302000  16.63300  6.208000
9.000000  2.325000  17.21100  6.300000
9.250000  2.348000  17.79500  6.390000
9.500000  2.370000  18.38500  6.479000
9.750000  2.393000  18.98000  6.567000
10.00000  2.416000  19.58100  6.653000
10.25000  2.439000  20.18800  6.739000
10.50000  2.462000  20.80000  7.172000
10.75000  2.485000  21.41900  8.423000
11.00000  2.508000  22.04300  10.13000
11.25000  2.530000  22.67200  12.18800
11.50000  2.553000  23.30800  14.54300
11.75000  2.576000  23.94900  17.16000
12.00000  2.599000  24.59500  20.01400
12.25000  2.622000  25.24800  22.98800
12.50000  2.645000  25.90600  24.90600
12.75000  2.668000  26.57000  26.64700
13.00000  2.690000  27.24000  29.32600
13.25000  2.713000  27.91500  33.37200
13.50000  2.736000  28.59600  38.18700
13.75000  2.759000  29.28300  43.60500
14.00000  2.782000  29.97500  49.54000
14.25000  2.805000  30.67400  55.93600
14.50000  2.827000  31.37800  62.75100
14.75000  2.850000  32.08700  69.95500
15.00000  2.873000  32.80300  77.52400
15.25000  2.896000  33.52400  85.43800
15.50000  2.919000  34.25000  93.68100
15.75000  2.941000  34.98300  102.2370
16.00000  2.964000  35.72100  111.0940
16.25000  2.987000  36.46500  120.2420
16.50000  3.010000  37.21500  129.6690
16.75000  3.033000  37.97000  139.3690
17.00000  3.056000  38.73100  149.3310
17.25000  3.078000  39.49800  159.5500
17.50000  3.101000  40.27100  170.0180
17.75000  3.124000  41.04900  180.7290
18.00000  3.147000  41.83300  191.6780
18.25000  3.170000  42.62200  202.8580
18.50000  3.192000  43.41800  214.2660
18.75000  3.215000  44.21900  225.8970
19.00000  3.238000  45.02600  237.7450
19.25000  3.261000  45.83800  249.8080
19.50000  3.283000  46.65600  262.0800
19.75000  3.306000  47.48000  274.5590
20.00000  3.329000  48.31000  290.7640
20.10000  3.400000  48.40000  999.0000
END FTABLE 13
FTABLE     14
 83    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.000000  0.000000  0.000000
0.010000  0.100000  0.001000  0.000000
0.100000  0.104000  0.010000  0.009000
0.200000  0.108000  0.021000  0.023000
0.300000  0.112000  0.032000  0.031000
0.400000  0.116000  0.044000  0.038000
0.500000  0.120000  0.056000  0.043000
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0.600000	0.124000	0.068000	0.048000
0.700000	0.128000	0.081000	0.053000
0.800000	0.132000	0.094000	0.057000
0.900000	0.135000	0.107000	0.060000
1.000000	0.139000	0.121000	0.064000
1.100000	0.143000	0.135000	0.067000
1.200000	0.147000	0.150000	0.071000
1.300000	0.151000	0.165000	0.074000
1.400000	0.155000	0.180000	0.077000
1.500000	0.159000	0.196000	0.080000
1.600000	0.162000	0.212000	0.109000
1.700000	0.166000	0.228000	0.159000
1.800000	0.170000	0.245000	0.224000
1.900000	0.174000	0.262000	0.301000
2.000000	0.178000	0.280000	0.387000
2.100000	0.182000	0.298000	0.451000
2.200000	0.185000	0.316000	0.501000
2.300000	0.189000	0.335000	0.546000
2.400000	0.193000	0.354000	0.587000
2.500000	0.197000	0.373000	0.625000
2.600000	0.201000	0.393000	0.766000
2.700000	0.204000	0.413000	0.993000
2.800000	0.208000	0.434000	1.274000
2.900000	0.212000	0.455000	1.600000
3.000000	0.216000	0.476000	1.964000
3.100000	0.220000	0.498000	2.363000
3.200000	0.223000	0.520000	2.793000
3.300000	0.227000	0.542000	3.252000
3.400000	0.231000	0.565000	3.738000
3.500000	0.235000	0.588000	4.250000
3.600000	0.238000	0.612000	4.786000
3.700000	0.242000	0.636000	5.345000
3.800000	0.246000	0.660000	5.926000
3.900000	0.250000	0.685000	6.529000
4.000000	0.253000	0.710000	7.153000
4.100000	0.257000	0.735000	8.558000
4.200000	0.261000	0.761000	10.50000
4.300000	0.265000	0.787000	12.87700
4.400000	0.268000	0.814000	15.60300
4.500000	0.272000	0.841000	18.63200
4.600000	0.276000	0.868000	21.93100
4.700000	0.280000	0.896000	25.47600
4.800000	0.283000	0.924000	29.25000
4.900000	0.287000	0.952000	33.23800
5.000000	0.291000	0.981000	37.42800
5.100000	0.294000	1.010000	41.80900
5.200000	0.298000	1.040000	46.37400
5.300000	0.302000	1.070000	51.11400
5.400000	0.306000	1.100000	56.02400
5.500000	0.309000	1.131000	61.09600
5.600000	0.313000	1.162000	66.32500
5.700000	0.317000	1.193000	71.70800
5.800000	0.320000	1.225000	77.23900
5.900000	0.324000	1.257000	82.91400
6.000000	0.328000	1.290000	88.73000
6.100000	0.331000	1.323000	94.68300
6.200000	0.335000	1.356000	100.7700
6.300000	0.339000	1.390000	106.9880
6.400000	0.342000	1.424000	113.3340
6.500000	0.346000	1.458000	119.8050
6.600000	0.350000	1.493000	126.4000
6.700000	0.353000	1.528000	133.1160
6.800000	0.357000	1.564000	139.9500
6.900000	0.361000	1.600000	146.9010
7.000000	0.364000	1.636000	153.9670
7.100000	0.368000	1.673000	161.1450
7.200000	0.372000	1.710000	168.4340
7.300000	0.375000	1.747000	175.8330
7.400000	0.379000	1.785000	183.3390
7.500000	0.382000	1.823000	190.9510

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7.600000  0.386000  1.862000  198.6680
7.700000  0.390000  1.901000  206.4880
7.800000  0.393000  1.940000  214.4100
7.900000  0.397000  1.980000  222.4320
8.000000  0.401000  2.020000  230.5540
8.100000  0.600000  2.600000  999.0000
END FTABLE 14
FTABLE     42
 91    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.310468  0.000000  0.000000
0.088889  0.315068  0.027802  0.533825
0.177778  0.319668  0.056012  1.679888
0.266667  0.324268  0.084632  3.274701
0.355556  0.328868  0.113660  5.248482
0.444444  0.333468  0.143097  7.557734
0.533333  0.338068  0.172943  10.17182
0.622222  0.342668  0.203198  13.06771
0.711111  0.347268  0.233862  16.22741
0.800000  0.351868  0.264934  19.63646
0.888889  0.356468  0.296416  23.28301
0.977778  0.361068  0.328306  27.15722
1.066667  0.365668  0.360606  31.25082
1.155556  0.370268  0.393314  35.55680
1.244444  0.374868  0.426431  40.06917
1.333333  0.379468  0.459957  44.78282
1.422222  0.384068  0.493892  49.69331
1.511111  0.388668  0.528236  54.79683
1.600000  0.393268  0.562988  60.09008
1.688889  0.397868  0.598150  65.57019
1.777778  0.402468  0.633721  71.23468
1.866667  0.407068  0.669700  77.08139
1.955556  0.411668  0.706088  83.10844
2.044444  0.416268  0.742885  89.31423
2.133333  0.420868  0.780091  95.69737
2.222222  0.425468  0.817706  102.2567
2.311111  0.430069  0.855730  108.9911
2.400000  0.434669  0.894163  115.8998
2.488889  0.439269  0.933005  122.9820
2.577778  0.443869  0.972255  130.2372
2.666667  0.448469  1.011915  137.6648
2.755556  0.453069  1.051983  145.2645
2.844444  0.457670  1.092460  153.0360
2.933333  0.462270  1.133347  160.9791
3.022222  0.466870  1.174642  169.0937
3.111111  0.471470  1.216346  177.3796
3.200000  0.476071  1.258459  185.8369
3.288889  0.480671  1.300981  194.4656
3.377778  0.485271  1.343911  203.2659
3.466667  0.489871  1.387251  212.2378
3.555556  0.494472  1.431000  221.3817
3.644444  0.499072  1.475157  230.6976
3.733333  0.503672  1.519724  240.1860
3.822222  0.508273  1.564699  249.8470
3.911111  0.512873  1.610083  259.6811
4.000000  0.517473  1.655876  269.6886
4.088889  0.522074  1.702078  279.8698
4.177778  0.526674  1.748689  290.2253
4.266667  0.531274  1.795709  300.7554
4.355556  0.535875  1.843138  311.4607
4.444444  0.540475  1.890976  322.3415
4.533333  0.545076  1.939223  333.3984
4.622222  0.549676  1.987878  344.6319
4.711111  0.554276  2.036943  356.0425
4.800000  0.558877  2.086416  367.6308
4.888889  0.563477  2.136299  379.3973
4.977778  0.568078  2.186590  391.3426
5.066667  0.572678  2.237290  403.4672
5.155556  0.577279  2.288399  415.7718
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5.244444  0.581879  2.339918  428.2570
5.333333  0.586480  2.391845  440.9233
5.422222  0.591080  2.444181  453.7714
5.511111  0.595681  2.496925  466.8020
5.600000  0.600281  2.550079  480.0155
5.688889  0.604882  2.603642  493.4128
5.777778  0.609482  2.657614  506.9943
5.866667  0.614083  2.711994  520.7608
5.955556  0.618683  2.766784  534.7130
6.044444  0.623284  2.821983  548.8515
6.133333  0.627884  2.877590  563.1769
6.222222  0.632485  2.933607  577.6900
6.311111  0.637086  2.990032  592.3914
6.400000  0.641686  3.046866  607.2817
6.488889  0.646287  3.104109  622.3618
6.577778  0.650888  3.161762  637.6322
6.666667  0.655488  3.219823  653.0936
6.755556  0.660089  3.278293  668.7468
6.844444  0.664689  3.337172  684.5925
6.933333  0.669290  3.396460  700.6313
7.022222  0.673891  3.456157  716.8639
7.111111  0.678492  3.516263  733.2911
7.200000  0.683092  3.576778  749.9135
7.288889  0.687693  3.637701  766.7319
7.377778  0.692294  3.699034  783.7469
7.466667  0.696894  3.760776  800.9593
7.555556  0.701495  3.822926  818.3698
7.644444  0.706096  3.885486  835.9791
7.733333  0.710697  3.948455  853.7878
7.822222  0.715298  4.011832  871.7969
7.911111  0.719898  4.075619  890.0068
8.000000  0.724499  4.139814  908.4184
END FTABLE 42
FTABLE     35
 91    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.179408  0.000000  0.000000
0.088889  0.182598  0.016089  0.550192
0.177778  0.185788  0.032462  1.728692
0.266667  0.188978  0.049118  3.365324
0.355556  0.192168  0.066058  5.387575
0.444444  0.195357  0.083281  7.750552
0.533333  0.198547  0.100788  10.42294
0.622222  0.201738  0.118578  13.38147
0.711111  0.204928  0.136652  16.60818
0.800000  0.208118  0.155010  20.08885
0.888889  0.211308  0.173651  23.81198
0.977778  0.214498  0.192576  27.76818
1.066667  0.217688  0.211784  31.94969
1.155556  0.220878  0.231276  36.35003
1.244444  0.224068  0.251051  40.96380
1.333333  0.227258  0.271110  45.78644
1.422222  0.230448  0.291453  50.81413
1.511111  0.233639  0.312079  56.04363
1.600000  0.236829  0.332988  61.47222
1.688889  0.240019  0.354182  67.09761
1.777778  0.243209  0.375659  72.91789
1.866667  0.246399  0.397419  78.93144
1.955556  0.249590  0.419463  85.13696
2.044444  0.252780  0.441790  91.53337
2.133333  0.255970  0.464402  98.11979
2.222222  0.259161  0.487296  104.8955
2.311111  0.262351  0.510475  111.8601
2.400000  0.265541  0.533936  119.0131
2.488889  0.268732  0.557682  126.3543
2.577778  0.271922  0.581711  133.8836
2.666667  0.275112  0.606024  141.6009
2.755556  0.278303  0.630620  149.5063
2.844444  0.281493  0.655500  157.6000
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2.933333  0.284684  0.680663  165.8821
3.022222  0.287874  0.706110  174.3529
3.111111  0.291064  0.731841  183.0129
3.200000  0.294255  0.757855  191.8623
3.288889  0.297445  0.784153  200.9017
3.377778  0.300636  0.810734  210.1315
3.466667  0.303826  0.837599  219.5523
3.555556  0.307017  0.864748  229.1646
3.644444  0.310208  0.892180  238.9691
3.733333  0.313398  0.919896  248.9663
3.822222  0.316589  0.947895  259.1569
3.911111  0.319779  0.976178  269.5416
4.000000  0.322970  1.004745  280.1212
4.088889  0.326161  1.033595  290.8963
4.177778  0.329351  1.062729  301.8677
4.266667  0.332542  1.092146  313.0362
4.355556  0.335733  1.121847  324.4025
4.444444  0.338923  1.151832  335.9674
4.533333  0.342114  1.182100  347.7318
4.622222  0.345305  1.212652  359.6965
4.711111  0.348495  1.243488  371.8623
4.800000  0.351686  1.274607  384.2301
4.888889  0.354877  1.306010  396.8007
4.977778  0.358068  1.337696  409.5750
5.066667  0.361259  1.369666  422.5538
5.155556  0.364449  1.401920  435.7380
5.244444  0.367640  1.434457  449.1286
5.333333  0.370831  1.467278  462.7264
5.422222  0.374022  1.500383  476.5323
5.511111  0.377213  1.533771  490.5473
5.600000  0.380404  1.567443  504.7722
5.688889  0.383595  1.601398  519.2079
5.777778  0.386786  1.635637  533.8554
5.866667  0.389977  1.670160  548.7155
5.955556  0.393168  1.704967  563.7893
6.044444  0.396359  1.740057  579.0776
6.133333  0.399550  1.775430  594.5814
6.222222  0.402741  1.811088  610.3016
6.311111  0.405932  1.847029  626.2392
6.400000  0.409123  1.883253  642.3950
6.488889  0.412314  1.919762  658.7700
6.577778  0.415505  1.956554  675.3652
6.666667  0.418696  1.993629  692.1815
6.755556  0.421887  2.030988  709.2199
6.844444  0.425078  2.068631  726.4812
6.933333  0.428269  2.106558  743.9665
7.022222  0.431460  2.144768  761.6767
7.111111  0.434652  2.183262  779.6127
7.200000  0.437843  2.222039  797.7755
7.288889  0.441034  2.261101  816.1660
7.377778  0.444225  2.300445  834.7852
7.466667  0.447416  2.340074  853.6340
7.555556  0.450608  2.379986  872.7134
7.644444  0.453799  2.420182  892.0243
7.733333  0.456990  2.460661  911.5677
7.822222  0.460182  2.501425  931.3445
7.911111  0.463373  2.542472  951.3557
8.000000  0.466564  2.583802  971.6023
END FTABLE 35
FTABLE     15
 83    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.000000  0.000000  0.000000
0.010000  0.100000  0.001000  0.001000
0.100000  0.104000  0.010000  0.018000
0.200000  0.108000  0.021000  0.037000
0.300000  0.112000  0.032000  0.049000
0.400000  0.116000  0.044000  0.058000
0.500000  0.120000  0.056000  0.066000
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0.600000	0.124000	0.068000	0.074000
0.700000	0.128000	0.081000	0.080000
0.800000	0.132000	0.094000	0.086000
0.900000	0.135000	0.107000	0.092000
1.000000	0.139000	0.121000	0.097000
1.100000	0.143000	0.135000	0.102000
1.200000	0.147000	0.150000	0.107000
1.300000	0.151000	0.165000	0.112000
1.400000	0.155000	0.180000	0.116000
1.500000	0.159000	0.196000	0.120000
1.600000	0.162000	0.212000	0.124000
1.700000	0.166000	0.228000	0.128000
1.800000	0.170000	0.245000	0.132000
1.900000	0.174000	0.262000	0.136000
2.000000	0.178000	0.280000	0.140000
2.100000	0.182000	0.298000	0.143000
2.200000	0.185000	0.316000	0.147000
2.300000	0.189000	0.335000	0.150000
2.400000	0.193000	0.354000	0.153000
2.500000	0.197000	0.373000	0.157000
2.600000	0.201000	0.393000	0.160000
2.700000	0.204000	0.413000	0.163000
2.800000	0.208000	0.434000	0.166000
2.900000	0.212000	0.455000	0.169000
3.000000	0.216000	0.476000	0.172000
3.100000	0.220000	0.498000	0.175000
3.200000	0.223000	0.520000	0.178000
3.300000	0.227000	0.542000	0.180000
3.400000	0.231000	0.565000	0.183000
3.500000	0.235000	0.588000	0.186000
3.600000	0.238000	0.612000	0.189000
3.700000	0.242000	0.636000	0.226000
3.800000	0.246000	0.660000	0.293000
3.900000	0.250000	0.685000	0.379000
4.000000	0.253000	0.710000	0.480000
4.100000	0.257000	0.735000	0.594000
4.200000	0.261000	0.761000	0.679000
4.300000	0.265000	0.787000	0.745000
4.400000	0.268000	0.814000	0.804000
4.500000	0.272000	0.841000	0.858000
4.600000	0.276000	0.868000	0.909000
4.700000	0.280000	0.896000	0.956000
4.800000	0.283000	0.924000	1.001000
4.900000	0.287000	0.952000	1.043000
5.000000	0.291000	0.981000	1.083000
5.100000	0.294000	1.010000	1.122000
5.200000	0.298000	1.040000	1.248000
5.300000	0.302000	1.070000	1.444000
5.400000	0.306000	1.100000	1.687000
5.500000	0.309000	1.131000	1.967000
5.600000	0.313000	1.162000	2.279000
5.700000	0.317000	1.193000	2.619000
5.800000	0.320000	1.225000	2.986000
5.900000	0.324000	1.257000	3.377000
6.000000	0.328000	1.290000	3.790000
6.100000	0.331000	1.323000	4.225000
6.200000	0.335000	1.356000	4.680000
6.300000	0.339000	1.390000	5.154000
6.400000	0.342000	1.424000	5.647000
6.500000	0.346000	1.458000	6.158000
6.600000	0.350000	1.493000	6.685000
6.700000	0.353000	1.528000	7.229000
6.800000	0.357000	1.564000	7.790000
6.900000	0.361000	1.600000	8.365000
7.000000	0.364000	1.636000	8.956000
7.100000	0.368000	1.673000	9.562000
7.200000	0.372000	1.710000	10.18200
7.300000	0.375000	1.747000	10.81600
7.400000	0.379000	1.785000	11.46300
7.500000	0.382000	1.823000	12.12400

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7.600000  0.386000  1.862000  12.79900
7.700000  0.390000  1.901000  13.48600
7.800000  0.393000  1.940000  14.21800
7.900000  0.397000  1.980000  15.93700
8.000000  0.401000  2.020000  18.68800
8.100000  0.404000  2.060000  999.0000
END FTABLE 15
FTABLE     16
 83    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.000000  0.000000  0.000000
0.010000  0.420000  0.004000  0.001000
0.100000  0.421000  0.040000  0.044000
0.200000  0.432000  0.083000  0.124000
0.300000  0.443000  0.127000  0.228000
0.400000  0.454000  0.172000  0.323000
0.500000  0.465000  0.217000  0.386000
0.600000  0.476000  0.264000  0.440000
0.700000  0.486000  0.312000  0.488000
0.800000  0.497000  0.360000  0.532000
0.900000  0.507000  0.409000  0.573000
1.000000  0.518000  0.460000  0.610000
1.100000  0.528000  0.511000  0.646000
1.200000  0.538000  0.563000  0.680000
1.300000  0.549000  0.616000  0.712000
1.400000  0.559000  0.670000  0.743000
1.500000  0.569000  0.725000  0.772000
1.600000  0.579000  0.781000  0.801000
1.700000  0.589000  0.838000  0.828000
1.800000  0.599000  0.896000  0.855000
1.900000  0.608000  0.954000  0.880000
2.000000  0.618000  1.014000  0.905000
2.100000  0.628000  1.075000  0.930000
2.200000  0.637000  1.136000  0.954000
2.300000  0.647000  1.198000  0.977000
2.400000  0.656000  1.262000  0.999000
2.500000  0.665000  1.326000  1.022000
2.600000  0.675000  1.391000  1.043000
2.700000  0.684000  1.457000  1.064000
2.800000  0.693000  1.524000  1.085000
2.900000  0.702000  1.592000  1.106000
3.000000  0.711000  1.661000  1.126000
3.100000  0.720000  1.731000  1.145000
3.200000  0.728000  1.801000  1.165000
3.300000  0.737000  1.873000  1.184000
3.400000  0.746000  1.945000  1.203000
3.500000  0.754000  2.019000  1.221000
3.600000  0.763000  2.093000  1.239000
3.700000  0.771000  2.169000  1.257000
3.800000  0.780000  2.245000  1.275000
3.900000  0.788000  2.322000  1.292000
4.000000  0.796000  2.400000  1.309000
4.100000  0.804000  2.479000  1.326000
4.200000  0.812000  2.559000  1.343000
4.300000  0.820000  2.640000  1.360000
4.400000  0.828000  2.722000  1.376000
4.500000  0.836000  2.804000  1.392000
4.600000  0.844000  2.888000  1.408000
4.700000  0.851000  2.973000  1.424000
4.800000  0.859000  3.058000  1.439000
4.900000  0.866000  3.144000  1.455000
5.000000  0.874000  3.232000  1.470000
5.100000  0.881000  3.320000  1.485000
5.200000  0.888000  3.409000  1.500000
5.300000  0.896000  3.499000  1.515000
5.400000  0.903000  3.590000  1.530000
5.500000  0.910000  3.682000  1.544000
5.600000  0.917000  3.775000  1.559000
5.700000  0.924000  3.869000  1.573000
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5.800000  0.931000  3.964000  1.587000
5.900000  0.937000  4.059000  1.601000
6.000000  0.944000  4.156000  1.615000
6.100000  0.951000  4.254000  1.629000
6.200000  0.957000  4.352000  1.643000
6.300000  0.964000  4.451000  1.656000
6.400000  0.970000  4.552000  1.670000
6.500000  0.976000  4.653000  1.683000
6.600000  0.983000  4.755000  1.696000
6.700000  0.989000  4.858000  1.709000
6.800000  0.995000  4.962000  1.722000
6.900000  1.001000  5.067000  1.735000
7.000000  1.007000  5.173000  1.748000
7.100000  1.013000  5.280000  1.761000
7.200000  1.018000  5.387000  1.774000
7.300000  1.024000  5.496000  3.162000
7.400000  1.030000  5.605000  5.717000
7.500000  1.035000  5.716000  9.027000
7.600000  1.041000  5.827000  12.94600
7.700000  1.046000  5.940000  17.26000
7.800000  1.052000  6.053000  21.92300
7.900000  1.057000  6.167000  26.94800
8.000000  1.062000  6.282000  32.31400
8.100000  1.067000  6.398000  999.0000
END FTABLE 16
FTABLE     36
 91    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.233494  0.000000  0.000000
0.088889  0.236459  0.020887  0.614766
0.177778  0.239425  0.042037  1.936836
0.266667  0.242390  0.063451  3.779425
0.355556  0.245356  0.085129  6.062817
0.444444  0.248321  0.107070  8.737138
0.533333  0.251287  0.129275  11.76705
0.622222  0.254252  0.151743  15.12581
0.711111  0.257218  0.174475  18.79234
0.800000  0.260183  0.197471  22.74953
0.888889  0.263149  0.220730  26.98326
0.977778  0.266114  0.244253  31.48165
1.066667  0.269080  0.268039  36.23463
1.155556  0.272045  0.292089  41.23355
1.244444  0.275011  0.316403  46.47095
1.333333  0.277976  0.340980  51.94036
1.422222  0.280942  0.365821  57.63611
1.511111  0.283907  0.390925  63.55325
1.600000  0.286873  0.416293  69.68741
1.688889  0.289838  0.441925  76.03476
1.777778  0.292804  0.467820  82.59190
1.866667  0.295770  0.493979  89.35584
1.955556  0.298735  0.520401  96.32392
2.044444  0.301701  0.547087  103.4938
2.133333  0.304666  0.574037  110.8633
2.222222  0.307632  0.601250  118.4308
2.311111  0.310598  0.628727  126.1945
2.400000  0.313563  0.656467  134.1530
2.488889  0.316529  0.684472  142.3050
2.577778  0.319495  0.712739  150.6495
2.666667  0.322460  0.741271  159.1854
2.755556  0.325426  0.770066  167.9120
2.844444  0.328392  0.799124  176.8285
2.933333  0.331358  0.828446  185.9343
3.022222  0.334323  0.858032  195.2289
3.111111  0.337289  0.887882  204.7119
3.200000  0.340255  0.917995  214.3828
3.288889  0.343221  0.948371  224.2415
3.377778  0.346186  0.979012  234.2877
3.466667  0.349152  1.009916  244.5212
3.555556  0.352118  1.041083  254.9420
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3.644444  0.355084  1.072514  265.5500
3.733333  0.358050  1.104209  276.3453
3.822222  0.361015  1.136168  287.3278
3.911111  0.363981  1.168390  298.4978
4.000000  0.366947  1.200875  309.8552
4.088889  0.369913  1.233625  321.4003
4.177778  0.372879  1.266638  333.1334
4.266667  0.375845  1.299914  345.0545
4.355556  0.378811  1.333455  357.1641
4.444444  0.381776  1.367258  369.4623
4.533333  0.384742  1.401326  381.9495
4.622222  0.387708  1.435657  394.6260
4.711111  0.390674  1.470252  407.4922
4.800000  0.393640  1.505110  420.5485
4.888889  0.396606  1.540232  433.7952
4.977778  0.399572  1.575618  447.2328
5.066667  0.402538  1.611267  460.8617
5.155556  0.405504  1.647180  474.6824
5.244444  0.408470  1.683357  488.6952
5.333333  0.411436  1.719797  502.9008
5.422222  0.414402  1.756501  517.2995
5.511111  0.417368  1.793469  531.8919
5.600000  0.420334  1.830700  546.6785
5.688889  0.423300  1.868195  561.6598
5.777778  0.426266  1.905953  576.8364
5.866667  0.429232  1.943975  592.2087
5.955556  0.432198  1.982261  607.7773
6.044444  0.435164  2.020811  623.5429
6.133333  0.438130  2.059624  639.5059
6.222222  0.441096  2.098700  655.6668
6.311111  0.444063  2.138041  672.0264
6.400000  0.447029  2.177645  688.5852
6.488889  0.449995  2.217513  705.3438
6.577778  0.452961  2.257644  722.3027
6.666667  0.455927  2.298039  739.4626
6.755556  0.458893  2.338698  756.8241
6.844444  0.461859  2.379620  774.3877
6.933333  0.464826  2.420806  792.1542
7.022222  0.467792  2.462256  810.1241
7.111111  0.470758  2.503969  828.2981
7.200000  0.473724  2.545946  846.6767
7.288889  0.476690  2.588187  865.2606
7.377778  0.479657  2.630691  884.0505
7.466667  0.482623  2.673459  903.0470
7.555556  0.485589  2.716490  922.2507
7.644444  0.488555  2.759786  941.6623
7.733333  0.491522  2.803345  961.2823
7.822222  0.494488  2.847167  981.1116
7.911111  0.497454  2.891254  1001.151
8.000000  0.500420  2.935604  1021.400
END FTABLE 36
FTABLE     64
 91    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.861341  0.000000  0.000000
0.111111  0.863734  0.095837  1.506857
0.222222  0.866127  0.191941  4.759178
0.333333  0.868520  0.288310  9.306695
0.444444  0.870913  0.384945  14.95681
0.555556  0.873306  0.481846  21.58744
0.666667  0.875699  0.579013  29.11039
0.777778  0.878092  0.676446  37.45727
0.888889  0.880486  0.774145  46.57261
1.000000  0.882879  0.872110  56.41005
1.111111  0.885272  0.970340  66.92996
1.222222  0.887665  1.068837  78.09787
1.333333  0.890058  1.167599  89.88340
1.444444  0.892451  1.266627  102.2595
1.555556  0.894844  1.365922  115.2019
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1.666667	0.897238	1.465482	128.6886
1.777778	0.899631	1.565308	142.6996
1.888889	0.902024	1.665400	157.2165
2.000000	0.904417	1.765758	172.2225
2.111111	0.906810	1.866381	187.7020
2.222222	0.909203	1.967271	203.6406
2.333333	0.911596	2.068426	220.0249
2.444444	0.913990	2.169848	236.8424
2.555556	0.916383	2.271535	254.0814
2.666667	0.918776	2.373488	271.7311
2.777778	0.921169	2.475708	289.7811
2.888889	0.923562	2.578193	308.2219
3.000000	0.925955	2.680944	327.0442
3.111111	0.928349	2.783961	346.2397
3.222222	0.930742	2.887243	365.8001
3.333333	0.933135	2.990792	385.7178
3.444444	0.935528	3.094607	405.9857
3.555556	0.937921	3.198687	426.5967
3.666667	0.940315	3.303034	447.5444
3.777778	0.942708	3.407646	468.8225
3.888889	0.945101	3.512524	490.4253
4.000000	0.947494	3.617668	512.3470
4.111111	0.949887	3.723079	534.5823
4.222222	0.952281	3.828755	557.1261
4.333333	0.954674	3.934696	579.9736
4.444444	0.957067	4.040904	603.1200
4.555556	0.959460	4.147378	626.5610
4.666667	0.961853	4.254118	650.2922
4.777778	0.964247	4.361123	674.3097
4.888889	0.966640	4.468395	698.6095
5.000000	0.969033	4.575932	723.1879
5.111111	0.971426	4.683735	748.0413
5.222222	0.973820	4.791805	773.1663
5.333333	0.976213	4.900140	798.5596
5.444444	0.978606	5.008741	824.2180
5.555556	0.980999	5.117608	850.1385
5.666667	0.983392	5.226741	876.3182
5.777778	0.985786	5.336139	902.7542
5.888889	0.988179	5.445804	929.4440
6.000000	0.990572	5.555735	956.3848
6.111111	0.992965	5.665931	983.5742
6.222222	0.995359	5.776394	1011.010
6.333333	0.997752	5.887122	1038.689
6.444444	1.000145	5.998116	1066.611
6.555556	1.002538	6.109377	1094.771
6.666667	1.004932	6.220903	1123.169
6.777778	1.007325	6.332695	1151.803
6.888889	1.009718	6.444753	1180.670
7.000000	1.012112	6.557077	1209.769
7.111111	1.014505	6.669666	1239.097
7.222222	1.016898	6.782522	1268.654
7.333333	1.019291	6.895644	1298.437
7.444444	1.021685	7.009031	1328.445
7.555556	1.024078	7.122685	1358.677
7.666667	1.026471	7.236604	1389.130
7.777778	1.028865	7.350789	1419.804
7.888889	1.031258	7.465241	1450.696
8.000000	1.033651	7.579958	1481.806
8.111111	1.036044	7.694941	1513.133
8.222222	1.038438	7.810190	1544.674
8.333333	1.040831	7.925705	1576.430
8.444444	1.043224	8.041486	1608.398
8.555556	1.045618	8.157532	1640.577
8.666667	1.048011	8.273845	1672.967
8.777778	1.050404	8.390424	1705.566
8.888889	1.052798	8.507268	1738.373
9.000000	1.055191	8.624379	1771.388
9.111111	1.057584	8.741755	1804.608
9.222222	1.059978	8.859398	1838.035
9.333333	1.062371	8.977306	1871.665

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9.444444  1.064764  9.095480  1905.499
9.555556  1.067158  9.213920  1939.536
9.666667  1.069551  9.332626  1973.775
9.777778  1.071944  9.451598  2008.215
9.888889  1.074338  9.570836  2042.855
10.00000  1.076731  9.690340  2077.694
END FTABLE 64
FTABLE     17
 83    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.000000  0.000000  0.000000
0.010000  0.100000  0.001000  0.001000
0.100000  0.104000  0.010000  0.018000
0.200000  0.108000  0.021000  0.046000
0.300000  0.112000  0.032000  0.062000
0.400000  0.116000  0.044000  0.075000
0.500000  0.120000  0.056000  0.086000
0.600000  0.124000  0.068000  0.096000
0.700000  0.128000  0.081000  0.105000
0.800000  0.132000  0.094000  0.113000
0.900000  0.135000  0.107000  0.121000
1.000000  0.139000  0.121000  0.128000
1.100000  0.143000  0.135000  0.135000
1.200000  0.147000  0.150000  0.141000
1.300000  0.151000  0.165000  0.148000
1.400000  0.155000  0.180000  0.153000
1.500000  0.159000  0.196000  0.159000
1.600000  0.162000  0.212000  0.165000
1.700000  0.166000  0.228000  0.170000
1.800000  0.170000  0.245000  0.175000
1.900000  0.174000  0.262000  0.180000
2.000000  0.178000  0.280000  0.185000
2.100000  0.182000  0.298000  0.190000
2.200000  0.185000  0.316000  0.195000
2.300000  0.189000  0.335000  0.199000
2.400000  0.193000  0.354000  0.204000
2.500000  0.197000  0.373000  0.208000
2.600000  0.201000  0.393000  0.212000
2.700000  0.204000  0.413000  0.216000
2.800000  0.208000  0.434000  0.220000
2.900000  0.212000  0.455000  0.224000
3.000000  0.216000  0.476000  0.228000
3.100000  0.220000  0.498000  0.232000
3.200000  0.223000  0.520000  0.236000
3.300000  0.227000  0.542000  0.240000
3.400000  0.231000  0.565000  0.244000
3.500000  0.235000  0.588000  0.247000
3.600000  0.238000  0.612000  0.251000
3.700000  0.242000  0.636000  0.254000
3.800000  0.246000  0.660000  0.258000
3.900000  0.250000  0.685000  0.261000
4.000000  0.253000  0.710000  0.265000
4.100000  0.257000  0.735000  0.268000
4.200000  0.261000  0.761000  0.271000
4.300000  0.265000  0.787000  0.275000
4.400000  0.268000  0.814000  0.331000
4.500000  0.272000  0.841000  0.430000
4.600000  0.276000  0.868000  0.558000
4.700000  0.280000  0.896000  0.709000
4.800000  0.283000  0.924000  0.879000
4.900000  0.287000  0.952000  1.006000
5.000000  0.291000  0.981000  1.104000
5.100000  0.294000  1.010000  1.192000
5.200000  0.298000  1.040000  1.273000
5.300000  0.302000  1.070000  1.348000
5.400000  0.306000  1.100000  1.418000
5.500000  0.309000  1.131000  1.485000
5.600000  0.313000  1.162000  1.548000
5.700000  0.317000  1.193000  1.608000
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5.800000  0.320000  1.225000  1.666000
5.900000  0.324000  1.257000  1.721000
6.000000  0.328000  1.290000  1.775000
6.100000  0.331000  1.323000  1.953000
6.200000  0.335000  1.356000  2.234000
6.300000  0.339000  1.390000  2.582000
6.400000  0.342000  1.424000  2.984000
6.500000  0.346000  1.458000  3.433000
6.600000  0.350000  1.493000  3.922000
6.700000  0.353000  1.528000  4.449000
6.800000  0.357000  1.564000  5.012000
6.900000  0.361000  1.600000  5.606000
7.000000  0.364000  1.636000  6.232000
7.100000  0.368000  1.673000  6.887000
7.200000  0.372000  1.710000  7.569000
7.300000  0.375000  1.747000  8.278000
7.400000  0.379000  1.785000  9.013000
7.500000  0.382000  1.823000  9.773000
7.600000  0.386000  1.862000  10.55600
7.700000  0.390000  1.901000  11.36300
7.800000  0.393000  1.940000  12.19200
7.900000  0.397000  1.980000  13.04300
8.000000  0.401000  2.020000  13.91500
8.100000  0.600000  2.800000  999.0000
END FTABLE 17
FTABLE     37
 91    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.107438  0.000000  0.000000
0.111111  0.108931  0.012020  0.887823
0.222222  0.110424  0.024207  2.795283
0.333333  0.111916  0.036559  5.451393
0.444444  0.113409  0.049077  8.740480
0.555556  0.114902  0.061761  12.59031
0.666667  0.116395  0.074611  16.94988
0.777778  0.117888  0.087627  21.78071
0.888889  0.119381  0.100808  27.05264
1.000000  0.120873  0.114156  32.74131
1.111111  0.122366  0.127669  38.82669
1.222222  0.123859  0.141348  45.29207
1.333333  0.125352  0.155193  52.12333
1.444444  0.126845  0.169204  59.30845
1.555556  0.128338  0.183381  66.83711
1.666667  0.129831  0.197724  74.70041
1.777778  0.131324  0.212232  82.89065
1.888889  0.132817  0.226907  91.40111
2.000000  0.134310  0.241747  100.2259
2.111111  0.135803  0.256754  109.3601
2.222222  0.137296  0.271926  118.7990
2.333333  0.138789  0.287264  128.5388
2.444444  0.140282  0.302768  138.5761
2.555556  0.141775  0.318438  148.9078
2.666667  0.143269  0.334273  159.5315
2.777778  0.144762  0.350275  170.4447
2.888889  0.146255  0.366443  181.6455
3.000000  0.147748  0.382776  193.1323
3.111111  0.149241  0.399276  204.9035
3.222222  0.150734  0.415941  216.9578
3.333333  0.152228  0.432772  229.2943
3.444444  0.153721  0.449769  241.9121
3.555556  0.155214  0.466932  254.8104
3.666667  0.156707  0.484261  267.9886
3.777778  0.158201  0.501756  281.4462
3.888889  0.159694  0.519417  295.1831
4.000000  0.161187  0.537244  309.1989
4.111111  0.162681  0.555236  323.4935
4.222222  0.164174  0.573395  338.0669
4.333333  0.165667  0.591720  352.9192
4.444444  0.167161  0.610210  368.0504
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4.555556  0.168654  0.628866  383.4608
4.666667  0.170147  0.647689  399.1506
4.777778  0.171641  0.666677  415.1201
4.888889  0.173134  0.685831  431.3699
5.000000  0.174628  0.705151  447.9001
5.111111  0.176121  0.724637  464.7115
5.222222  0.177615  0.744289  481.8044
5.333333  0.179108  0.764107  499.1794
5.444444  0.180602  0.784091  516.8371
5.555556  0.182095  0.804241  534.7783
5.666667  0.183589  0.824557  553.0034
5.777778  0.185082  0.845038  571.5133
5.888889  0.186576  0.865686  590.3086
6.000000  0.188069  0.886500  609.3901
6.111111  0.189563  0.907479  628.7585
6.222222  0.191057  0.928625  648.4148
6.333333  0.192550  0.949936  668.3596
6.444444  0.194044  0.971414  688.5938
6.555556  0.195538  0.993057  709.1183
6.666667  0.197031  1.014866  729.9340
6.777778  0.198525  1.036842  751.0417
6.888889  0.200019  1.058983  772.4423
7.000000  0.201512  1.081290  794.1367
7.111111  0.203006  1.103763  816.1260
7.222222  0.204500  1.126403  838.4110
7.333333  0.205994  1.149208  860.9926
7.444444  0.207487  1.172179  883.8719
7.555556  0.208981  1.195316  907.0498
7.666667  0.210475  1.218619  930.5273
7.777778  0.211969  1.242088  954.3054
7.888889  0.213463  1.265724  978.3851
8.000000  0.214957  1.289525  1002.767
8.111111  0.216450  1.313492  1027.453
8.222222  0.217944  1.337625  1052.444
8.333333  0.219438  1.361924  1077.740
8.444444  0.220932  1.386389  1103.343
8.555556  0.222426  1.411020  1129.253
8.666667  0.223920  1.435817  1155.473
8.777778  0.225414  1.460780  1182.002
8.888889  0.226908  1.485909  1208.842
9.000000  0.228402  1.511204  1235.994
9.111111  0.229896  1.536665  1263.459
9.222222  0.231390  1.562292  1291.238
9.333333  0.232884  1.588085  1319.332
9.444444  0.234378  1.614044  1347.743
9.555556  0.235872  1.640169  1376.470
9.666667  0.237366  1.666460  1405.516
9.777778  0.238860  1.692917  1434.882
9.888889  0.240355  1.719540  1464.568
10.00000  0.241849  1.746329  1494.575
END FTABLE 37
FTABLE     65
 91    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.206061  0.000000  0.000000
0.166667  0.206842  0.034409  3.045750
0.333333  0.207624  0.068947  9.601952
0.500000  0.208405  0.103616  18.74379
0.666667  0.209186  0.138416  30.07204
0.833333  0.209968  0.173345  43.33252
1.000000  0.210749  0.208405  58.34118
1.166667  0.211531  0.243595  74.95528
1.333333  0.212312  0.278915  93.05922
1.500000  0.213094  0.314366  112.5566
1.666667  0.213876  0.349947  133.3651
1.833333  0.214657  0.385658  155.4137
2.000000  0.215439  0.421499  178.6400
2.166667  0.216220  0.457471  202.9884
2.333333  0.217002  0.493572  228.4098
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2.500000	0.217783	0.529805	254.8594
2.666667	0.218565	0.566167	282.2971
2.833333	0.219346	0.602659	310.6862
3.000000	0.220128	0.639282	339.9932
3.166667	0.220910	0.676035	370.1874
3.333333	0.221691	0.712919	401.2405
3.500000	0.222473	0.749933	433.1264
3.666667	0.223254	0.787076	465.8209
3.833333	0.224036	0.824351	499.3017
4.000000	0.224818	0.861755	533.5478
4.166667	0.225599	0.899290	568.5399
4.333333	0.226381	0.936955	604.2596
4.500000	0.227163	0.974750	640.6902
4.666667	0.227944	1.012676	677.8157
4.833333	0.228726	1.050732	715.6211
5.000000	0.229508	1.088918	754.0925
5.166667	0.230289	1.127234	793.2166
5.333333	0.231071	1.165681	832.9812
5.500000	0.231853	1.204258	873.3743
5.666667	0.232634	1.242965	914.3851
5.833333	0.233416	1.281802	956.0030
6.000000	0.234198	1.320770	998.2183
6.166667	0.234979	1.359868	1041.022
6.333333	0.235761	1.399097	1084.404
6.500000	0.236543	1.438455	1128.357
6.666667	0.237325	1.477944	1172.873
6.833333	0.238106	1.517564	1217.945
7.000000	0.238888	1.557313	1263.564
7.166667	0.239670	1.597193	1309.725
7.333333	0.240452	1.637203	1356.421
7.500000	0.241233	1.677343	1403.646
7.666667	0.242015	1.717614	1451.393
7.833333	0.242797	1.758015	1499.658
8.000000	0.243579	1.798546	1548.435
8.166667	0.244360	1.839208	1597.718
8.333333	0.245142	1.880000	1647.504
8.500000	0.245924	1.920922	1697.787
8.666667	0.246706	1.961975	1748.564
8.833333	0.247488	2.003157	1799.829
9.000000	0.248270	2.044471	1851.580
9.166667	0.249051	2.085914	1903.811
9.333333	0.249833	2.127488	1956.520
9.500000	0.250615	2.169192	2009.703
9.666667	0.251397	2.211026	2063.357
9.833333	0.252179	2.252991	2117.478
10.00000	0.252961	2.295086	2172.063
10.16667	0.253743	2.337311	2227.110
10.33333	0.254525	2.379667	2282.616
10.50000	0.255306	2.422152	2338.578
10.66667	0.256088	2.464769	2394.993
10.83333	0.256870	2.507515	2451.860
11.00000	0.257652	2.550392	2509.175
11.16667	0.258434	2.593399	2566.936
11.33333	0.259216	2.636537	2625.142
11.50000	0.259998	2.679805	2683.790
11.66667	0.260780	2.723203	2742.879
11.83333	0.261562	2.766731	2802.406
12.00000	0.262344	2.810390	2862.370
12.16667	0.263126	2.854179	2922.768
12.33333	0.263908	2.898099	2983.600
12.50000	0.264690	2.942148	3044.864
12.66667	0.265472	2.986329	3106.557
12.83333	0.266254	3.030639	3168.680
13.00000	0.267036	3.075080	3231.230
13.16667	0.267818	3.119651	3294.206
13.33333	0.268600	3.164352	3357.607
13.50000	0.269382	3.209184	3421.431
13.66667	0.270164	3.254146	3485.678
13.83333	0.270946	3.299239	3550.346
14.00000	0.271728	3.344462	3615.435

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14.16667  0.272510  3.389815  3680.942
14.33333  0.273292  3.435298  3746.868
14.50000  0.274074  3.480912  3813.212
14.66667  0.274856  3.526656  3879.972
14.83333  0.275638  3.572531  3947.147
15.00000  0.276420  3.618536  4014.738
END FTABLE 65
FTABLE     66
 91    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.728788  0.000000  0.000000
0.166667  0.731549  0.121695  3.045750
0.333333  0.734311  0.243850  9.601952
0.500000  0.737072  0.366465  18.74379
0.666667  0.739834  0.489541  30.07204
0.833333  0.742595  0.613076  43.33252
1.000000  0.745357  0.737072  58.34118
1.166667  0.748118  0.861529  74.95528
1.333333  0.750880  0.986445  93.05922
1.500000  0.753642  1.111822  112.5566
1.666667  0.756403  1.237659  133.3651
1.833333  0.759165  1.363956  155.4137
2.000000  0.761926  1.490714  178.6400
2.166667  0.764688  1.617932  202.9884
2.333333  0.767449  1.745610  228.4098
2.500000  0.770211  1.873748  254.8594
2.666667  0.772973  2.002347  282.2971
2.833333  0.775734  2.131406  310.6862
3.000000  0.778496  2.260925  339.9932
3.166667  0.781257  2.390904  370.1874
3.333333  0.784019  2.521344  401.2405
3.500000  0.786781  2.652244  433.1264
3.666667  0.789542  2.783604  465.8209
3.833333  0.792304  2.915425  499.3017
4.000000  0.795066  3.047706  533.5478
4.166667  0.797827  3.180447  568.5399
4.333333  0.800589  3.313648  604.2596
4.500000  0.803351  3.447310  640.6902
4.666667  0.806112  3.581431  677.8157
4.833333  0.808874  3.716014  715.6211
5.000000  0.811636  3.851056  754.0925
5.166667  0.814397  3.986559  793.2166
5.333333  0.817159  4.122522  832.9812
5.500000  0.819921  4.258945  873.3743
5.666667  0.822682  4.395829  914.3851
5.833333  0.825444  4.533173  956.0030
6.000000  0.828206  4.670977  998.2183
6.166667  0.830968  4.809241  1041.022
6.333333  0.833729  4.947966  1084.404
6.500000  0.836491  5.087151  1128.357
6.666667  0.839253  5.226796  1172.873
6.833333  0.842015  5.366902  1217.945
7.000000  0.844776  5.507468  1263.564
7.166667  0.847538  5.648494  1309.725
7.333333  0.850300  5.789981  1356.421
7.500000  0.853062  5.931928  1403.646
7.666667  0.855824  6.074335  1451.393
7.833333  0.858585  6.217202  1499.658
8.000000  0.861347  6.360530  1548.435
8.166667  0.864109  6.504318  1597.718
8.333333  0.866871  6.648566  1647.504
8.500000  0.869633  6.793275  1697.787
8.666667  0.872395  6.938444  1748.564
8.833333  0.875156  7.084073  1799.829
9.000000  0.877918  7.230163  1851.580
9.166667  0.880680  7.376713  1903.811
9.333333  0.883442  7.523723  1956.520
9.500000  0.886204  7.671193  2009.703
9.666667  0.888966  7.819124  2063.357
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9.833333  0.891728  7.967515  2117.478
10.00000  0.894490  8.116367  2172.063
10.16667  0.897252  8.265678  2227.110
10.33333  0.900013  8.415451  2282.616
10.50000  0.902775  8.565683  2338.578
10.66667  0.905537  8.716376  2394.993
10.83333  0.908299  8.867529  2451.860
11.00000  0.911061  9.019142  2509.175
11.16667  0.913823  9.171216  2566.936
11.33333  0.916585  9.323750  2625.142
11.50000  0.919347  9.476744  2683.790
11.66667  0.922109  9.630199  2742.879
11.83333  0.924871  9.784114  2802.406
12.00000  0.927633  9.938489  2862.370
12.16667  0.930395  10.09332  2922.768
12.33333  0.933157  10.24862  2983.600
12.50000  0.935919  10.40438  3044.864
12.66667  0.938681  10.56059  3106.557
12.83333  0.941443  10.71727  3168.680
13.00000  0.944205  10.87441  3231.230
13.16667  0.946967  11.03201  3294.206
13.33333  0.949729  11.19006  3357.607
13.50000  0.952491  11.34858  3421.431
13.66667  0.955253  11.50756  3485.678
13.83333  0.958015  11.66700  3550.346
14.00000  0.960777  11.82690  3615.435
14.16667  0.963540  11.98726  3680.942
14.33333  0.966302  12.14808  3746.868
14.50000  0.969064  12.30936  3813.212
14.66667  0.971826  12.47110  3879.972
14.83333  0.974588  12.63330  3947.147
15.00000  0.977350  12.79596  4014.738
END FTABLE 66
FTABLE     67
 91    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.123232  0.000000  0.000000
0.333333  0.124166  0.041233  4.882721
0.666667  0.125100  0.082777  15.29204
1.000000  0.126034  0.124633  29.66727
1.333333  0.126968  0.166800  47.32186
1.666667  0.127902  0.209278  67.81795
2.000000  0.128835  0.252068  90.84081
2.333333  0.129769  0.295169  116.1494
2.666667  0.130703  0.338581  143.5518
3.000000  0.131637  0.382304  172.8911
3.333333  0.132571  0.426339  204.0361
3.666667  0.133505  0.470685  236.8762
4.000000  0.134439  0.515342  271.3162
4.333333  0.135373  0.560311  307.2741
4.666667  0.136307  0.605590  344.6784
5.000000  0.137240  0.651182  383.4661
5.333333  0.138174  0.697084  423.5821
5.666667  0.139108  0.743298  464.9771
6.000000  0.140042  0.789823  507.6074
6.333333  0.140976  0.836659  551.4340
6.666667  0.141910  0.883807  596.4218
7.000000  0.142844  0.931266  642.5394
7.333333  0.143778  0.979036  689.7582
7.666667  0.144712  1.027118  738.0528
8.000000  0.145646  1.075511  787.3997
8.333333  0.146580  1.124215  837.7779
8.666667  0.147514  1.173231  889.1681
9.000000  0.148448  1.222558  941.5531
9.333333  0.149382  1.272196  994.9167
9.666667  0.150316  1.322146  1049.245
10.00000  0.151250  1.372406  1104.523
10.33333  0.152184  1.422979  1160.741
10.66667  0.153118  1.473862  1217.886
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11.00000  0.154052  1.525057  1275.949
11.33333  0.154985  1.576563  1334.920
11.66667  0.155919  1.628381  1394.791
12.00000  0.156853  1.680510  1455.553
12.33333  0.157787  1.732950  1517.201
12.66667  0.158721  1.785701  1579.726
13.00000  0.159655  1.838764  1643.124
13.33333  0.160589  1.892138  1707.388
13.66667  0.161524  1.945824  1772.514
14.00000  0.162458  1.999821  1838.497
14.33333  0.163392  2.054129  1905.333
14.66667  0.164326  2.108748  1973.018
15.00000  0.165260  2.163679  2041.548
15.33333  0.166194  2.218921  2110.921
15.66667  0.167128  2.274475  2181.133
16.00000  0.168062  2.330340  2252.182
16.33333  0.168996  2.386516  2324.066
16.66667  0.169930  2.443004  2396.783
17.00000  0.170864  2.499802  2470.330
17.33333  0.171798  2.556913  2544.706
17.66667  0.172732  2.614334  2619.909
18.00000  0.173666  2.672067  2695.939
18.33333  0.174600  2.730112  2772.794
18.66667  0.175534  2.788468  2850.473
19.00000  0.176468  2.847135  2928.975
19.33333  0.177402  2.906113  3008.300
19.66667  0.178336  2.965403  3088.447
20.00000  0.179271  3.025004  3169.417
20.33333  0.180205  3.084917  3251.207
20.66667  0.181139  3.145140  3333.819
21.00000  0.182073  3.205676  3417.252
21.33333  0.183007  3.266522  3501.506
21.66667  0.183941  3.327680  3586.582
22.00000  0.184875  3.389150  3672.479
22.33333  0.185809  3.450930  3759.198
22.66667  0.186743  3.513022  3846.740
23.00000  0.187678  3.575426  3935.104
23.33333  0.188612  3.638141  4024.291
23.66667  0.189546  3.701167  4114.302
24.00000  0.190480  3.764505  4205.137
24.33333  0.191414  3.828154  4296.798
24.66667  0.192348  3.892114  4389.284
25.00000  0.193282  3.956386  4482.597
25.33333  0.194217  4.020969  4576.737
25.66667  0.195151  4.085864  4671.706
26.00000  0.196085  4.151069  4767.504
26.33333  0.197019  4.216587  4864.132
26.66667  0.197953  4.282415  4961.592
27.00000  0.198887  4.348556  5059.884
27.33333  0.199822  4.415007  5159.010
27.66667  0.200756  4.481770  5258.971
28.00000  0.201690  4.548844  5359.767
28.33333  0.202624  4.616230  5461.400
28.66667  0.203558  4.683927  5563.872
29.00000  0.204493  4.751935  5667.183
29.33333  0.205427  4.820255  5771.335
29.66667  0.206361  4.888887  5876.329
30.00000  0.207295  4.957829  5982.167
END FTABLE 67
FTABLE     38
 91    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.168457  0.000000  0.000000
0.088889  0.170953  0.015085  0.667260
0.177778  0.173449  0.030392  2.099794
0.266667  0.175946  0.045920  4.093248
0.355556  0.178442  0.061671  6.560397
0.444444  0.180938  0.077643  9.446872
0.533333  0.183434  0.093838  12.71437
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0.622222	0.185930	0.110254	16.33413
0.711111	0.188426	0.126892	20.28363
0.800000	0.190922	0.143752	24.54481
0.888889	0.193419	0.160834	29.10286
0.977778	0.195915	0.178137	33.94547
1.066667	0.198411	0.195663	39.06230
1.155556	0.200907	0.213410	44.44461
1.244444	0.203403	0.231380	50.08490
1.333333	0.205900	0.249571	55.97677
1.422222	0.208396	0.267984	62.11469
1.511111	0.210892	0.286619	68.49390
1.600000	0.213388	0.305476	75.11025
1.688889	0.215885	0.324555	81.96018
1.777778	0.218381	0.343855	89.04056
1.866667	0.220877	0.363378	96.34872
1.955556	0.223374	0.383123	103.8823
2.044444	0.225870	0.403089	111.6393
2.133333	0.228366	0.423277	119.6180
2.222222	0.230863	0.443687	127.8168
2.311111	0.233359	0.464319	136.2346
2.400000	0.235855	0.485173	144.8702
2.488889	0.238352	0.506249	153.7227
2.577778	0.240848	0.527547	162.7914
2.666667	0.243345	0.549067	172.0756
2.755556	0.245841	0.570808	181.5750
2.844444	0.248337	0.592772	191.2891
2.933333	0.250834	0.614957	201.2176
3.022222	0.253330	0.637364	211.3605
3.111111	0.255827	0.659994	221.7176
3.200000	0.258323	0.682845	232.2888
3.288889	0.260820	0.705918	243.0744
3.377778	0.263316	0.729213	254.0744
3.466667	0.265813	0.752730	265.2890
3.555556	0.268309	0.776468	276.7184
3.644444	0.270806	0.800429	288.3630
3.733333	0.273302	0.824612	300.2230
3.822222	0.275799	0.849016	312.2990
3.911111	0.278296	0.873642	324.5912
4.000000	0.280792	0.898491	337.1001
4.088889	0.283289	0.923561	349.8263
4.177778	0.285785	0.948853	362.7703
4.266667	0.288282	0.974367	375.9325
4.355556	0.290779	1.000103	389.3137
4.444444	0.293275	1.026061	402.9143
4.533333	0.295772	1.052241	416.7350
4.622222	0.298269	1.078643	430.7764
4.711111	0.300765	1.105267	445.0392
4.800000	0.303262	1.132112	459.5241
4.888889	0.305759	1.159180	474.2318
4.977778	0.308255	1.186469	489.1629
5.066667	0.310752	1.213981	504.3183
5.155556	0.313249	1.241714	519.6985
5.244444	0.315746	1.269670	535.3045
5.333333	0.318242	1.297847	551.1369
5.422222	0.320739	1.326246	567.1966
5.511111	0.323236	1.354867	583.4842
5.600000	0.325733	1.383710	600.0006
5.688889	0.328230	1.412775	616.7466
5.777778	0.330726	1.442062	633.7231
5.866667	0.333223	1.471571	650.9307
5.955556	0.335720	1.501302	668.3704
6.044444	0.338217	1.531255	686.0429
6.133333	0.340714	1.561429	703.9491
6.222222	0.343211	1.591826	722.0899
6.311111	0.345708	1.622444	740.4660
6.400000	0.348204	1.653285	759.0784
6.488889	0.350701	1.684347	777.9279
6.577778	0.353198	1.715632	797.0153
6.666667	0.355695	1.747138	816.3415
6.755556	0.358192	1.778867	835.9074

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6.844444  0.360689  1.810817  855.7138
6.933333  0.363186  1.842989  875.7617
7.022222  0.365683  1.875383  896.0518
7.111111  0.368180  1.908000  916.5852
7.200000  0.370677  1.940838  937.3625
7.288889  0.373174  1.973898  958.3848
7.377778  0.375671  2.007180  979.6529
7.466667  0.378168  2.040684  1001.168
7.555556  0.380665  2.074410  1022.930
7.644444  0.383162  2.108358  1044.941
7.733333  0.385660  2.142527  1067.201
7.822222  0.388157  2.176919  1089.712
7.911111  0.390654  2.211533  1112.474
8.000000  0.393151  2.246369  1135.487
END FTABLE 38
FTABLE     44
 91    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.346189  0.000000  0.000000
0.088889  0.352344  0.031046  0.450259
0.177778  0.358499  0.062639  1.414704
0.266667  0.364654  0.094779  2.754071
0.355556  0.370808  0.127466  4.409014
0.444444  0.376963  0.160701  6.342797
0.533333  0.383118  0.194482  8.529790
0.622222  0.389273  0.228810  10.95095
0.711111  0.395428  0.263686  13.59159
0.800000  0.401583  0.299109  16.44005
0.888889  0.407737  0.335078  19.48694
0.977778  0.413892  0.371595  22.72457
1.066667  0.420047  0.408659  26.14657
1.155556  0.426202  0.446270  29.74767
1.244444  0.432357  0.484429  33.52343
1.333333  0.438512  0.523134  37.47012
1.422222  0.444667  0.562386  41.58461
1.511111  0.450822  0.602186  45.86426
1.600000  0.456977  0.642532  50.30684
1.688889  0.463132  0.683426  54.91048
1.777778  0.469287  0.724867  59.67360
1.866667  0.475442  0.766855  64.59490
1.955556  0.481597  0.809390  69.67329
2.044444  0.487752  0.852472  74.90790
2.133333  0.493907  0.896101  80.29801
2.222222  0.500062  0.940278  85.84306
2.311111  0.506217  0.985001  91.54264
2.400000  0.512372  1.030272  97.39642
2.488889  0.518527  1.076089  103.4042
2.577778  0.524682  1.122454  109.5659
2.666667  0.530837  1.169366  115.8815
2.755556  0.536992  1.216825  122.3510
2.844444  0.543147  1.264832  128.9746
2.933333  0.549302  1.313385  135.7524
3.022222  0.555458  1.362485  142.6847
3.111111  0.561613  1.412133  149.7717
3.200000  0.567768  1.462328  157.0138
3.288889  0.573923  1.513069  164.4114
3.377778  0.580078  1.564358  171.9647
3.466667  0.586233  1.616194  179.6744
3.555556  0.592389  1.668578  187.5408
3.644444  0.598544  1.721508  195.5644
3.733333  0.604699  1.774985  203.7458
3.822222  0.610854  1.829010  212.0855
3.911111  0.617009  1.883582  220.5840
4.000000  0.623165  1.938700  229.2420
4.088889  0.629320  1.994366  238.0600
4.177778  0.635475  2.050580  247.0386
4.266667  0.641630  2.107340  256.1785
4.355556  0.647786  2.164647  265.4803
4.444444  0.653941  2.222502  274.9447
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4.533333  0.660096  2.280903  284.5723
4.622222  0.666252  2.339852  294.3638
4.711111  0.672407  2.399348  304.3199
4.800000  0.678562  2.459391  314.4413
4.888889  0.684718  2.519981  324.7286
4.977778  0.690873  2.581119  335.1827
5.066667  0.697028  2.642803  345.8041
5.155556  0.703184  2.705035  356.5937
5.244444  0.709339  2.767814  367.5521
5.333333  0.715495  2.831140  378.6801
5.422222  0.721650  2.895013  389.9784
5.511111  0.727805  2.959433  401.4478
5.600000  0.733961  3.024400  413.0889
5.688889  0.740116  3.089915  424.9027
5.777778  0.746272  3.155977  436.8897
5.866667  0.752427  3.222585  449.0508
5.955556  0.758583  3.289741  461.3866
6.044444  0.764738  3.357445  473.8981
6.133333  0.770894  3.425695  486.5859
6.222222  0.777049  3.494492  499.4508
6.311111  0.783205  3.563837  512.4936
6.400000  0.789360  3.633729  525.7149
6.488889  0.795516  3.704168  539.1157
6.577778  0.801671  3.775154  552.6967
6.666667  0.807827  3.846687  566.4586
6.755556  0.813982  3.918767  580.4022
6.844444  0.820138  3.991395  594.5284
6.933333  0.826294  4.064570  608.8377
7.022222  0.832449  4.138292  623.3312
7.111111  0.838605  4.212561  638.0094
7.200000  0.844760  4.287377  652.8732
7.288889  0.850916  4.362740  667.9234
7.377778  0.857072  4.438651  683.1607
7.466667  0.863227  4.515109  698.5860
7.555556  0.869383  4.592114  714.2000
7.644444  0.875539  4.669666  730.0034
7.733333  0.881694  4.747765  745.9971
7.822222  0.887850  4.826411  762.1818
7.911111  0.894006  4.905605  778.5583
8.000000  0.900162  4.985346  795.1274
END FTABLE 44
FTABLE     39
  4    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.000000  0.000000  0.000000
2.000000  2.670000  4.590000  10.00000
4.000000  3.300000  10.55000  50.00000
6.000000  3.950000  17.79000  999.0000
END FTABLE 39
FTABLE     18
 83    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.000000  0.000000  0.000000
0.010000  0.340000  0.003000  0.001000
0.100000  0.345000  0.033000  0.026000
0.200000  0.350000  0.067000  0.074000
0.300000  0.355000  0.102000  0.126000
0.400000  0.360000  0.137000  0.158000
0.500000  0.365000  0.173000  0.184000
0.600000  0.370000  0.210000  0.207000
0.700000  0.375000  0.247000  0.228000
0.800000  0.380000  0.284000  0.247000
0.900000  0.385000  0.322000  0.265000
1.000000  0.390000  0.360000  0.281000
1.100000  0.395000  0.399000  0.297000
1.200000  0.400000  0.439000  0.312000
1.300000  0.405000  0.479000  0.326000
1.400000  0.410000  0.519000  0.340000
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1.500000  0.415000  0.560000  0.353000
1.600000  0.420000  0.602000  0.365000
1.700000  0.425000  0.644000  0.378000
1.800000  0.430000  0.686000  0.389000
1.900000  0.435000  0.729000  0.401000
2.000000  0.440000  0.773000  0.412000
2.100000  0.445000  0.817000  0.423000
2.200000  0.450000  0.861000  0.433000
2.300000  0.455000  0.906000  0.444000
2.400000  0.460000  0.952000  0.454000
2.500000  0.465000  0.998000  0.464000
2.600000  0.470000  1.044000  0.473000
2.700000  0.475000  1.091000  0.483000
2.800000  0.480000  1.139000  0.492000
2.900000  0.485000  1.187000  0.501000
3.000000  0.490000  1.236000  0.510000
3.100000  0.495000  1.285000  0.519000
3.200000  0.500000  1.334000  0.528000
3.300000  0.505000  1.384000  0.536000
3.400000  0.510000  1.435000  0.545000
3.500000  0.515000  1.486000  0.553000
3.600000  0.520000  1.538000  0.561000
3.700000  0.525000  1.590000  0.569000
3.800000  0.530000  1.642000  0.577000
3.900000  0.535000  1.695000  0.585000
4.000000  0.540000  1.749000  0.592000
4.100000  0.545000  1.803000  0.705000
4.200000  0.550000  1.858000  0.905000
4.300000  0.555000  1.913000  1.162000
4.400000  0.560000  1.969000  1.465000
4.500000  0.565000  2.025000  1.807000
4.600000  0.570000  2.082000  2.061000
4.700000  0.575000  2.139000  2.259000
4.800000  0.580000  2.197000  2.436000
4.900000  0.585000  2.255000  2.599000
5.000000  0.590000  2.314000  2.749000
5.100000  0.595000  2.373000  2.891000
5.200000  0.600000  2.432000  3.024000
5.300000  0.605000  2.493000  3.152000
5.400000  0.610000  2.553000  3.273000
5.500000  0.615000  2.615000  3.389000
5.600000  0.620000  2.676000  3.501000
5.700000  0.625000  2.739000  3.610000
5.800000  0.630000  2.802000  3.714000
5.900000  0.635000  2.865000  3.816000
6.000000  0.640000  2.929000  3.914000
6.100000  0.645000  2.993000  4.010000
6.200000  0.650000  3.058000  4.104000
6.300000  0.655000  3.123000  4.195000
6.400000  0.660000  3.189000  4.284000
6.500000  0.665000  3.255000  4.371000
6.600000  0.670000  3.322000  4.456000
6.700000  0.675000  3.389000  4.540000
6.800000  0.680000  3.457000  4.622000
6.900000  0.685000  3.525000  4.702000
7.000000  0.690000  3.594000  4.781000
7.100000  0.695000  3.664000  5.186000
7.200000  0.700000  3.734000  5.859000
7.300000  0.705000  3.804000  6.707000
7.400000  0.710000  3.875000  7.696000
7.500000  0.715000  3.946000  8.807000
7.600000  0.720000  4.018000  10.02700
7.700000  0.725000  4.091000  11.34600
7.800000  0.730000  4.164000  12.75600
7.900000  0.735000  4.237000  14.25300
8.000000  0.740000  4.311000  15.83000
8.100000  0.800000  4.400000  999.0000
END FTABLE 18
FTABLE     19
 82    4
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FINAL

Depth (ft)	Area (acres)	Volume (acre-ft)	Outflow1 (cfs)	Velocity (ft/sec)	Travel Time*** (Minutes)***
0.000000	0.000000	0.000000	0.000000		
0.010000	0.100000	0.001000	0.001000		
0.100000	0.106000	0.008000	0.018000		
0.200000	0.111000	0.019000	0.046000		
0.300000	0.116000	0.030000	0.062000		
0.400000	0.121000	0.042000	0.075000		
0.500000	0.125000	0.054000	0.086000		
0.600000	0.130000	0.066000	0.096000		
0.700000	0.135000	0.080000	0.105000		
0.800000	0.140000	0.093000	0.113000		
0.900000	0.145000	0.107000	0.121000		
1.000000	0.150000	0.122000	0.128000		
1.100000	0.155000	0.137000	0.135000		
1.200000	0.160000	0.153000	0.141000		
1.300000	0.165000	0.169000	0.148000		
1.400000	0.170000	0.185000	0.153000		
1.500000	0.175000	0.202000	0.159000		
1.600000	0.180000	0.220000	0.165000		
1.700000	0.185000	0.238000	0.170000		
1.800000	0.190000	0.257000	0.175000		
1.900000	0.195000	0.276000	0.180000		
2.000000	0.200000	0.295000	0.185000		
2.100000	0.205000	0.315000	0.190000		
2.200000	0.210000	0.336000	0.195000		
2.300000	0.214000	0.357000	0.199000		
2.400000	0.219000	0.378000	0.204000		
2.500000	0.224000	0.400000	0.208000		
2.600000	0.229000	0.423000	0.212000		
2.700000	0.234000	0.445000	0.216000		
2.800000	0.239000	0.469000	0.220000		
2.900000	0.244000	0.493000	0.224000		
3.000000	0.249000	0.517000	0.228000		
3.100000	0.254000	0.542000	0.232000		
3.200000	0.259000	0.568000	0.236000		
3.300000	0.263000	0.593000	0.240000		
3.400000	0.268000	0.620000	0.244000		
3.500000	0.273000	0.647000	0.247000		
3.600000	0.278000	0.674000	0.251000		
3.700000	0.283000	0.702000	0.254000		
3.800000	0.288000	0.730000	0.284000		
3.900000	0.293000	0.759000	0.336000		
4.000000	0.297000	0.788000	0.401000		
4.100000	0.302000	0.818000	0.479000		
4.200000	0.307000	0.848000	0.566000		
4.300000	0.312000	0.879000	0.631000		
4.400000	0.317000	0.910000	0.682000		
4.500000	0.322000	0.942000	0.727000		
4.600000	0.326000	0.974000	0.875000		
4.700000	0.331000	1.007000	1.106000		
4.800000	0.336000	1.040000	1.393000		
4.900000	0.341000	1.074000	1.723000		
5.000000	0.346000	1.108000	2.091000		
5.100000	0.351000	1.143000	2.493000		
5.200000	0.355000	1.178000	2.926000		
5.300000	0.360000	1.214000	3.388000		
5.400000	0.365000	1.250000	3.876000		
5.500000	0.370000	1.287000	4.391000		
5.600000	0.375000	1.324000	4.929000		
5.700000	0.379000	1.361000	5.491000		
5.800000	0.384000	1.399000	6.074000		
5.900000	0.389000	1.438000	6.679000		
6.000000	0.394000	1.477000	7.305000		
6.100000	0.398000	1.517000	8.712000		
6.200000	0.403000	1.557000	10.65600		
6.300000	0.408000	1.597000	13.03400		
6.400000	0.413000	1.638000	15.76300		
6.500000	0.418000	1.680000	18.79400		
6.600000	0.422000	1.722000	22.09400		

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6.700000  0.427000  1.764000  25.64100
6.800000  0.432000  1.807000  29.41700
6.900000  0.437000  1.851000  33.40600
7.000000  0.441000  1.895000  37.59700
7.100000  0.446000  1.939000  41.98000
7.200000  0.451000  1.984000  46.54700
7.300000  0.456000  2.030000  51.28800
7.400000  0.460000  2.076000  56.19900
7.500000  0.465000  2.122000  61.27300
7.600000  0.470000  2.169000  66.50400
7.700000  0.474000  2.217000  71.88800
7.800000  0.479000  2.264000  77.42000
7.900000  0.484000  2.313000  83.09700
8.000000  0.489000  2.362000  999.0000
END FTABLE 19
FTABLE     49
 91    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.068779  0.000000  0.000000
0.088889  0.070307  0.006182  0.434932
0.177778  0.071836  0.012499  1.363508
0.266667  0.073365  0.018952  2.649532
0.355556  0.074894  0.025542  4.235304
0.444444  0.076423  0.032267  6.085573
0.533333  0.077952  0.039128  8.176158
0.622222  0.079480  0.046125  10.48944
0.711111  0.081009  0.053258  13.01210
0.800000  0.082538  0.060527  15.73383
0.888889  0.084067  0.067931  18.64650
0.977778  0.085596  0.075472  21.74365
1.066667  0.087125  0.083148  25.02009
1.155556  0.088654  0.090961  28.47162
1.244444  0.090183  0.098909  32.09486
1.333333  0.091712  0.106993  35.88709
1.422222  0.093241  0.115213  39.84612
1.511111  0.094770  0.123570  43.97018
1.600000  0.096299  0.132061  48.25791
1.688889  0.097828  0.140689  52.70824
1.777778  0.099357  0.149453  57.32037
1.866667  0.100886  0.158353  62.09371
1.955556  0.102415  0.167388  67.02790
2.044444  0.103944  0.176560  72.12271
2.133333  0.105474  0.185867  77.37808
2.222222  0.107003  0.195311  82.79405
2.311111  0.108532  0.204890  88.37080
2.400000  0.110061  0.214605  94.10858
2.488889  0.111590  0.224457  100.0077
2.577778  0.113119  0.234444  106.0687
2.666667  0.114649  0.244567  112.2919
2.755556  0.116178  0.254826  118.6780
2.844444  0.117707  0.265221  125.2274
2.933333  0.119236  0.275751  131.9410
3.022222  0.120766  0.286418  138.8192
3.111111  0.122295  0.297221  145.8629
3.200000  0.123824  0.308159  153.0728
3.288889  0.125354  0.319234  160.4496
3.377778  0.126883  0.330445  167.9942
3.466667  0.128412  0.341791  175.7074
3.555556  0.129942  0.353273  183.5900
3.644444  0.131471  0.364892  191.6430
3.733333  0.133001  0.376646  199.8671
3.822222  0.134530  0.388536  208.2633
3.911111  0.136059  0.400562  216.8325
4.000000  0.137589  0.412725  225.5756
4.088889  0.139118  0.425023  234.4935
4.177778  0.140648  0.437457  243.5873
4.266667  0.142177  0.450027  252.8577
4.355556  0.143707  0.462733  262.3059
4.444444  0.145236  0.475575  271.9327
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4.533333  0.146766  0.488552  281.7392
4.622222  0.148295  0.501666  291.7263
4.711111  0.149825  0.514916  301.8950
4.800000  0.151355  0.528302  312.2462
4.888889  0.152884  0.541824  322.7811
4.977778  0.154414  0.555481  333.5005
5.066667  0.155944  0.569275  344.4055
5.155556  0.157473  0.583205  355.4970
5.244444  0.159003  0.597270  366.7762
5.333333  0.160533  0.611472  378.2439
5.422222  0.162062  0.625809  389.9012
5.511111  0.163592  0.640283  401.7491
5.600000  0.165122  0.654892  413.7887
5.688889  0.166651  0.669638  426.0208
5.777778  0.168181  0.684519  438.4466
5.866667  0.169711  0.699537  451.0670
5.955556  0.171241  0.714690  463.8831
6.044444  0.172771  0.729979  476.8959
6.133333  0.174300  0.745405  490.1063
6.222222  0.175830  0.760966  503.5155
6.311111  0.177360  0.776664  517.1243
6.400000  0.178890  0.792497  530.9339
6.488889  0.180420  0.808466  544.9452
6.577778  0.181950  0.824572  559.1593
6.666667  0.183480  0.840813  573.5771
6.755556  0.185010  0.857190  588.1997
6.844444  0.186540  0.873704  603.0281
6.933333  0.188070  0.890353  618.0632
7.022222  0.189600  0.907138  633.3062
7.111111  0.191130  0.924059  648.7579
7.200000  0.192660  0.941117  664.4195
7.288889  0.194190  0.958310  680.2919
7.377778  0.195720  0.975639  696.3761
7.466667  0.197250  0.993105  712.6731
7.555556  0.198780  1.010706  729.1839
7.644444  0.200310  1.028443  745.9096
7.733333  0.201840  1.046317  762.8510
7.822222  0.203370  1.064326  780.0093
7.911111  0.204900  1.082471  797.3855
8.000000  0.206430  1.100753  814.9804
END FTABLE 49
FTABLE     45
 91    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.131772  0.000000  0.000000
0.088889  0.134701  0.011843  0.443984
0.177778  0.137630  0.023947  1.391885
0.266667  0.140558  0.036311  2.704672
0.355556  0.143487  0.048935  4.323447
0.444444  0.146416  0.061820  6.212223
0.533333  0.149344  0.074964  8.346316
0.622222  0.152273  0.088370  10.70774
0.711111  0.155202  0.102035  13.28290
0.800000  0.158131  0.115961  16.06127
0.888889  0.161059  0.130147  19.03457
0.977778  0.163988  0.144594  22.19617
1.066667  0.166917  0.159301  25.54079
1.155556  0.169846  0.174268  29.06415
1.244444  0.172775  0.189496  32.76281
1.333333  0.175704  0.204984  36.63396
1.422222  0.178633  0.220732  40.67537
1.511111  0.181561  0.236740  44.88527
1.600000  0.184490  0.253009  49.26223
1.688889  0.187419  0.269539  53.80518
1.777778  0.190348  0.286328  58.51329
1.866667  0.193277  0.303378  63.38598
1.955556  0.196206  0.320689  68.42285
2.044444  0.199135  0.338260  73.62369
2.133333  0.202064  0.356091  78.98843
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2.222222  0.204993  0.374182  84.51712
2.311111  0.207922  0.392534  90.20993
2.400000  0.210851  0.411146  96.06712
2.488889  0.213780  0.430019  102.0891
2.577778  0.216710  0.449151  108.2761
2.666667  0.219639  0.468545  114.6289
2.755556  0.222568  0.488198  121.1478
2.844444  0.225497  0.508112  127.8336
2.933333  0.228426  0.528287  134.6868
3.022222  0.231355  0.548721  141.7082
3.111111  0.234284  0.569416  148.8985
3.200000  0.237214  0.590372  156.2584
3.288889  0.240143  0.611588  163.7888
3.377778  0.243072  0.633064  171.4904
3.466667  0.246001  0.654801  179.3641
3.555556  0.248931  0.676798  187.4108
3.644444  0.251860  0.699055  195.6313
3.733333  0.254789  0.721573  204.0266
3.822222  0.257719  0.744351  212.5976
3.911111  0.260648  0.767389  221.3451
4.000000  0.263577  0.790688  230.2701
4.088889  0.266507  0.814248  239.3737
4.177778  0.269436  0.838067  248.6567
4.266667  0.272365  0.862147  258.1201
4.355556  0.275295  0.886488  267.7649
4.444444  0.278224  0.911089  277.5920
4.533333  0.281154  0.935950  287.6026
4.622222  0.284083  0.961071  297.7975
4.711111  0.287013  0.986454  308.1778
4.800000  0.289942  1.012096  318.7445
4.888889  0.292872  1.037999  329.4986
4.977778  0.295801  1.064162  340.4411
5.066667  0.298731  1.090586  351.5731
5.155556  0.301660  1.117270  362.8955
5.244444  0.304590  1.144214  374.4093
5.333333  0.307520  1.171419  386.1157
5.422222  0.310449  1.198884  398.0157
5.511111  0.313379  1.226610  410.1101
5.600000  0.316308  1.254596  422.4002
5.688889  0.319238  1.282843  434.8870
5.777778  0.322168  1.311350  447.5713
5.866667  0.325098  1.340117  460.4544
5.955556  0.328027  1.369145  473.5372
6.044444  0.330957  1.398433  486.8208
6.133333  0.333887  1.427982  500.3062
6.222222  0.336816  1.457791  513.9944
6.311111  0.339746  1.487860  527.8865
6.400000  0.342676  1.518190  541.9834
6.488889  0.345606  1.548780  556.2863
6.577778  0.348536  1.579631  570.7962
6.666667  0.351466  1.610742  585.5141
6.755556  0.354395  1.642114  600.4410
6.844444  0.357325  1.673746  615.5780
6.933333  0.360255  1.705638  630.9260
7.022222  0.363185  1.737791  646.4862
7.111111  0.366115  1.770204  662.2595
7.200000  0.369045  1.802878  678.2470
7.288889  0.371975  1.835812  694.4497
7.377778  0.374905  1.869007  710.8687
7.466667  0.377835  1.902462  727.5049
7.555556  0.380765  1.936178  744.3593
7.644444  0.383695  1.970154  761.4331
7.733333  0.386625  2.004390  778.7271
7.822222  0.389555  2.038887  796.2425
7.911111  0.392485  2.073644  813.9802
8.000000  0.395415  2.108662  831.9413
END FTABLE 45
FTABLE     20
 83    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
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DRAFT

(ft)	(acres)	(acre-ft)	(cfs)	(ft/sec)	(Minutes)***
0.000000	0.000000	0.000000	0.000000		
0.010000	0.100000	0.001000	0.000000		
0.100000	0.104000	0.010000	0.013000		
0.200000	0.108000	0.021000	0.028000		
0.300000	0.112000	0.032000	0.037000		
0.400000	0.116000	0.044000	0.044000		
0.500000	0.120000	0.056000	0.050000		
0.600000	0.124000	0.068000	0.055000		
0.700000	0.128000	0.081000	0.060000		
0.800000	0.132000	0.094000	0.065000		
0.900000	0.135000	0.107000	0.069000		
1.000000	0.139000	0.121000	0.073000		
1.100000	0.143000	0.135000	0.077000		
1.200000	0.147000	0.150000	0.080000		
1.300000	0.151000	0.165000	0.084000		
1.400000	0.155000	0.180000	0.087000		
1.500000	0.159000	0.196000	0.090000		
1.600000	0.162000	0.212000	0.093000		
1.700000	0.166000	0.228000	0.096000		
1.800000	0.170000	0.245000	0.099000		
1.900000	0.174000	0.262000	0.102000		
2.000000	0.178000	0.280000	0.131000		
2.100000	0.182000	0.298000	0.182000		
2.200000	0.185000	0.316000	0.247000		
2.300000	0.189000	0.335000	0.323000		
2.400000	0.193000	0.354000	0.409000		
2.500000	0.197000	0.373000	0.474000		
2.600000	0.201000	0.393000	0.524000		
2.700000	0.204000	0.413000	0.569000		
2.800000	0.208000	0.434000	0.610000		
2.900000	0.212000	0.455000	0.648000		
3.000000	0.216000	0.476000	0.684000		
3.100000	0.220000	0.498000	0.718000		
3.200000	0.223000	0.520000	0.750000		
3.300000	0.227000	0.542000	0.781000		
3.400000	0.231000	0.565000	0.810000		
3.500000	0.235000	0.588000	0.839000		
3.600000	0.238000	0.612000	1.024000		
3.700000	0.242000	0.636000	1.340000		
3.800000	0.246000	0.660000	1.739000		
3.900000	0.250000	0.685000	2.207000		
4.000000	0.253000	0.710000	2.734000		
4.100000	0.257000	0.735000	3.313000		
4.200000	0.261000	0.761000	3.940000		
4.300000	0.265000	0.787000	4.612000		
4.400000	0.268000	0.814000	5.324000		
4.500000	0.272000	0.841000	6.076000		
4.600000	0.276000	0.868000	6.865000		
4.700000	0.280000	0.896000	7.689000		
4.800000	0.283000	0.924000	8.547000		
4.900000	0.287000	0.952000	9.438000		
5.000000	0.291000	0.981000	10.36000		
5.100000	0.294000	1.010000	12.03300		
5.200000	0.298000	1.040000	14.16400		
5.300000	0.302000	1.070000	16.71900		
5.400000	0.306000	1.100000	19.61600		
5.500000	0.309000	1.131000	22.80800		
5.600000	0.313000	1.162000	26.26400		
5.700000	0.317000	1.193000	29.96000		
5.800000	0.320000	1.225000	33.88000		
5.900000	0.324000	1.257000	38.00900		
6.000000	0.328000	1.290000	42.33600		
6.100000	0.331000	1.323000	46.85100		
6.200000	0.335000	1.356000	51.54500		
6.300000	0.339000	1.390000	56.41200		
6.400000	0.342000	1.424000	61.44500		
6.500000	0.346000	1.458000	66.63800		
6.600000	0.350000	1.493000	71.98500		
6.700000	0.353000	1.528000	77.48300		

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6.800000  0.357000  1.564000  83.12800
6.900000  0.361000  1.600000  88.91400
7.000000  0.364000  1.636000  94.83900
7.100000  0.368000  1.673000  100.8990
7.200000  0.372000  1.710000  107.0910
7.300000  0.375000  1.747000  113.4120
7.400000  0.379000  1.785000  119.8600
7.500000  0.382000  1.823000  126.4320
7.600000  0.386000  1.862000  133.1250
7.700000  0.390000  1.901000  139.9380
7.800000  0.393000  1.940000  146.8680
7.900000  0.397000  1.980000  153.9140
8.000000  0.401000  2.020000  161.0730
8.100000  0.600000  3.200000  999.0000
END FTABLE 20
FTABLE     21
 82    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.000000  0.000000  0.000000
0.010000  0.540000  0.005000  0.001000
0.200000  0.553000  0.110000  0.099000
0.300000  0.560000  0.165000  0.168000
0.400000  0.567000  0.221000  0.210000
0.500000  0.575000  0.278000  0.246000
0.600000  0.582000  0.336000  0.277000
0.700000  0.589000  0.394000  0.304000
0.800000  0.596000  0.453000  0.330000
0.900000  0.603000  0.513000  0.353000
1.000000  0.610000  0.573000  0.375000
1.100000  0.617000  0.635000  0.396000
1.200000  0.624000  0.696000  0.416000
1.300000  0.631000  0.759000  0.435000
1.400000  0.638000  0.822000  0.453000
1.500000  0.645000  0.886000  0.471000
1.600000  0.652000  0.951000  0.487000
1.700000  0.659000  1.017000  0.504000
1.800000  0.666000  1.083000  0.519000
1.900000  0.673000  1.150000  0.535000
2.000000  0.680000  1.217000  0.549000
2.100000  0.687000  1.286000  0.564000
2.200000  0.694000  1.355000  0.578000
2.300000  0.702000  1.425000  0.592000
2.400000  0.709000  1.495000  0.605000
2.500000  0.716000  1.566000  0.618000
2.600000  0.723000  1.638000  0.631000
2.700000  0.730000  1.711000  0.697000
2.800000  0.737000  1.784000  0.805000
2.900000  0.744000  1.858000  0.942000
3.000000  0.751000  1.933000  1.102000
3.100000  0.758000  2.009000  1.281000
3.200000  0.765000  2.085000  1.477000
3.300000  0.773000  2.162000  1.690000
3.400000  0.780000  2.240000  1.918000
3.500000  0.787000  2.318000  2.132000
3.600000  0.794000  2.397000  2.280000
3.700000  0.801000  2.477000  2.417000
3.800000  0.808000  2.558000  2.545000
3.900000  0.815000  2.639000  2.665000
4.000000  0.823000  2.721000  2.779000
4.100000  0.830000  2.804000  2.888000
4.200000  0.837000  2.887000  2.992000
4.300000  0.844000  2.971000  3.093000
4.400000  0.851000  3.056000  3.189000
4.500000  0.858000  3.142000  3.283000
4.600000  0.866000  3.228000  3.373000
4.700000  0.873000  3.315000  3.461000
4.800000  0.880000  3.403000  3.547000
4.900000  0.887000  3.491000  3.630000
5.000000  0.894000  3.580000  3.711000
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5.100000  0.901000  3.670000  4.096000
5.200000  0.909000  3.761000  4.732000
5.300000  0.916000  3.852000  5.531000
5.400000  0.923000  3.944000  6.462000
5.500000  0.930000  4.037000  7.506000
5.600000  0.937000  4.130000  8.652000
5.700000  0.945000  4.225000  9.890000
5.800000  0.952000  4.319000  11.21300
5.900000  0.959000  4.415000  12.61600
6.000000  0.966000  4.511000  14.09500
6.100000  0.974000  4.608000  15.64500
6.200000  0.981000  4.706000  17.26300
6.300000  0.988000  4.805000  18.94600
6.400000  0.995000  4.904000  20.69200
6.500000  1.002000  5.004000  22.49900
6.600000  1.010000  5.105000  24.36300
6.700000  1.017000  5.206000  26.28400
6.800000  1.024000  5.308000  28.26000
6.900000  1.031000  5.411000  30.28900
7.000000  1.039000  5.514000  32.37000
7.100000  1.046000  5.619000  34.50200
7.200000  1.053000  5.724000  36.68300
7.300000  1.060000  5.829000  38.91200
7.400000  1.068000  5.936000  41.18800
7.500000  1.075000  6.043000  43.51000
7.600000  1.082000  6.151000  45.95200
7.700000  1.090000  6.259000  48.74500
7.800000  1.097000  6.368000  52.53400
7.900000  1.104000  6.478000  56.95900
8.000000  1.111000  6.589000  61.89300
8.100000  1.119000  6.701000  999.0000
END FTABLE 21
FTABLE     22
 83    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.000000  0.000000  0.000000
0.010000  0.100000  0.001000  0.001000
0.100000  0.104000  0.010000  0.018000
0.200000  0.108000  0.021000  0.046000
0.300000  0.112000  0.032000  0.062000
0.400000  0.116000  0.044000  0.075000
0.500000  0.120000  0.056000  0.086000
0.600000  0.124000  0.068000  0.096000
0.700000  0.128000  0.081000  0.105000
0.800000  0.132000  0.094000  0.113000
0.900000  0.135000  0.107000  0.121000
1.000000  0.139000  0.121000  0.128000
1.100000  0.143000  0.135000  0.135000
1.200000  0.147000  0.150000  0.141000
1.300000  0.151000  0.165000  0.148000
1.400000  0.155000  0.180000  0.153000
1.500000  0.159000  0.196000  0.159000
1.600000  0.162000  0.212000  0.165000
1.700000  0.166000  0.228000  0.170000
1.800000  0.170000  0.245000  0.175000
1.900000  0.174000  0.262000  0.180000
2.000000  0.178000  0.280000  0.185000
2.100000  0.182000  0.298000  0.190000
2.200000  0.185000  0.316000  0.195000
2.300000  0.189000  0.335000  0.199000
2.400000  0.193000  0.354000  0.204000
2.500000  0.197000  0.373000  0.208000
2.600000  0.201000  0.393000  0.212000
2.700000  0.204000  0.413000  0.216000
2.800000  0.208000  0.434000  0.220000
2.900000  0.212000  0.455000  0.224000
3.000000  0.216000  0.476000  0.228000
3.100000  0.220000  0.498000  0.232000
3.200000  0.223000  0.520000  0.236000
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3.300000  0.227000  0.542000  0.240000
3.400000  0.231000  0.565000  0.244000
3.500000  0.235000  0.588000  0.247000
3.600000  0.238000  0.612000  0.251000
3.700000  0.242000  0.636000  0.254000
3.800000  0.246000  0.660000  0.258000
3.900000  0.250000  0.685000  0.261000
4.000000  0.253000  0.710000  0.335000
4.100000  0.257000  0.735000  0.467000
4.200000  0.261000  0.761000  0.636000
4.300000  0.265000  0.787000  0.792000
4.400000  0.268000  0.814000  0.896000
4.500000  0.272000  0.841000  0.985000
4.600000  0.276000  0.868000  1.066000
4.700000  0.280000  0.896000  1.139000
4.800000  0.283000  0.924000  1.207000
4.900000  0.287000  0.952000  1.270000
5.000000  0.291000  0.981000  1.330000
5.100000  0.294000  1.010000  1.387000
5.200000  0.298000  1.040000  1.442000
5.300000  0.302000  1.070000  1.494000
5.400000  0.306000  1.100000  1.544000
5.500000  0.309000  1.131000  1.592000
5.600000  0.313000  1.162000  1.797000
5.700000  0.317000  1.193000  2.131000
5.800000  0.320000  1.225000  2.549000
5.900000  0.324000  1.257000  3.035000
6.000000  0.328000  1.290000  3.579000
6.100000  0.331000  1.323000  4.175000
6.200000  0.335000  1.356000  4.819000
6.300000  0.339000  1.390000  5.507000
6.400000  0.342000  1.424000  6.235000
6.500000  0.346000  1.458000  7.003000
6.600000  0.350000  1.493000  7.639000
6.700000  0.353000  1.528000  8.123000
6.800000  0.357000  1.564000  8.576000
6.900000  0.361000  1.600000  9.002000
7.000000  0.364000  1.636000  9.407000
7.100000  0.368000  1.673000  9.793000
7.200000  0.372000  1.710000  10.16300
7.300000  0.375000  1.747000  10.51800
7.400000  0.379000  1.785000  10.86100
7.500000  0.382000  1.823000  11.19300
7.600000  0.386000  1.862000  11.51400
7.700000  0.390000  1.901000  11.82600
7.800000  0.393000  1.940000  12.12900
7.900000  0.397000  1.980000  12.42400
8.000000  0.401000  2.020000  12.71300
8.100000  0.404000  2.060000  999.0000
END FTABLE 22
FTABLE     69
 91    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.200872  0.000000  0.000000
0.333333  0.202212  0.067181  4.887855
0.666667  0.203552  0.134808  15.33176
1.000000  0.204891  0.202882  29.78675
1.333333  0.206231  0.271402  47.57501
1.666667  0.207570  0.340369  68.26373
2.000000  0.208910  0.409782  91.54075
2.333333  0.210249  0.479642  117.1660
2.666667  0.211589  0.549949  144.9474
3.000000  0.212929  0.620702  174.7268
3.333333  0.214268  0.691901  206.3715
3.666667  0.215608  0.763547  239.7688
4.000000  0.216948  0.835640  274.8211
4.333333  0.218287  0.908179  311.4438
4.666667  0.219627  0.981164  349.5627
5.000000  0.220967  1.054597  389.1120
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DRAFT

5.333333	0.222306	1.128476	430.0337
5.666667	0.223646	1.202801	472.2758
6.000000	0.224986	1.277573	515.7917
6.333333	0.226325	1.352791	560.5397
6.666667	0.227665	1.428456	606.4818
7.000000	0.229005	1.504568	653.5840
7.333333	0.230344	1.581126	701.8152
7.666667	0.231684	1.658131	751.1473
8.000000	0.233024	1.735582	801.5544
8.333333	0.234363	1.813480	853.0131
8.666667	0.235703	1.891824	905.5019
9.000000	0.237043	1.970615	959.0011
9.333333	0.238383	2.049853	1013.493
9.666667	0.239722	2.129537	1068.960
10.00000	0.241062	2.209668	1125.387
10.33333	0.242402	2.290245	1182.761
10.66667	0.243741	2.371269	1241.068
11.00000	0.245081	2.452739	1300.296
11.33333	0.246421	2.534656	1360.435
11.66667	0.247761	2.617020	1421.473
12.00000	0.249101	2.699830	1483.402
12.33333	0.250440	2.783087	1546.213
12.66667	0.251780	2.866790	1609.897
13.00000	0.253120	2.950940	1674.447
13.33333	0.254460	3.035537	1739.856
13.66667	0.255799	3.120580	1806.119
14.00000	0.257139	3.206070	1873.228
14.33333	0.258479	3.292006	1941.178
14.66667	0.259819	3.378389	2009.964
15.00000	0.261159	3.465219	2079.582
15.33333	0.262499	3.552495	2150.026
15.66667	0.263838	3.640218	2221.294
16.00000	0.265178	3.728387	2293.381
16.33333	0.266518	3.817003	2366.284
16.66667	0.267858	3.906066	2440.000
17.00000	0.269198	3.995575	2514.525
17.33333	0.270538	4.085531	2589.857
17.66667	0.271877	4.175933	2665.995
18.00000	0.273217	4.266783	2742.934
18.33333	0.274557	4.358078	2820.674
18.66667	0.275897	4.449821	2899.212
19.00000	0.277237	4.542010	2978.547
19.33333	0.278577	4.634645	3058.677
19.66667	0.279917	4.727728	3139.601
20.00000	0.281257	4.821257	3221.318
20.33333	0.282597	4.915232	3303.826
20.66667	0.283936	5.009654	3387.125
21.00000	0.285276	5.104523	3471.213
21.33333	0.286616	5.199838	3556.090
21.66667	0.287956	5.295601	3641.756
22.00000	0.289296	5.391809	3728.209
22.33333	0.290636	5.488465	3815.450
22.66667	0.291976	5.585567	3903.478
23.00000	0.293316	5.683115	3992.292
23.33333	0.294656	5.781111	4081.893
23.66667	0.295996	5.879553	4172.281
24.00000	0.297336	5.978441	4263.455
24.33333	0.298676	6.077777	4355.416
24.66667	0.300016	6.177559	4448.163
25.00000	0.301356	6.277787	4541.697
25.33333	0.302696	6.378463	4636.018
25.66667	0.304036	6.479585	4731.127
26.00000	0.305376	6.581153	4827.023
26.33333	0.306716	6.683169	4923.708
26.66667	0.308056	6.785631	5021.181
27.00000	0.309396	6.888539	5119.443
27.33333	0.310736	6.991894	5218.495
27.66667	0.312076	7.095696	5318.337
28.00000	0.313416	7.199945	5418.970
28.33333	0.314756	7.304640	5520.395

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28.66667  0.316096  7.409783  5622.612
29.00000  0.317436  7.515371  5725.622
29.33333  0.318776  7.621407  5829.426
29.66667  0.320116  7.727889  5934.025
30.00000  0.321456  7.834818  6039.419
END FTABLE 69
FTABLE     23
 83    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.000000  0.000000  0.000000
0.010000  0.100000  0.001000  0.001000
0.100000  0.104000  0.010000  0.022000
0.200000  0.108000  0.021000  0.057000
0.300000  0.112000  0.032000  0.078000
0.400000  0.116000  0.044000  0.094000
0.500000  0.119000  0.056000  0.108000
0.600000  0.123000  0.068000  0.120000
0.700000  0.127000  0.081000  0.131000
0.800000  0.131000  0.094000  0.142000
0.900000  0.135000  0.107000  0.151000
1.000000  0.139000  0.121000  0.160000
1.100000  0.143000  0.135000  0.169000
1.200000  0.146000  0.150000  0.177000
1.300000  0.150000  0.165000  0.184000
1.400000  0.154000  0.180000  0.192000
1.500000  0.158000  0.196000  0.199000
1.600000  0.162000  0.212000  0.206000
1.700000  0.166000  0.228000  0.213000
1.800000  0.169000  0.245000  0.219000
1.900000  0.173000  0.262000  0.225000
2.000000  0.177000  0.280000  0.231000
2.100000  0.181000  0.298000  0.237000
2.200000  0.185000  0.316000  0.243000
2.300000  0.189000  0.335000  0.249000
2.400000  0.192000  0.354000  0.254000
2.500000  0.196000  0.373000  0.260000
2.600000  0.200000  0.393000  0.265000
2.700000  0.204000  0.413000  0.270000
2.800000  0.208000  0.434000  0.276000
2.900000  0.211000  0.455000  0.281000
3.000000  0.215000  0.476000  0.286000
3.100000  0.219000  0.498000  0.290000
3.200000  0.223000  0.520000  0.295000
3.300000  0.227000  0.542000  0.300000
3.400000  0.230000  0.565000  0.304000
3.500000  0.234000  0.588000  0.309000
3.600000  0.238000  0.612000  0.314000
3.700000  0.242000  0.636000  0.318000
3.800000  0.245000  0.660000  0.322000
3.900000  0.249000  0.685000  0.327000
4.000000  0.253000  0.710000  0.331000
4.100000  0.257000  0.735000  0.335000
4.200000  0.260000  0.761000  0.339000
4.300000  0.264000  0.787000  0.343000
4.400000  0.268000  0.814000  0.347000
4.500000  0.272000  0.841000  0.351000
4.600000  0.275000  0.868000  0.355000
4.700000  0.279000  0.896000  0.359000
4.800000  0.283000  0.924000  0.363000
4.900000  0.286000  0.952000  0.367000
5.000000  0.290000  0.981000  0.371000
5.100000  0.294000  1.010000  0.374000
5.200000  0.298000  1.040000  0.378000
5.300000  0.301000  1.070000  0.382000
5.400000  0.305000  1.100000  0.385000
5.500000  0.309000  1.131000  0.418000
5.600000  0.312000  1.162000  0.517000
5.700000  0.316000  1.193000  0.654000
5.800000  0.320000  1.225000  0.740000
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5.900000  0.323000  1.257000  0.810000
6.000000  0.327000  1.290000  0.870000
6.100000  0.331000  1.323000  0.994000
6.200000  0.334000  1.356000  1.172000
6.300000  0.338000  1.390000  1.384000
6.400000  0.342000  1.424000  1.623000
6.500000  0.345000  1.458000  1.887000
6.600000  0.349000  1.493000  2.173000
6.700000  0.353000  1.528000  2.478000
6.800000  0.356000  1.564000  2.802000
6.900000  0.360000  1.600000  3.143000
7.000000  0.364000  1.636000  3.501000
7.100000  0.367000  1.673000  3.874000
7.200000  0.371000  1.710000  4.262000
7.300000  0.375000  1.747000  4.665000
7.400000  0.378000  1.785000  5.081000
7.500000  0.382000  1.823000  5.510000
7.600000  0.386000  1.862000  5.953000
7.700000  0.389000  1.901000  6.408000
7.800000  0.393000  1.940000  6.875000
7.900000  0.396000  1.980000  7.355000
8.000000  0.400000  2.020000  7.845000
8.100000  0.404000  2.060000  999.0000
END FTABLE 23
FTABLE     68
 91    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.545225  0.000000  0.000000
0.333333  0.548860  0.182348  4.660386
0.666667  0.552495  0.365907  14.61826
1.000000  0.556131  0.550678  28.40055
1.333333  0.559766  0.736661  45.36100
1.666667  0.563401  0.923855  65.08691
2.000000  0.567036  1.112261  87.28068
2.333333  0.570672  1.301879  111.7134
2.666667  0.574307  1.492709  138.2019
3.000000  0.577942  1.684751  166.5954
3.333333  0.581577  1.878004  196.7676
3.666667  0.585213  2.072469  228.6106
4.000000  0.588848  2.268146  262.0316
4.333333  0.592483  2.465034  296.9500
4.666667  0.596118  2.663134  333.2949
5.000000  0.599754  2.862446  371.0038
5.333333  0.603389  3.062970  410.0211
5.666667  0.607024  3.264706  450.2973
6.000000  0.610660  3.467653  491.7881
6.333333  0.614295  3.671812  534.4536
6.666667  0.617930  3.877183  578.2577
7.000000  0.621566  4.083766  623.1679
7.333333  0.625201  4.291560  669.1546
7.666667  0.628836  4.500566  716.1908
8.000000  0.632472  4.710784  764.2521
8.333333  0.636107  4.922214  813.3161
8.666667  0.639742  5.134856  863.3622
9.000000  0.643378  5.348709  914.3717
9.333333  0.647013  5.563774  966.3273
9.666667  0.650648  5.780051  1019.213
10.00000  0.654284  5.997540  1073.015
10.33333  0.657919  6.216240  1127.718
10.66667  0.661554  6.436153  1183.312
11.00000  0.665190  6.657277  1239.784
11.33333  0.668825  6.879612  1297.124
11.66667  0.672461  7.103160  1355.321
12.00000  0.676096  7.327920  1414.368
12.33333  0.679731  7.553891  1474.256
12.66667  0.683367  7.781074  1534.976
13.00000  0.687002  8.009469  1596.523
13.33333  0.690638  8.239075  1658.888
13.66667  0.694273  8.469894  1722.067
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14.00000  0.697909  8.701924  1786.052
14.33333  0.701544  8.935166  1850.840
14.66667  0.705179  9.169620  1916.425
15.00000  0.708815  9.405286  1982.803
15.33333  0.712450  9.642163  2049.970
15.66667  0.716086  9.880253  2117.921
16.00000  0.719721  10.11955  2186.653
16.33333  0.723357  10.36007  2256.163
16.66667  0.726992  10.60179  2326.448
17.00000  0.730628  10.84473  2397.506
17.33333  0.734263  11.08888  2469.332
17.66667  0.737899  11.33424  2541.926
18.00000  0.741534  11.58081  2615.285
18.33333  0.745170  11.82859  2689.407
18.66667  0.748805  12.07759  2764.290
19.00000  0.752441  12.32780  2839.933
19.33333  0.756076  12.57922  2916.334
19.66667  0.759712  12.83185  2993.492
20.00000  0.763347  13.08569  3071.406
20.33333  0.766983  13.34075  3150.075
20.66667  0.770618  13.59701  3229.497
21.00000  0.774254  13.85449  3309.672
21.33333  0.777889  14.11318  3390.599
21.66667  0.781525  14.37308  3472.278
22.00000  0.785160  14.63420  3554.708
22.33333  0.788796  14.89652  3637.889
22.66667  0.792431  15.16006  3721.820
23.00000  0.796067  15.42481  3806.501
23.33333  0.799703  15.69077  3891.933
23.66667  0.803338  15.95795  3978.114
24.00000  0.806974  16.22633  4065.045
24.33333  0.810609  16.49593  4152.726
24.66667  0.814245  16.76674  4241.157
25.00000  0.817881  17.03876  4330.338
25.33333  0.821516  17.31199  4420.270
25.66667  0.825152  17.58644  4510.952
26.00000  0.828787  17.86209  4602.386
26.33333  0.832423  18.13896  4694.571
26.66667  0.836059  18.41704  4787.508
27.00000  0.839694  18.69633  4881.197
27.33333  0.843330  18.97684  4975.640
27.66667  0.846965  19.25855  5070.836
28.00000  0.850601  19.54148  5166.786
28.33333  0.854237  19.82562  5263.490
28.66667  0.857872  20.11097  5360.950
29.00000  0.861508  20.39754  5459.167
29.33333  0.865144  20.68531  5558.140
29.66667  0.868779  20.97430  5657.871
30.00000  0.872415  21.26450  5758.360
END FTABLE 68
FTABLE     40
 91    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.172635  0.000000  0.000000
0.088889  0.176472  0.015516  0.513243
0.177778  0.180309  0.031373  1.609011
0.266667  0.184146  0.047571  3.126586
0.355556  0.187983  0.064110  4.997880
0.444444  0.191820  0.080990  7.181295
0.533333  0.195657  0.098211  9.648294
0.622222  0.199494  0.115773  12.37809
0.711111  0.203331  0.133677  15.35496
0.800000  0.207168  0.151921  18.56674
0.888889  0.211005  0.170507  22.00385
0.977778  0.214842  0.189433  25.65865
1.066667  0.218679  0.208701  29.52501
1.155556  0.222516  0.228309  33.59800
1.244444  0.226353  0.248259  37.87362
1.333333  0.230190  0.268550  42.34865
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1.422222	0.234027	0.289182	47.02050
1.511111	0.237865	0.310155	51.88711
1.600000	0.241702	0.331469	56.94686
1.688889	0.245539	0.353124	62.19848
1.777778	0.249376	0.375120	67.64103
1.866667	0.253214	0.397458	73.27383
1.955556	0.257051	0.420136	79.09643
2.044444	0.260888	0.443156	85.10857
2.133333	0.264726	0.466516	91.31018
2.222222	0.268563	0.490218	97.70131
2.311111	0.272400	0.514261	104.2822
2.400000	0.276238	0.538645	111.0530
2.488889	0.280075	0.563370	118.0144
2.577778	0.283913	0.588436	125.1666
2.666667	0.287750	0.613843	132.5103
2.755556	0.291588	0.639591	140.0462
2.844444	0.295425	0.665681	147.7749
2.933333	0.299263	0.692111	155.6972
3.022222	0.303100	0.718883	163.8139
3.111111	0.306938	0.745996	172.1258
3.200000	0.310775	0.773450	180.6339
3.288889	0.314613	0.801245	189.3389
3.377778	0.318451	0.829381	198.2419
3.466667	0.322288	0.857858	207.3439
3.555556	0.326126	0.886677	216.6458
3.644444	0.329964	0.915836	226.1487
3.733333	0.333801	0.945337	235.8536
3.822222	0.337639	0.975179	245.7616
3.911111	0.341477	1.005362	255.8737
4.000000	0.345315	1.035886	266.1910
4.088889	0.349152	1.066751	276.7146
4.177778	0.352990	1.097957	287.4457
4.266667	0.356828	1.129505	298.3853
4.355556	0.360666	1.161393	309.5347
4.444444	0.364504	1.193623	320.8948
4.533333	0.368342	1.226194	332.4670
4.622222	0.372180	1.259106	344.2523
4.711111	0.376018	1.292359	356.2518
4.800000	0.379856	1.325954	368.4669
4.888889	0.383694	1.359889	380.8985
4.977778	0.387532	1.394166	393.5480
5.066667	0.391370	1.428784	406.4165
5.155556	0.395208	1.463743	419.5051
5.244444	0.399046	1.499043	432.8151
5.333333	0.402884	1.534684	446.3476
5.422222	0.406722	1.570667	460.1038
5.511111	0.410560	1.606991	474.0850
5.600000	0.414399	1.643655	488.2923
5.688889	0.418237	1.680661	502.7268
5.777778	0.422075	1.718009	517.3899
5.866667	0.425913	1.755697	532.2827
5.955556	0.429752	1.793726	547.4063
6.044444	0.433590	1.832097	562.7621
6.133333	0.437428	1.870809	578.3511
6.222222	0.441266	1.909862	594.1746
6.311111	0.445105	1.949257	610.2337
6.400000	0.448943	1.988992	626.5298
6.488889	0.452782	2.029069	643.0638
6.577778	0.456620	2.069486	659.8372
6.666667	0.460458	2.110246	676.8510
6.755556	0.464297	2.151346	694.1064
6.844444	0.468135	2.192787	711.6046
6.933333	0.471974	2.234570	729.3469
7.022222	0.475812	2.276694	747.3344
7.111111	0.479651	2.319159	765.5683
7.200000	0.483490	2.361965	784.0497
7.288889	0.487328	2.405112	802.7800
7.377778	0.491167	2.448601	821.7601
7.466667	0.495005	2.492431	840.9915
7.555556	0.498844	2.536602	860.4751

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7.644444  0.502683  2.581114  880.2123
7.733333  0.506521  2.625968  900.2041
7.822222  0.510360  2.671163  920.4518
7.911111  0.514199  2.716699  940.9565
8.000000  0.518038  2.762576  961.7194
END FTABLE 40
FTABLE     70
 91    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.567034  0.000000  0.000000
0.333333  0.570817  0.189642  12.41798
0.666667  0.574600  0.380545  38.95156
1.000000  0.578383  0.572708  75.67561
1.333333  0.582166  0.766133  120.8681
1.666667  0.585949  0.960819  173.4294
2.000000  0.589732  1.156766  232.5666
2.333333  0.593515  1.353974  297.6696
2.666667  0.597299  1.552443  368.2504
3.000000  0.601082  1.752173  443.9073
3.333333  0.604865  1.953164  524.3034
3.666667  0.608649  2.155417  609.1517
4.000000  0.612432  2.358930  698.2049
4.333333  0.616215  2.563705  791.2479
4.666667  0.619999  2.769740  888.0918
5.000000  0.623782  2.977037  988.5702
5.333333  0.627566  3.185595  1092.535
5.666667  0.631349  3.395414  1199.854
6.000000  0.635133  3.606495  1310.410
6.333333  0.638916  3.818836  1424.096
6.666667  0.642700  4.032439  1540.815
7.000000  0.646484  4.247303  1660.482
7.333333  0.650267  4.463428  1783.018
7.666667  0.654051  4.680814  1908.350
8.000000  0.657835  4.899462  2036.413
8.333333  0.661619  5.119371  2167.148
8.666667  0.665403  5.340541  2300.500
9.000000  0.669187  5.562973  2436.419
9.333333  0.672971  5.786666  2574.859
9.666667  0.676755  6.011620  2715.777
10.00000  0.680539  6.237836  2859.136
10.33333  0.684323  6.465312  3004.899
10.66667  0.688107  6.694051  3153.032
11.00000  0.691891  6.924050  3303.506
11.33333  0.695675  7.155311  3456.293
11.66667  0.699459  7.387834  3611.366
12.00000  0.703243  7.621617  3768.701
12.33333  0.707028  7.856663  3928.276
12.66667  0.710812  8.092969  4090.071
13.00000  0.714596  8.330537  4254.066
13.33333  0.718381  8.569367  4420.244
13.66667  0.722165  8.809458  4588.588
14.00000  0.725950  9.050810  4759.084
14.33333  0.729734  9.293424  4931.717
14.66667  0.733519  9.537299  5106.474
15.00000  0.737303  9.782436  5283.343
15.33333  0.741088  10.02883  5462.314
15.66667  0.744872  10.27649  5643.375
16.00000  0.748657  10.52542  5826.518
16.33333  0.752442  10.77560  6011.734
16.66667  0.756226  11.02704  6199.014
17.00000  0.760011  11.27975  6388.351
17.33333  0.763796  11.53372  6579.739
17.66667  0.767581  11.78895  6773.172
18.00000  0.771366  12.04544  6968.643
18.33333  0.775151  12.30319  7166.147
18.66667  0.778936  12.56221  7365.679
19.00000  0.782721  12.82248  7567.236
19.33333  0.786506  13.08402  7770.813
19.66667  0.790291  13.34682  7976.407
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```
20.00000  0.794076  13.61088  8184.015
20.33333  0.797861  13.87620  8393.634
20.66667  0.801646  14.14279  8605.260
21.00000  0.805431  14.41063  8818.894
21.33333  0.809217  14.67974  9034.531
21.66667  0.813002  14.95011  9252.171
22.00000  0.816787  15.22174  9471.813
22.33333  0.820572  15.49464  9693.455
22.66667  0.824358  15.76879  9917.097
23.00000  0.828143  16.04421  10142.74
23.33333  0.831929  16.32089  10370.38
23.66667  0.835714  16.59883  10600.01
24.00000  0.839500  16.87803  10831.65
24.33333  0.843285  17.15849  11065.28
24.66667  0.847071  17.44022  11300.91
25.00000  0.850857  17.72321  11538.54
25.33333  0.854642  18.00746  11778.17
25.66667  0.858428  18.29297  12019.81
26.00000  0.862214  18.57974  12263.44
26.33333  0.866000  18.86778  12509.07
26.66667  0.869785  19.15708  12756.71
27.00000  0.873571  19.44764  13006.35
27.33333  0.877357  19.73946  13258.00
27.66667  0.881143  20.03254  13511.66
28.00000  0.884929  20.32689  13767.33
28.33333  0.888715  20.62249  14025.00
28.66667  0.892501  20.91936  14284.69
29.00000  0.896287  21.21749  14546.40
29.33333  0.900073  21.51689  14810.12
29.66667  0.903859  21.81754  15075.86
30.00000  0.907646  22.11946  15343.63
END FTABLE 70
FTABLE     71
 91    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.567034  0.000000  0.000000
0.333333  0.570817  0.189642  12.41798
0.666667  0.574600  0.380545  38.95156
1.000000  0.578383  0.572708  75.67561
1.333333  0.582166  0.766133  120.8681
1.666667  0.585949  0.960819  173.4294
2.000000  0.589732  1.156766  232.5666
2.333333  0.593515  1.353974  297.6696
2.666667  0.597299  1.552443  368.2504
3.000000  0.601082  1.752173  443.9073
3.333333  0.604865  1.953164  524.3034
3.666667  0.608649  2.155417  609.1517
4.000000  0.612432  2.358930  698.2049
4.333333  0.616215  2.563705  791.2479
4.666667  0.619999  2.769740  888.0918
5.000000  0.623782  2.977037  988.5702
5.333333  0.627566  3.185595  1092.535
5.666667  0.631349  3.395414  1199.854
6.000000  0.635133  3.606495  1310.410
6.333333  0.638916  3.818836  1424.096
6.666667  0.642700  4.032439  1540.815
7.000000  0.646484  4.247303  1660.482
7.333333  0.650267  4.463428  1783.018
7.666667  0.654051  4.680814  1908.350
8.000000  0.657835  4.899462  2036.413
8.333333  0.661619  5.119371  2167.148
8.666667  0.665403  5.340541  2300.500
9.000000  0.669187  5.562973  2436.419
9.333333  0.672971  5.786666  2574.859
9.666667  0.676755  6.011620  2715.777
10.00000  0.680539  6.237836  2859.136
10.33333  0.684323  6.465312  3004.899
10.66667  0.688107  6.694051  3153.032
11.00000  0.691891  6.924050  3303.506
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11.33333  0.695675  7.155311  3456.293
11.66667  0.699459  7.387834  3611.366
12.00000  0.703243  7.621617  3768.701
12.33333  0.707028  7.856663  3928.276
12.66667  0.710812  8.092969  4090.071
13.00000  0.714596  8.330537  4254.066
13.33333  0.718381  8.569367  4420.244
13.66667  0.722165  8.809458  4588.588
14.00000  0.725950  9.050810  4759.084
14.33333  0.729734  9.293424  4931.717
14.66667  0.733519  9.537299  5106.474
15.00000  0.737303  9.782436  5283.343
15.33333  0.741088  10.02883  5462.314
15.66667  0.744872  10.27649  5643.375
16.00000  0.748657  10.52542  5826.518
16.33333  0.752442  10.77560  6011.734
16.66667  0.756226  11.02704  6199.014
17.00000  0.760011  11.27975  6388.351
17.33333  0.763796  11.53372  6579.739
17.66667  0.767581  11.78895  6773.172
18.00000  0.771366  12.04544  6968.643
18.33333  0.775151  12.30319  7166.147
18.66667  0.778936  12.56221  7365.679
19.00000  0.782721  12.82248  7567.236
19.33333  0.786506  13.08402  7770.813
19.66667  0.790291  13.34682  7976.407
20.00000  0.794076  13.61088  8184.015
20.33333  0.797861  13.87620  8393.634
20.66667  0.801646  14.14279  8605.260
21.00000  0.805431  14.41063  8818.894
21.33333  0.809217  14.67974  9034.531
21.66667  0.813002  14.95011  9252.171
22.00000  0.816787  15.22174  9471.813
22.33333  0.820572  15.49464  9693.455
22.66667  0.824358  15.76879  9917.097
23.00000  0.828143  16.04421  10142.74
23.33333  0.831929  16.32089  10370.38
23.66667  0.835714  16.59883  10600.01
24.00000  0.839500  16.87803  10831.65
24.33333  0.843285  17.15849  11065.28
24.66667  0.847071  17.44022  11300.91
25.00000  0.850857  17.72321  11538.54
25.33333  0.854642  18.00746  11778.17
25.66667  0.858428  18.29297  12019.81
26.00000  0.862214  18.57974  12263.44
26.33333  0.866000  18.86778  12509.07
26.66667  0.869785  19.15708  12756.71
27.00000  0.873571  19.44764  13006.35
27.33333  0.877357  19.73946  13258.00
27.66667  0.881143  20.03254  13511.66
28.00000  0.884929  20.32689  13767.33
28.33333  0.888715  20.62249  14025.00
28.66667  0.892501  20.91936  14284.69
29.00000  0.896287  21.21749  14546.40
29.33333  0.900073  21.51689  14810.12
29.66667  0.903859  21.81754  15075.86
30.00000  0.907646  22.11946  15343.63
END FTABLE 71
FTABLE     46
 91    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.044169  0.000000  0.000000
0.088889  0.045152  0.003970  0.766700
0.177778  0.046134  0.008027  2.403597
0.266667  0.047117  0.012171  4.670604
0.355556  0.048100  0.016403  7.466009
0.444444  0.049083  0.020723  10.72767
0.533333  0.050066  0.025129  14.41296
0.622222  0.051048  0.029623  18.49082
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0.711111	0.052031	0.034204	22.93778
0.800000	0.053014	0.038873	27.73565
0.888889	0.053998	0.043629	32.87012
0.977778	0.054981	0.048473	38.32979
1.066667	0.055964	0.053404	44.10550
1.155556	0.056947	0.058422	50.18987
1.244444	0.057930	0.063527	56.57694
1.333333	0.058914	0.068721	63.26190
1.422222	0.059897	0.074001	70.24088
1.511111	0.060880	0.079369	77.51080
1.600000	0.061864	0.084824	85.06922
1.688889	0.062847	0.090367	92.91428
1.777778	0.063831	0.095997	101.0446
1.866667	0.064815	0.101715	109.4590
1.955556	0.065798	0.107520	118.1570
2.044444	0.066782	0.113412	127.1382
2.133333	0.067766	0.119392	136.4024
2.222222	0.068749	0.125459	145.9497
2.311111	0.069733	0.131614	155.7804
2.400000	0.070717	0.137856	165.8950
2.488889	0.071701	0.144186	176.2940
2.577778	0.072685	0.150603	186.9783
2.666667	0.073669	0.157108	197.9486
2.755556	0.074653	0.163700	209.2060
2.844444	0.075637	0.170380	220.7514
2.933333	0.076622	0.177147	232.5860
3.022222	0.077606	0.184001	244.7110
3.111111	0.078590	0.190943	257.1276
3.200000	0.079574	0.197973	269.8372
3.288889	0.080559	0.205090	282.8411
3.377778	0.081543	0.212294	296.1408
3.466667	0.082528	0.219586	309.7376
3.555556	0.083512	0.226966	323.6332
3.644444	0.084497	0.234433	337.8289
3.733333	0.085481	0.241988	352.3264
3.822222	0.086466	0.249630	367.1273
3.911111	0.087451	0.257359	382.2331
4.000000	0.088436	0.265177	397.6455
4.088889	0.089420	0.273081	413.3660
4.177778	0.090405	0.281074	429.3965
4.266667	0.091390	0.289153	445.7385
4.355556	0.092375	0.297321	462.3938
4.444444	0.093360	0.305576	479.3640
4.533333	0.094345	0.313918	496.6509
4.622222	0.095330	0.322348	514.2561
4.711111	0.096315	0.330866	532.1815
4.800000	0.097301	0.339471	550.4288
4.888889	0.098286	0.348164	568.9996
4.977778	0.099271	0.356944	587.8959
5.066667	0.100257	0.365812	607.1192
5.155556	0.101242	0.374767	626.6715
5.244444	0.102227	0.383810	646.5544
5.333333	0.103213	0.392941	666.7697
5.422222	0.104198	0.402159	687.3193
5.511111	0.105184	0.411465	708.2049
5.600000	0.106170	0.420859	729.4282
5.688889	0.107155	0.430340	750.9911
5.777778	0.108141	0.439909	772.8953
5.866667	0.109127	0.449565	795.1426
5.955556	0.110113	0.459309	817.7349
6.044444	0.111099	0.469141	840.6738
6.133333	0.112084	0.479060	863.9612
6.222222	0.113070	0.489067	887.5989
6.311111	0.114056	0.499161	911.5886
6.400000	0.115043	0.509343	935.9322
6.488889	0.116029	0.519613	960.6314
6.577778	0.117015	0.529971	985.6880
6.666667	0.118001	0.540416	1011.104
6.755556	0.118987	0.550949	1036.881
6.844444	0.119974	0.561569	1063.020

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6.933333  0.120960  0.572277  1089.524
7.022222  0.121946  0.583073  1116.394
7.111111  0.122933  0.593957  1143.633
7.200000  0.123919  0.604928  1171.241
7.288889  0.124906  0.615987  1199.221
7.377778  0.125892  0.627133  1227.574
7.466667  0.126879  0.638368  1256.303
7.555556  0.127866  0.649690  1285.408
7.644444  0.128853  0.661099  1314.892
7.733333  0.129839  0.672597  1344.757
7.822222  0.130826  0.684182  1375.003
7.911111  0.131813  0.695855  1405.634
8.000000  0.132800  0.707615  1436.650
END FTABLE 46
FTABLE     24
 82    4
    Depth      Area    Volume  Outflow1 Velocity  Travel Time***
     (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.000000  0.000000  0.000000
0.010000  0.100000  0.001000  0.000000
0.100000  0.104000  0.010000  0.013000
0.200000  0.108000  0.021000  0.028000
0.300000  0.112000  0.032000  0.037000
0.400000  0.116000  0.044000  0.044000
0.500000  0.120000  0.056000  0.050000
0.600000  0.124000  0.068000  0.055000
0.700000  0.128000  0.081000  0.060000
0.800000  0.132000  0.094000  0.065000
0.900000  0.135000  0.107000  0.069000
1.000000  0.139000  0.121000  0.073000
1.100000  0.143000  0.135000  0.077000
1.200000  0.147000  0.150000  0.080000
1.300000  0.151000  0.165000  0.084000
1.400000  0.155000  0.180000  0.087000
1.500000  0.159000  0.196000  0.090000
1.600000  0.162000  0.212000  0.093000
1.700000  0.166000  0.228000  0.096000
1.800000  0.170000  0.245000  0.099000
1.900000  0.174000  0.262000  0.102000
2.000000  0.178000  0.280000  0.131000
2.100000  0.182000  0.298000  0.182000
2.200000  0.185000  0.316000  0.247000
2.300000  0.189000  0.335000  0.306000
2.400000  0.193000  0.354000  0.347000
2.500000  0.197000  0.373000  0.382000
2.600000  0.201000  0.393000  0.413000
2.700000  0.204000  0.413000  0.442000
2.800000  0.208000  0.434000  0.468000
2.900000  0.212000  0.455000  0.493000
3.000000  0.216000  0.476000  0.517000
3.100000  0.220000  0.498000  0.539000
3.200000  0.223000  0.520000  0.560000
3.300000  0.227000  0.542000  0.581000
3.400000  0.231000  0.565000  0.601000
3.500000  0.235000  0.588000  0.620000
3.600000  0.238000  0.612000  0.726000
3.700000  0.242000  0.636000  0.904000
3.800000  0.246000  0.660000  1.130000
3.900000  0.250000  0.685000  1.393000
4.000000  0.253000  0.710000  1.688000
4.100000  0.257000  0.735000  2.013000
4.200000  0.261000  0.761000  2.364000
4.300000  0.265000  0.787000  2.740000
4.400000  0.268000  0.814000  3.139000
4.500000  0.272000  0.841000  3.559000
4.600000  0.276000  0.868000  4.000000
4.700000  0.280000  0.896000  4.461000
4.800000  0.283000  0.924000  4.940000
4.900000  0.287000  0.952000  5.438000
5.000000  0.291000  0.981000  5.952000
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5.100000  0.294000  1.010000  6.484000
5.200000  0.298000  1.040000  7.032000
5.300000  0.302000  1.070000  7.595000
5.400000  0.306000  1.100000  8.174000
5.500000  0.309000  1.131000  8.768000
5.600000  0.313000  1.162000  9.376000
5.700000  0.317000  1.193000  9.999000
5.800000  0.320000  1.225000  11.88900
5.900000  0.324000  1.257000  14.60600
6.000000  0.328000  1.290000  17.99000
6.100000  0.331000  1.323000  21.91100
6.200000  0.335000  1.356000  26.29600
6.300000  0.339000  1.390000  31.09500
6.400000  0.342000  1.424000  36.27100
6.500000  0.346000  1.458000  41.79700
6.600000  0.350000  1.493000  47.64900
6.700000  0.353000  1.528000  53.81000
6.800000  0.357000  1.564000  60.26300
6.900000  0.361000  1.600000  66.99500
7.000000  0.364000  1.636000  73.99500
7.100000  0.368000  1.673000  81.25100
7.200000  0.372000  1.710000  88.75500
7.300000  0.375000  1.747000  96.49900
7.400000  0.379000  1.785000  104.4740
7.500000  0.382000  1.823000  112.6750
7.600000  0.386000  1.862000  121.0940
7.700000  0.390000  1.901000  129.7270
7.800000  0.393000  1.940000  138.5670
7.900000  0.397000  1.980000  147.6100
8.000000  0.401000  2.020000  999.0000
END FTABLE 24
FTABLE     25
  9    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.000000  0.000000  0.000000
0.500000  1.600000  0.400000  23.00000
1.500000  1.700000  1.090000  54.00000
2.500000  1.800000  2.320000  96.00000
3.500000  2.000000  4.540000  144.0000
5.500000  2.200000  7.830000  195.0000
7.500000  3.600000  12.26000  258.0000
9.500000  4.200000  18.19000  324.0000
10.00000  4.500000  20.00000  999.0000
END FTABLE 25
FTABLE     26
 10    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.000000  0.000000  0.000000
0.500000  1.600000  2.140000  251.0000
1.500000  1.700000  7.080000  520.0000
2.500000  1.800000  10.91000  640.0000
3.500000  2.000000  15.21000  768.0000
5.500000  2.200000  19.84000  880.0000
7.500000  3.600000  24.92000  960.0000
9.500000  4.200000  30.37000  1040.000
11.50000  5.900000  61.40000  1392.000
12.00000  6.500000  70.00000  9999.000
END FTABLE 26
FTABLE     27
 98    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.000000  0.000000  0.000000
0.010000  1.400000  0.014000  0.009000
0.200000  1.344000  0.105000  0.844000
0.400000  1.386000  0.272000  2.387000
0.600000  1.429000  0.448000  4.385000
0.800000  1.473000  0.633000  6.751000
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1.000000	1.518000	0.828000	9.435000
1.200000	1.564000	1.034000	12.40300
1.400000	1.610000	1.248000	15.62900
1.600000	1.658000	1.473000	19.09500
1.800000	1.706000	1.707000	22.78500
2.000000	1.756000	1.951000	26.68600
2.200000	1.806000	2.204000	30.78800
2.400000	1.858000	2.468000	35.08000
2.600000	1.910000	2.741000	39.62800
2.800000	1.963000	3.023000	42.46200
3.000000	2.018000	3.316000	45.11800
3.200000	2.073000	3.618000	47.62700
3.400000	2.129000	3.930000	50.00900
3.600000	2.186000	4.251000	52.28400
3.800000	2.244000	4.583000	54.46300
4.000000	2.303000	4.924000	56.55900
4.200000	2.363000	5.274000	58.57900
4.400000	2.424000	5.635000	60.53200
4.600000	2.485000	6.005000	62.42400
4.800000	2.548000	6.385000	64.26100
5.000000	2.612000	6.774000	66.04600
5.200000	2.676000	7.174000	67.78500
5.400000	2.742000	7.583000	69.47900
5.600000	2.808000	8.001000	71.13400
5.800000	2.876000	8.430000	72.75100
6.000000	2.944000	8.868000	74.33200
6.200000	3.014000	9.316000	75.88100
6.400000	3.084000	9.773000	77.39900
6.600000	3.155000	10.24000	78.88800
6.800000	3.227000	10.71700	80.34900
7.000000	3.300000	11.20400	81.78400
7.200000	3.375000	11.70000	83.19400
7.400000	3.450000	12.20600	84.58000
7.600000	3.525000	12.72200	85.94500
7.800000	3.602000	13.24800	87.28800
8.000000	3.680000	13.78300	88.61000
8.200000	3.759000	14.32800	89.91300
8.400000	3.839000	14.88200	91.19800
8.600000	3.919000	15.44700	92.46500
8.800000	4.001000	16.02100	93.71400
9.000000	4.084000	16.60500	94.94700
9.200000	4.167000	17.19800	96.16500
9.400000	4.252000	17.80100	97.36700
9.600000	4.337000	18.41400	102.7660
9.800000	4.423000	19.03700	121.6140
10.00000	4.511000	19.66900	147.9800
10.20000	4.599000	20.31100	180.0440
10.40000	4.688000	20.96300	216.8960
10.60000	4.778000	21.62400	257.9600
10.80000	4.869000	22.29500	302.8310
11.00000	4.961000	22.97600	351.2000
11.20000	5.054000	23.66700	402.8250
11.40000	5.148000	24.36700	457.5060
11.60000	5.243000	25.07700	515.0770
11.80000	5.339000	25.79700	575.3970
12.00000	5.436000	26.52600	638.3440
12.20000	5.533000	27.26500	703.8090
12.40000	5.632000	28.01400	771.6970
12.60000	5.731000	28.77300	841.9230
12.80000	5.832000	29.54100	914.4110
13.00000	5.933000	30.31900	989.0900
13.20000	6.036000	31.10700	1065.897
13.40000	6.139000	31.90400	1144.774
13.60000	6.244000	32.71100	1225.666
13.80000	6.349000	33.52800	1308.525
14.00000	6.455000	34.35500	1393.302
14.20000	6.562000	35.19100	1479.957
14.40000	6.670000	36.03700	1568.447
14.60000	6.779000	36.89200	1658.736
14.80000	6.889000	37.75800	1750.788

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15.00000  7.000000  38.63300  1844.568
15.20000  7.112000  39.51800  1940.046
15.40000  7.225000  40.41200  2037.191
15.60000  7.339000  41.31600  2135.975
15.80000  7.453000  42.23000  2236.371
16.00000  7.569000  43.15400  2338.352
16.20000  7.685000  44.08700  2441.896
16.40000  7.803000  45.03000  2546.977
16.60000  7.921000  45.98300  2653.573
16.80000  8.041000  46.94600  2761.664
17.00000  8.161000  47.91800  2871.229
17.20000  8.283000  48.90000  2982.247
17.40000  8.405000  49.89100  3094.699
17.60000  8.528000  50.89300  3208.569
17.80000  8.652000  51.90400  3323.837
18.00000  8.777000  52.92400  3440.487
18.20000  8.903000  53.95500  3558.503
18.40000  9.030000  54.99500  3677.869
18.60000  9.158000  56.04500  3798.569
18.80000  9.287000  57.10400  3920.590
19.00000  9.417000  58.17400  4043.916
19.20000  9.548000  59.25300  4168.534
END FTABLE 27
FTABLE     28
  9    4
    Depth      Area    Volume  Outflow1 Velocity  Travel Time***
     (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.000000  0.000000  0.000000
0.500000  1.600000  0.050000  2.100000
1.500000  1.700000  0.180000  5.080000
2.500000  1.800000  0.420000  8.720000
3.500000  2.000000  0.770000  12.92000
5.500000  2.200000  1.230000  29.14000
7.500000  3.600000  1.800000  36.96000
9.500000  4.200000  2.490000  43.21000
10.00000  4.500000  2.700000  999.0000
END FTABLE 28
FTABLE     29
 11    4
    Depth      Area    Volume  Outflow1 Velocity  Travel Time***
     (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.000000  0.000000  0.000000
0.500000  1.600000  0.030000  2.850000
1.500000  1.700000  0.080000  4.270000
2.500000  1.800000  0.170000  5.710000
3.500000  2.000000  0.290000  6.840000
5.500000  2.200000  0.450000  7.760000
7.500000  3.600000  0.650000  13.30000
9.500000  4.200000  0.900000  15.99000
11.50000  5.900000  1.220000  18.17000
16.50000  7.600000  1.600000  20.06000
17.50000  8.000000  1.800000  999.0000
END FTABLE 29
FTABLE     30
 82    4
    Depth      Area    Volume  Outflow1 Velocity  Travel Time***
     (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.000000  0.000000  0.000000
0.010000  0.150000  0.002000  0.001000
0.200000  0.160000  0.030000  0.074000
0.300000  0.164000  0.047000  0.126000
0.400000  0.169000  0.064000  0.158000
0.500000  0.173000  0.081000  0.184000
0.600000  0.177000  0.099000  0.207000
0.700000  0.182000  0.117000  0.228000
0.800000  0.186000  0.136000  0.247000
0.900000  0.191000  0.155000  0.265000
1.000000  0.195000  0.174000  0.281000
1.100000  0.200000  0.194000  0.297000
1.200000  0.204000  0.214000  0.312000
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1.300000  0.209000  0.235000  0.326000
1.400000  0.213000  0.256000  0.340000
1.500000  0.218000  0.278000  0.353000
1.600000  0.222000  0.300000  0.365000
1.700000  0.226000  0.322000  0.378000
1.800000  0.231000  0.345000  0.389000
1.900000  0.235000  0.369000  0.401000
2.000000  0.240000  0.393000  0.412000
2.100000  0.244000  0.417000  0.423000
2.200000  0.249000  0.441000  0.433000
2.300000  0.253000  0.467000  0.444000
2.400000  0.257000  0.492000  0.454000
2.500000  0.262000  0.518000  0.464000
2.600000  0.266000  0.544000  0.473000
2.700000  0.271000  0.571000  0.483000
2.800000  0.275000  0.598000  0.492000
2.900000  0.279000  0.626000  0.501000
3.000000  0.284000  0.654000  0.510000
3.100000  0.288000  0.683000  0.519000
3.200000  0.293000  0.712000  0.528000
3.300000  0.297000  0.741000  0.536000
3.400000  0.301000  0.771000  0.545000
3.500000  0.306000  0.801000  0.553000
3.600000  0.310000  0.832000  0.561000
3.700000  0.314000  0.863000  0.569000
3.800000  0.319000  0.895000  0.577000
3.900000  0.323000  0.927000  0.585000
4.000000  0.327000  0.959000  0.592000
4.100000  0.332000  0.992000  0.600000
4.200000  0.336000  1.025000  0.607000
4.300000  0.340000  1.059000  0.615000
4.400000  0.345000  1.093000  0.622000
4.500000  0.349000  1.128000  0.629000
4.600000  0.353000  1.163000  0.637000
4.700000  0.358000  1.198000  0.644000
4.800000  0.362000  1.234000  0.651000
4.900000  0.366000  1.270000  0.658000
5.000000  0.371000  1.307000  0.664000
5.100000  0.375000  1.344000  0.671000
5.200000  0.379000  1.382000  0.678000
5.300000  0.384000  1.420000  0.685000
5.400000  0.388000  1.459000  0.691000
5.500000  0.392000  1.498000  0.698000
5.600000  0.397000  1.537000  0.704000
5.700000  0.401000  1.577000  0.711000
5.800000  0.405000  1.617000  0.717000
5.900000  0.409000  1.657000  0.723000
6.000000  0.414000  1.699000  0.729000
6.100000  0.418000  1.740000  0.736000
6.200000  0.422000  1.782000  0.742000
6.300000  0.427000  1.824000  0.748000
6.400000  0.431000  1.867000  0.754000
6.500000  0.435000  1.910000  0.760000
6.600000  0.439000  1.954000  0.766000
6.700000  0.444000  1.998000  0.772000
6.800000  0.448000  2.043000  0.777000
6.900000  0.452000  2.088000  0.783000
7.000000  0.456000  2.133000  0.789000
7.100000  0.461000  2.179000  0.795000
7.200000  0.465000  2.225000  0.800000
7.300000  0.469000  2.272000  0.806000
7.400000  0.473000  2.319000  0.812000
7.500000  0.477000  2.367000  0.817000
7.600000  0.482000  2.415000  0.823000
7.700000  0.486000  2.463000  0.828000
7.800000  0.490000  2.512000  0.834000
7.900000  0.494000  2.561000  0.839000
8.000000  0.499000  2.611000  0.844000
8.100000  0.503000  2.661000  999.0000
END FTABLE 30
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FTABLE 41
93 4

Depth (ft)	Area (acres)	Volume (acre-ft)	Outflow1 (cfs)	Velocity (ft/sec)	Travel Time*** (Minutes)***
0.000000	0.000000	0.000000	0.000000		
0.100000	0.310000	0.031000	0.088000		
0.200000	0.294000	0.439000	0.248000		
0.400000	0.304000	0.462000	0.702000		
0.600000	0.313000	0.488000	1.290000		
0.800000	0.323000	0.518000	1.986000		
1.000000	0.333000	0.551000	2.775000		
1.200000	0.343000	0.588000	3.648000		
1.400000	0.354000	0.629000	4.597000		
1.600000	0.364000	0.673000	5.616000		
1.800000	0.375000	0.721000	6.701000		
2.000000	0.386000	0.772000	7.849000		
2.200000	0.397000	0.828000	9.055000		
2.400000	0.408000	0.886000	10.31800		
2.600000	0.419000	0.949000	11.63400		
2.800000	0.431000	1.015000	13.00200		
3.000000	0.442000	1.085000	14.41900		
3.200000	0.454000	1.158000	15.69500		
3.400000	0.466000	1.235000	16.59200		
3.600000	0.478000	1.316000	17.44400		
3.800000	0.491000	1.400000	18.25600		
4.000000	0.503000	1.488000	19.03300		
4.200000	0.516000	1.580000	19.78000		
4.400000	0.529000	1.675000	20.49900		
4.600000	0.542000	1.774000	21.19400		
4.800000	0.555000	1.877000	21.86700		
5.000000	0.569000	1.983000	22.52000		
5.200000	0.582000	2.093000	23.15400		
5.400000	0.596000	2.206000	24.08800		
5.600000	0.610000	2.323000	26.01500		
5.800000	0.624000	2.444000	28.49300		
6.000000	0.638000	2.568000	31.38600		
6.200000	0.653000	2.696000	34.62600		
6.400000	0.667000	2.828000	38.17100		
6.600000	0.682000	2.963000	41.99200		
6.800000	0.697000	3.102000	46.06500		
7.000000	0.712000	3.245000	50.37300		
7.200000	0.727000	3.391000	54.90300		
7.400000	0.743000	3.541000	59.64000		
7.600000	0.758000	3.694000	64.57700		
7.800000	0.774000	3.852000	69.70300		
8.000000	0.790000	4.012000	75.01100		
8.200000	0.806000	4.177000	80.49400		
8.400000	0.822000	4.345000	86.14600		
8.600000	0.839000	4.517000	91.96200		
8.800000	0.856000	4.692000	97.93700		
9.000000	0.872000	4.871000	103.5650		
9.200000	0.889000	5.054000	107.5340		
9.400000	0.907000	5.240000	111.3360		
9.600000	0.924000	5.430000	118.5670		
9.800000	0.941000	5.624000	128.6280		
10.00000	0.959000	5.821000	140.5020		
10.20000	0.977000	6.022000	153.8290		
10.40000	0.995000	6.226000	168.4060		
10.60000	1.013000	6.434000	184.0980		
10.80000	1.031000	6.646000	200.8070		
11.00000	1.050000	6.861000	218.4560		
11.20000	1.069000	7.080000	236.9850		
11.40000	1.088000	7.303000	256.3440		
11.60000	1.107000	7.530000	276.4920		
11.80000	1.126000	7.760000	297.3930		
12.00000	1.145000	7.993000	319.0160		
12.20000	1.165000	8.230000	341.3330		
12.40000	1.184000	8.471000	364.3190		
12.60000	1.204000	8.716000	387.9540		
12.80000	1.224000	8.964000	412.2170		

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13.00000  1.245000  9.216000  437.0910
13.20000  1.265000  9.471000  462.5590
13.40000  1.286000  9.730000  488.6050
13.60000  1.306000  9.993000  515.2170
13.80000  1.327000  10.26000  542.3800
14.00000  1.348000  10.53000  570.0840
14.20000  1.370000  10.80300  598.3160
14.40000  1.391000  11.08100  627.0660
14.60000  1.413000  11.36200  656.3240
14.80000  1.435000  11.64600  686.0820
15.00000  1.457000  11.93400  716.3290
15.20000  1.479000  12.22600  747.0580
15.40000  1.501000  12.52200  778.2610
15.60000  1.523000  12.82100  809.9290
15.80000  1.546000  13.12400  842.0570
16.00000  1.569000  13.43000  874.6370
16.20000  1.592000  13.74000  907.6630
16.40000  1.615000  14.05400  941.1280
16.60000  1.638000  14.37100  975.0260
16.80000  1.662000  14.69200  1009.352
17.00000  1.685000  15.01700  1044.099
17.20000  1.709000  15.34500  1079.264
17.40000  1.733000  15.67700  1114.840
17.60000  1.757000  16.01300  1150.824
17.80000  1.782000  16.35200  1187.209
18.00000  1.806000  16.69500  1223.991
18.20000  1.831000  17.04100  9999.000
END FTABLE 41
FTABLE     31
 93    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.000000  0.000000  0.000000
0.010000  0.340000  0.003000  0.001000
0.100000  0.346000  0.034000  0.044000
0.200000  0.353000  0.069000  0.124000
0.300000  0.360000  0.105000  0.228000
0.400000  0.367000  0.141000  0.351000
0.500000  0.375000  0.178000  0.451000
0.600000  0.382000  0.216000  0.523000
0.700000  0.389000  0.254000  0.586000
0.800000  0.396000  0.293000  0.643000
0.900000  0.404000  0.333000  0.695000
1.000000  0.411000  0.374000  0.744000
1.100000  0.418000  0.415000  0.789000
1.200000  0.425000  0.457000  0.832000
1.300000  0.433000  0.500000  0.873000
1.400000  0.440000  0.544000  0.913000
1.500000  0.447000  0.588000  0.950000
1.600000  0.454000  0.633000  0.986000
1.700000  0.461000  0.679000  1.021000
1.800000  0.469000  0.725000  1.055000
1.900000  0.476000  0.772000  1.087000
2.000000  0.483000  0.820000  1.119000
2.100000  0.490000  0.869000  1.150000
2.200000  0.498000  0.918000  1.180000
2.300000  0.505000  0.968000  1.209000
2.400000  0.512000  1.019000  1.238000
2.500000  0.519000  1.070000  1.265000
2.600000  0.527000  1.123000  1.293000
2.700000  0.534000  1.176000  1.320000
2.800000  0.541000  1.229000  1.346000
2.900000  0.548000  1.284000  1.371000
3.000000  0.555000  1.339000  1.397000
3.100000  0.563000  1.395000  1.421000
3.200000  0.570000  1.451000  1.446000
3.300000  0.577000  1.509000  1.470000
3.400000  0.584000  1.567000  1.493000
3.500000  0.592000  1.625000  1.517000
3.600000  0.599000  1.685000  1.539000
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3.700000  0.606000  1.745000  1.562000
3.800000  0.613000  1.806000  1.584000
3.900000  0.620000  1.868000  1.606000
4.000000  0.628000  1.930000  1.628000
4.100000  0.635000  1.993000  1.649000
4.200000  0.642000  2.057000  1.670000
4.300000  0.649000  2.122000  1.691000
4.400000  0.657000  2.187000  1.711000
4.500000  0.664000  2.253000  1.732000
4.600000  0.671000  2.320000  1.752000
4.700000  0.678000  2.387000  1.772000
4.800000  0.686000  2.455000  1.791000
4.900000  0.693000  2.524000  1.811000
5.000000  0.700000  2.594000  1.830000
5.100000  0.707000  2.664000  1.849000
5.200000  0.714000  2.735000  1.868000
5.300000  0.722000  2.807000  1.886000
5.400000  0.729000  2.880000  1.905000
5.500000  0.736000  2.953000  1.923000
5.600000  0.743000  3.027000  1.941000
5.700000  0.751000  3.102000  1.959000
5.800000  0.758000  3.177000  1.977000
5.900000  0.765000  3.253000  1.994000
6.000000  0.772000  3.330000  2.012000
6.100000  0.780000  3.408000  2.029000
6.200000  0.787000  3.486000  2.046000
6.300000  0.794000  3.565000  2.063000
6.400000  0.801000  3.645000  2.080000
6.500000  0.808000  3.725000  2.097000
6.600000  0.816000  3.807000  2.113000
6.700000  0.823000  3.889000  2.130000
6.800000  0.830000  3.971000  2.146000
6.900000  0.837000  4.055000  2.162000
7.000000  0.845000  4.139000  2.179000
7.100000  0.852000  4.224000  2.194000
7.200000  0.859000  4.309000  2.210000
7.300000  0.866000  4.396000  2.226000
7.400000  0.873000  4.483000  2.242000
7.500000  0.881000  4.570000  2.257000
7.600000  0.888000  4.659000  2.273000
7.700000  0.895000  4.748000  2.288000
7.800000  0.902000  4.838000  2.303000
7.900000  0.910000  4.929000  2.318000
8.000000  0.917000  5.020000  2.333000
8.200000  0.931000  5.205000  2.363000
8.400000  0.946000  5.393000  2.393000
8.600000  0.960000  5.584000  2.422000
8.800000  0.975000  5.777000  2.450000
9.000000  0.989000  5.974000  2.479000
9.200000  1.004000  6.173000  2.507000
9.400000  1.018000  6.376000  2.534000
9.600000  1.033000  6.581000  2.562000
9.800000  1.047000  6.789000  2.589000
10.00000  1.061000  7.000000  2.616000
10.20000  1.076000  7.214000  999.0000
END FTABLE 31
FTABLE     57
 97    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.000000  0.000000  0.000000
0.010000  0.600000  0.006000  0.007000
0.100000  0.611000  0.060000  0.211000
0.200000  0.622000  0.122000  0.596000
0.300000  0.633000  0.184000  1.094000
0.400000  0.645000  0.248000  1.685000
0.500000  0.656000  0.313000  2.355000
0.600000  0.667000  0.379000  3.095000
0.700000  0.679000  0.446000  3.901000
0.800000  0.690000  0.514000  4.766000
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0.900000	0.702000	0.584000	5.686000
1.000000	0.714000	0.655000	6.660000
1.100000	0.726000	0.727000	7.459000
1.200000	0.738000	0.800000	8.057000
1.300000	0.751000	0.874000	8.613000
1.400000	0.763000	0.950000	9.136000
1.500000	0.775000	1.026000	9.630000
1.600000	0.788000	1.104000	10.10000
1.700000	0.801000	1.184000	10.54900
1.800000	0.814000	1.265000	10.98000
1.900000	0.827000	1.346000	11.39400
2.000000	0.840000	1.430000	11.79400
2.100000	0.853000	1.514000	12.18100
2.200000	0.867000	1.600000	12.55600
2.300000	0.880000	1.688000	12.92000
2.400000	0.894000	1.776000	13.27400
2.500000	0.908000	1.866000	13.61900
2.600000	0.922000	1.958000	13.95500
2.700000	0.936000	2.051000	14.28400
2.800000	0.950000	2.145000	14.60500
2.900000	0.964000	2.240000	14.91900
3.000000	0.978000	2.338000	15.22600
3.100000	0.993000	2.436000	15.89600
3.200000	1.008000	2.536000	16.86600
3.300000	1.022000	2.638000	18.02900
3.400000	1.037000	2.741000	19.34800
3.500000	1.052000	2.845000	20.80000
3.600000	1.067000	2.951000	22.37200
3.700000	1.083000	3.059000	24.05200
3.800000	1.098000	3.168000	25.83300
3.900000	1.114000	3.278000	27.70800
4.000000	1.129000	3.390000	29.67100
4.100000	1.145000	3.504000	31.71800
4.200000	1.161000	3.620000	33.84400
4.300000	1.177000	3.736000	36.04800
4.400000	1.193000	3.855000	37.99100
4.500000	1.209000	3.975000	39.45800
4.600000	1.226000	4.097000	40.85300
4.700000	1.242000	4.220000	42.18500
4.800000	1.259000	4.345000	43.46300
4.900000	1.276000	4.472000	44.69400
5.000000	1.293000	4.601000	45.88300
5.100000	1.310000	4.731000	47.71900
5.200000	1.327000	4.863000	50.08900
5.300000	1.344000	4.996000	52.79600
5.400000	1.362000	5.132000	55.77400
5.500000	1.379000	5.269000	58.98400
5.600000	1.397000	5.407000	62.40000
5.700000	1.414000	5.548000	66.00400
5.800000	1.432000	5.690000	69.78100
5.900000	1.450000	5.835000	73.72100
6.000000	1.469000	5.980000	77.81400
6.100000	1.487000	6.128000	82.05200
6.200000	1.505000	6.278000	86.42900
6.300000	1.524000	6.429000	90.93900
6.400000	1.542000	6.583000	95.57700
6.500000	1.561000	6.738000	100.3380
6.600000	1.580000	6.895000	105.2190
6.700000	1.599000	7.054000	110.2160
6.800000	1.618000	7.215000	115.3260
6.900000	1.638000	7.377000	120.5450
7.000000	1.657000	7.542000	125.8710
7.200000	1.696000	7.877000	136.8350
7.400000	1.736000	8.221000	148.1980
7.600000	1.776000	8.572000	159.9450
7.800000	1.817000	8.931000	172.0620
8.000000	1.858000	9.298000	184.5360
8.200000	1.900000	9.674000	197.3570
8.400000	1.942000	10.05800	210.5130
8.600000	1.984000	10.45000	225.1410

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8.800000  2.028000  10.85100  234.3000
9.000000  2.071000  11.26000  243.0610
9.200000  2.115000  11.67900  253.5810
9.400000  2.160000  12.10600  270.5260
9.600000  2.205000  12.54200  290.9620
9.800000  2.251000  12.98700  314.0080
10.00000  2.297000  13.44200  339.2300
10.20000  2.344000  13.90500  366.3600
10.40000  2.391000  14.37800  395.2130
10.60000  2.439000  14.86000  425.6470
10.80000  2.487000  15.35200  457.5550
11.00000  2.536000  15.85400  490.8470
11.20000  2.585000  16.36500  525.4510
11.40000  2.634000  16.88600  561.3040
11.60000  2.685000  17.41700  598.3530
11.80000  2.735000  17.95800  636.5520
12.00000  2.786000  18.51000  9999.000
END FTABLE 57
FTABLE     58
 91    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.022957  0.000000  0.000000
0.066667  0.023110  0.001536  0.525649
0.133333  0.023264  0.003081  1.661848
0.200000  0.023417  0.004637  3.253183
0.266667  0.023571  0.006204  5.233866
0.333333  0.023724  0.007780  7.562607
0.400000  0.023878  0.009367  10.20988
0.466667  0.024031  0.010964  13.15301
0.533333  0.024185  0.012571  16.37383
0.600000  0.024338  0.014188  19.85729
0.666667  0.024491  0.015816  23.59068
0.733333  0.024645  0.017454  27.56307
0.800000  0.024798  0.019102  31.76491
0.866667  0.024952  0.020760  36.18783
0.933333  0.025105  0.022429  40.82438
1.000000  0.025259  0.024108  45.66787
1.066667  0.025413  0.025797  50.71233
1.133333  0.025566  0.027496  55.95231
1.200000  0.025720  0.029206  61.38289
1.266667  0.025873  0.030925  66.99956
1.333333  0.026027  0.032655  72.79822
1.400000  0.026180  0.034396  78.77508
1.466667  0.026334  0.036146  84.92665
1.533333  0.026487  0.037907  91.24974
1.600000  0.026641  0.039678  97.74138
1.666667  0.026794  0.041459  104.3988
1.733333  0.026948  0.043250  111.2195
1.800000  0.027102  0.045052  118.2010
1.866667  0.027255  0.046864  125.3412
1.933333  0.027409  0.048686  132.6381
2.000000  0.027562  0.050518  140.0896
2.066667  0.027716  0.052361  147.6941
2.133333  0.027870  0.054214  155.4497
2.200000  0.028023  0.056077  163.3551
2.266667  0.028177  0.057950  171.4087
2.333333  0.028330  0.059834  179.6091
2.400000  0.028484  0.061728  187.9551
2.466667  0.028638  0.063632  196.4455
2.533333  0.028791  0.065546  205.0791
2.600000  0.028945  0.067471  213.8549
2.666667  0.029099  0.069405  222.7718
2.733333  0.029252  0.071350  231.8291
2.800000  0.029406  0.073306  241.0257
2.866667  0.029559  0.075271  250.3609
2.933333  0.029713  0.077247  259.8339
3.000000  0.029867  0.079233  269.4440
3.066667  0.030020  0.081229  279.1905
3.133333  0.030174  0.083236  289.0728
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3.200000  0.030328  0.085252  299.0903
3.266667  0.030482  0.087279  309.2424
3.333333  0.030635  0.089317  319.5286
3.400000  0.030789  0.091364  329.9485
3.466667  0.030943  0.093422  340.5015
3.533333  0.031096  0.095490  351.1873
3.600000  0.031250  0.097568  362.0054
3.666667  0.031404  0.099656  372.9556
3.733333  0.031558  0.101755  384.0373
3.800000  0.031711  0.103864  395.2504
3.866667  0.031865  0.105983  406.5946
3.933333  0.032019  0.108113  418.0695
4.000000  0.032172  0.110252  429.6749
4.066667  0.032326  0.112402  441.4106
4.133333  0.032480  0.114563  453.2764
4.200000  0.032634  0.116733  465.2720
4.266667  0.032788  0.118914  477.3973
4.333333  0.032941  0.121105  489.6522
4.400000  0.033095  0.123306  502.0365
4.466667  0.033249  0.125517  514.5500
4.533333  0.033403  0.127739  527.1926
4.600000  0.033556  0.129971  539.9643
4.666667  0.033710  0.132213  552.8650
4.733333  0.033864  0.134466  565.8945
4.800000  0.034018  0.136728  579.0529
4.866667  0.034172  0.139001  592.3400
4.933333  0.034326  0.141285  605.7558
5.000000  0.034479  0.143578  619.3003
5.066667  0.034633  0.145882  632.9735
5.133333  0.034787  0.148196  646.7753
5.200000  0.034941  0.150520  660.7058
5.266667  0.035095  0.152855  674.7649
5.333333  0.035249  0.155200  688.9527
5.400000  0.035402  0.157555  703.2692
5.466667  0.035556  0.159920  717.7144
5.533333  0.035710  0.162295  732.2884
5.600000  0.035864  0.164681  746.9912
5.666667  0.036018  0.167077  761.8229
5.733333  0.036172  0.169484  776.7834
5.800000  0.036326  0.171900  791.8730
5.866667  0.036480  0.174327  807.0916
5.933333  0.036633  0.176764  822.4394
6.000000  0.036787  0.179211  837.9164
END FTABLE 58
FTABLE     55
 83    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.000000  0.000000  0.000000
0.010000  0.010000  0.010000  0.003000
0.200000  0.013000  0.013000  0.298000
0.400000  0.017000  0.017000  0.842000
0.600000  0.022000  0.022000  1.548000
0.800000  0.028000  0.028000  2.383000
1.000000  0.036000  0.036000  3.330000
1.200000  0.047000  0.047000  4.377000
1.400000  0.060000  0.060000  5.516000
1.600000  0.078000  0.078000  6.739000
1.800000  0.101000  0.101000  8.042000
2.000000  0.130000  0.130000  9.419000
2.200000  0.185000  0.157000  10.86600
2.400000  0.240000  0.190000  12.38100
2.600000  0.295000  0.230000  13.96100
2.800000  0.350000  0.278000  15.60200
3.000000  0.405000  0.336000  17.30300
3.200000  0.460000  0.407000  18.83400
3.400000  0.515000  0.492000  19.91100
3.600000  0.570000  0.595000  21.12200
3.800000  0.625000  0.719000  22.89200
4.000000  0.680000  0.870000  24.95900
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  4.200000  0.766000  0.980000  27.24600
  4.400000  0.851000  1.103000  29.71700
  4.600000  0.937000  1.242000  32.34800
  4.800000  1.023000  1.399000  35.12500
  5.000000  1.108000  1.575000  38.03600
  5.200000  1.194000  1.774000  41.07100
  5.400000  1.280000  1.997000  44.22500
  5.600000  1.366000  2.249000  47.42900
  5.800000  1.451000  2.533000  50.56000
  6.000000  1.537000  2.852000  56.24900
  6.200000  1.611000  3.194000  63.33500
  6.400000  1.686000  3.554000  71.47000
  6.600000  1.761000  3.930000  80.48600
  6.800000  1.838000  4.324000  90.27700
  7.000000  1.917000  4.735000  100.7700
  7.200000  1.996000  5.164000  111.9100
  7.400000  2.076000  5.610000  123.6540
  7.600000  2.158000  6.073000  135.9650
  7.800000  2.240000  6.554000  148.8160
  8.000000  2.324000  7.052000  162.1800
  8.200000  2.409000  7.567000  176.0360
  8.400000  2.495000  8.099000  190.3650
  8.600000  2.582000  8.649000  205.1500
  8.800000  2.670000  9.216000  220.3770
  9.000000  2.759000  9.801000  236.0300
  9.200000  2.849000  10.40300  252.0980
  9.400000  2.940000  11.02200  268.5700
  9.600000  3.033000  11.65800  285.4350
  9.800000  3.127000  12.31200  302.6830
  10.00000  3.221000  12.98300  320.3060
  10.20000  3.317000  13.67200  338.2940
  10.40000  3.414000  14.37700  356.6420
  10.60000  3.512000  15.10000  375.3400
  10.80000  3.611000  15.84100  394.3830
  11.00000  3.711000  16.59900  419.9530
  11.20000  3.813000  17.37400  441.9030
  11.40000  3.915000  18.16600  467.1990
  11.60000  4.019000  18.97600  494.9680
  11.80000  4.123000  19.80300  524.7890
  12.00000  4.229000  20.64700  556.4040
  12.20000  4.336000  21.50900  589.6330
  12.40000  4.444000  22.38800  624.3450
  12.60000  4.553000  23.28400  660.4370
  12.80000  4.663000  24.19700  697.8260
  13.00000  4.775000  25.12800  736.4450
  13.20000  4.887000  26.07700  776.2360
  13.40000  5.001000  27.04200  817.1490
  13.60000  5.115000  28.02500  859.1430
  13.80000  5.231000  29.02500  902.1790
  14.00000  5.348000  30.04300  946.2250
  14.20000  5.466000  31.07800  991.2480
  14.40000  5.585000  32.13000  1037.223
  14.60000  5.705000  33.20000  1084.125
  14.80000  5.826000  34.28600  1131.930
  15.00000  5.948000  35.39000  1180.618
  15.20000  6.072000  36.51200  1230.170
  15.40000  6.196000  37.65100  1280.566
  15.60000  6.322000  38.80700  1331.792
  15.80000  6.449000  39.98000  1383.830
  16.00000  6.577000  41.17100  1436.665
  16.20000  6.706000  42.37900  9999.000
  END FTABLE 55
END FTABLES

EXT SOURCES
<-Volume-> <Member> SsysSgap<--Mult-->Tran <-Target vols> <-Grp> <-Member->  ***
<Name>   # <Name> # tem strg<-factor->strg <Name>   #   #        <Name> # #  ***
WDM      2 PREC     ENGL    1.091          PERLND   1 999 EXTNL  PREC
WDM      2 PREC     ENGL    1.091          IMPLND   1 999 EXTNL  PREC
WDM      1 EVAP     ENGL    1              PERLND   1 999 EXTNL  PETINP
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WDM      1 EVAP     ENGL    1              IMPLND   1 999 EXTNL  PETINP
WDM     22 IRRG     ENGL    0.7       SAME PERLND  59     EXTNL  SURLI
WDM     22 IRRG     ENGL    0.7       SAME PERLND  58     EXTNL  SURLI
WDM     22 IRRG     ENGL    0.7       SAME PERLND  60     EXTNL  SURLI
WDM     22 IRRG     ENGL    0.7       SAME PERLND  42     EXTNL  SURLI
WDM     22 IRRG     ENGL    0.7       SAME PERLND  25     EXTNL  SURLI
WDM     22 IRRG     ENGL    0.7       SAME PERLND  41     EXTNL  SURLI
WDM     22 IRRG     ENGL    0.7       SAME PERLND  57     EXTNL  SURLI
WDM     22 IRRG     ENGL    0.7       SAME PERLND  43     EXTNL  SURLI
WDM     22 IRRG     ENGL    0.7       SAME PERLND  27     EXTNL  SURLI
WDM      2 PREC     ENGL    1.091          RCHRES   1     EXTNL  PREC
WDM      2 PREC     ENGL    1.091          RCHRES   2     EXTNL  PREC
WDM      2 PREC     ENGL    1.091          RCHRES   3     EXTNL  PREC
WDM      2 PREC     ENGL    1.091          RCHRES   4     EXTNL  PREC
WDM      2 PREC     ENGL    1.091          RCHRES   5     EXTNL  PREC
WDM      2 PREC     ENGL    1.091          RCHRES   6     EXTNL  PREC
WDM      2 PREC     ENGL    1.091          RCHRES   7     EXTNL  PREC
WDM      2 PREC     ENGL    1.091          RCHRES   8     EXTNL  PREC
WDM      2 PREC     ENGL    1.091          RCHRES  11     EXTNL  PREC
WDM      2 PREC     ENGL    1.091          RCHRES  12     EXTNL  PREC
WDM      2 PREC     ENGL    1.091          RCHRES  13     EXTNL  PREC
WDM      2 PREC     ENGL    1.091          RCHRES  14     EXTNL  PREC
WDM      2 PREC     ENGL    1.091          RCHRES  15     EXTNL  PREC
WDM      2 PREC     ENGL    1.091          RCHRES  16     EXTNL  PREC
WDM      2 PREC     ENGL    1.091          RCHRES  17     EXTNL  PREC
WDM      2 PREC     ENGL    1.091          RCHRES  18     EXTNL  PREC
WDM      2 PREC     ENGL    1.091          RCHRES  19     EXTNL  PREC
WDM      2 PREC     ENGL    1.091          RCHRES  20     EXTNL  PREC
WDM      2 PREC     ENGL    1.091          RCHRES  21     EXTNL  PREC
WDM      2 PREC     ENGL    1.091          RCHRES  22     EXTNL  PREC
WDM      2 PREC     ENGL    1.091          RCHRES  23     EXTNL  PREC
WDM      2 PREC     ENGL    1.091          RCHRES  24     EXTNL  PREC
WDM      2 PREC     ENGL    1.091          RCHRES  30     EXTNL  PREC
WDM      2 PREC     ENGL    1.091          RCHRES  31     EXTNL  PREC
WDM      2 PREC     ENGL    1.091          RCHRES  39     EXTNL  PREC
WDM      2 PREC     ENGL    1.091          RCHRES  41     EXTNL  PREC
WDM      2 PREC     ENGL    1.091          RCHRES  55     EXTNL  PREC
WDM      2 PREC     ENGL    1.091          RCHRES  57     EXTNL  PREC
WDM      1 EVAP     ENGL    1              RCHRES   1     EXTNL  POTEV
WDM      1 EVAP     ENGL    1              RCHRES   2     EXTNL  POTEV
WDM      1 EVAP     ENGL    1              RCHRES   3     EXTNL  POTEV
WDM      1 EVAP     ENGL    1              RCHRES   4     EXTNL  POTEV
WDM      1 EVAP     ENGL    1              RCHRES   5     EXTNL  POTEV
WDM      1 EVAP     ENGL    1              RCHRES   6     EXTNL  POTEV
WDM      1 EVAP     ENGL    1              RCHRES   7     EXTNL  POTEV
WDM      1 EVAP     ENGL    1              RCHRES   8     EXTNL  POTEV
WDM      1 EVAP     ENGL    1              RCHRES  11     EXTNL  POTEV
WDM      1 EVAP     ENGL    1              RCHRES  12     EXTNL  POTEV
WDM      1 EVAP     ENGL    1              RCHRES  13     EXTNL  POTEV
WDM      1 EVAP     ENGL    1              RCHRES  14     EXTNL  POTEV
WDM      1 EVAP     ENGL    1              RCHRES  15     EXTNL  POTEV
WDM      1 EVAP     ENGL    1              RCHRES  16     EXTNL  POTEV
WDM      1 EVAP     ENGL    1              RCHRES  17     EXTNL  POTEV
WDM      1 EVAP     ENGL    1              RCHRES  18     EXTNL  POTEV
WDM      1 EVAP     ENGL    1              RCHRES  19     EXTNL  POTEV
WDM      1 EVAP     ENGL    1              RCHRES  20     EXTNL  POTEV
WDM      1 EVAP     ENGL    1              RCHRES  21     EXTNL  POTEV
WDM      1 EVAP     ENGL    1              RCHRES  22     EXTNL  POTEV
WDM      1 EVAP     ENGL    1              RCHRES  23     EXTNL  POTEV
WDM      1 EVAP     ENGL    1              RCHRES  24     EXTNL  POTEV
WDM      1 EVAP     ENGL    1              RCHRES  25     EXTNL  POTEV
WDM      1 EVAP     ENGL    1              RCHRES  26     EXTNL  POTEV
WDM      1 EVAP     ENGL    1              RCHRES  27     EXTNL  POTEV
WDM      1 EVAP     ENGL    1              RCHRES  28     EXTNL  POTEV
WDM      1 EVAP     ENGL    1              RCHRES  29     EXTNL  POTEV
WDM      1 EVAP     ENGL    1              RCHRES  30     EXTNL  POTEV
WDM      1 EVAP     ENGL    1              RCHRES  31     EXTNL  POTEV
WDM      1 EVAP     ENGL    1              RCHRES  39     EXTNL  POTEV
WDM      1 EVAP     ENGL    1              RCHRES  41     EXTNL  POTEV
WDM      1 EVAP     ENGL    1              RCHRES  55     EXTNL  POTEV
```

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```
WDM      1 EVAP     ENGL    1              RCHRES  57     EXTNL  POTEV

END EXT SOURCES

EXT TARGETS
<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Volume-> <Member> Tsys Tgap Amd ***
<Name>   #        <Name> # #<-factor->strg <Name>   #  <Name>    tem strg strg***
RCHRES   32 HYDR   RO     1 1         1      WDM   1002 FLOW     ENGL       REPL
RCHRES   32 HYDR   STAGE  1 1         1      WDM   1003 STAG     ENGL       REPL
COPY     26 OUTPUT MEAN   1 1      12.1      WDM    726 FLOW     ENGL       REPL
COPY    526 OUTPUT MEAN   1 1      12.1      WDM    826 FLOW     ENGL       REPL
RCHRES   47 HYDR   RO     1 1         1      WDM   1006 FLOW     ENGL       REPL
RCHRES   47 HYDR   STAGE  1 1         1      WDM   1007 STAG     ENGL       REPL
COPY     24 OUTPUT MEAN   1 1      12.1      WDM    724 FLOW     ENGL       REPL
COPY    524 OUTPUT MEAN   1 1      12.1      WDM    824 FLOW     ENGL       REPL
RCHRES   50 HYDR   RO     1 1         1      WDM   1010 FLOW     ENGL       REPL
RCHRES   50 HYDR   STAGE  1 1         1      WDM   1011 STAG     ENGL       REPL
COPY     23 OUTPUT MEAN   1 1      12.1      WDM    723 FLOW     ENGL       REPL
COPY    523 OUTPUT MEAN   1 1      12.1      WDM    823 FLOW     ENGL       REPL
RCHRES   33 HYDR   RO     1 1         1      WDM   1024 FLOW     ENGL       REPL
RCHRES   33 HYDR   STAGE  1 1         1      WDM   1025 STAG     ENGL       REPL
COPY     28 OUTPUT MEAN   1 1      12.1      WDM    728 FLOW     ENGL       REPL
COPY    528 OUTPUT MEAN   1 1      12.1      WDM    828 FLOW     ENGL       REPL
RCHRES   48 HYDR   RO     1 1         1      WDM   1028 FLOW     ENGL       REPL
RCHRES   48 HYDR   STAGE  1 1         1      WDM   1029 STAG     ENGL       REPL
COPY     25 OUTPUT MEAN   1 1      12.1      WDM    725 FLOW     ENGL       REPL
COPY    525 OUTPUT MEAN   1 1      12.1      WDM    825 FLOW     ENGL       REPL
RCHRES   60 HYDR   RO     1 1         1      WDM   1036 FLOW     ENGL       REPL
RCHRES   60 HYDR   STAGE  1 1         1      WDM   1037 STAG     ENGL       REPL
COPY     20 OUTPUT MEAN   1 1      12.1      WDM    720 FLOW     ENGL       REPL
COPY    520 OUTPUT MEAN   1 1      12.1      WDM    820 FLOW     ENGL       REPL
RCHRES   61 HYDR   RO     1 1         1      WDM   1042 FLOW     ENGL       REPL
RCHRES   61 HYDR   STAGE  1 1         1      WDM   1043 STAG     ENGL       REPL
COPY     17 OUTPUT MEAN   1 1      12.1      WDM    717 FLOW     ENGL       REPL
COPY    517 OUTPUT MEAN   1 1      12.1      WDM    817 FLOW     ENGL       REPL
RCHRES   63 HYDR   RO     1 1         1      WDM   1048 FLOW     ENGL       REPL
RCHRES   63 HYDR   STAGE  1 1         1      WDM   1049 STAG     ENGL       REPL
COPY      6 OUTPUT MEAN   1 1      12.1      WDM    706 FLOW     ENGL       REPL
COPY    506 OUTPUT MEAN   1 1      12.1      WDM    806 FLOW     ENGL       REPL
RCHRES   51 HYDR   RO     1 1         1      WDM   1050 FLOW     ENGL       REPL
RCHRES   51 HYDR   STAGE  1 1         1      WDM   1051 STAG     ENGL       REPL
COPY      7 OUTPUT MEAN   1 1      12.1      WDM    707 FLOW     ENGL       REPL
COPY    507 OUTPUT MEAN   1 1      12.1      WDM    807 FLOW     ENGL       REPL
RCHRES   13 HYDR   RO     1 1         1      WDM   1052 FLOW     ENGL       REPL
RCHRES   13 HYDR   STAGE  1 1         1      WDM   1053 STAG     ENGL       REPL
COPY      8 OUTPUT MEAN   1 1      12.1      WDM    708 FLOW     ENGL       REPL
COPY    508 OUTPUT MEAN   1 1      12.1      WDM    808 FLOW     ENGL       REPL
RCHRES   15 HYDR   RO     1 1         1      WDM   1054 FLOW     ENGL       REPL
RCHRES   15 HYDR   STAGE  1 1         1      WDM   1055 STAG     ENGL       REPL
COPY     13 OUTPUT MEAN   1 1      12.1      WDM    713 FLOW     ENGL       REPL
COPY    513 OUTPUT MEAN   1 1      12.1      WDM    813 FLOW     ENGL       REPL
RCHRES   65 HYDR   RO     1 1         1      WDM   1056 FLOW     ENGL       REPL
RCHRES   65 HYDR   STAGE  1 1         1      WDM   1057 STAG     ENGL       REPL
COPY      5 OUTPUT MEAN   1 1      12.1      WDM    705 FLOW     ENGL       REPL
COPY    505 OUTPUT MEAN   1 1      12.1      WDM    805 FLOW     ENGL       REPL
RCHRES   67 HYDR   RO     1 1         1      WDM   1058 FLOW     ENGL       REPL
RCHRES   67 HYDR   STAGE  1 1         1      WDM   1059 STAG     ENGL       REPL
COPY      3 OUTPUT MEAN   1 1      12.1      WDM    703 FLOW     ENGL       REPL
COPY    503 OUTPUT MEAN   1 1      12.1      WDM    803 FLOW     ENGL       REPL
RCHRES   39 HYDR   RO     1 1         1      WDM   1060 FLOW     ENGL       REPL
RCHRES   39 HYDR   STAGE  1 1         1      WDM   1061 STAG     ENGL       REPL
COPY     12 OUTPUT MEAN   1 1      12.1      WDM    712 FLOW     ENGL       REPL
COPY    512 OUTPUT MEAN   1 1      12.1      WDM    812 FLOW     ENGL       REPL
RCHRES   45 HYDR   RO     1 1         1      WDM   1062 FLOW     ENGL       REPL
RCHRES   45 HYDR   STAGE  1 1         1      WDM   1063 STAG     ENGL       REPL
COPY     11 OUTPUT MEAN   1 1      12.1      WDM    711 FLOW     ENGL       REPL
COPY    511 OUTPUT MEAN   1 1      12.1      WDM    811 FLOW     ENGL       REPL
RCHRES   21 HYDR   RO     1 1         1      WDM   1064 FLOW     ENGL       REPL
RCHRES   21 HYDR   STAGE  1 1         1      WDM   1065 STAG     ENGL       REPL
COPY     10 OUTPUT MEAN   1 1      12.1      WDM    710 FLOW     ENGL       REPL
```

DRAFT

```
COPY    510 OUTPUT MEAN    1 1     12.1      WDM     810 FLOW     ENGL      REPL
RCHRES   69 HYDR   RO      1 1        1      WDM    1072 FLOW     ENGL      REPL
RCHRES   69 HYDR   STAGE   1 1        1      WDM    1073 STAG     ENGL      REPL
COPY      2 OUTPUT MEAN    1 1     12.1      WDM     702 FLOW     ENGL      REPL
COPY    502 OUTPUT MEAN    1 1     12.1      WDM     802 FLOW     ENGL      REPL
RCHRES   71 HYDR   RO      1 1        1      WDM    1074 FLOW     ENGL      REPL
RCHRES   71 HYDR   STAGE   1 1        1      WDM    1075 STAG     ENGL      REPL
COPY      1 OUTPUT MEAN    1 1     12.1      WDM     701 FLOW     ENGL      REPL
COPY    501 OUTPUT MEAN    1 1     12.1      WDM     801 FLOW     ENGL      REPL
RCHRES   24 HYDR   RO      1 1        1      WDM    1080 FLOW     ENGL      REPL
RCHRES   24 HYDR   STAGE   1 1        1      WDM    1081 STAG     ENGL      REPL
COPY      9 OUTPUT MEAN    1 1     12.1      WDM     709 FLOW     ENGL      REPL
COPY    509 OUTPUT MEAN    1 1     12.1      WDM     809 FLOW     ENGL      REPL
RCHRES   41 HYDR   RO      1 1        1      WDM    1084 FLOW     ENGL      REPL
RCHRES   41 HYDR   STAGE   1 1        1      WDM    1085 STAG     ENGL      REPL
COPY     27 OUTPUT MEAN    1 1     12.1      WDM     727 FLOW     ENGL      REPL
COPY    527 OUTPUT MEAN    1 1     12.1      WDM     827 FLOW     ENGL      REPL
RCHRES   57 HYDR   RO      1 1        1      WDM    1088 FLOW     ENGL      REPL
RCHRES   57 HYDR   STAGE   1 1        1      WDM    1089 STAG     ENGL      REPL
COPY     21 OUTPUT MEAN    1 1     12.1      WDM     721 FLOW     ENGL      REPL
COPY    521 OUTPUT MEAN    1 1     12.1      WDM     821 FLOW     ENGL      REPL
RCHRES   55 HYDR   RO      1 1        1      WDM    1086 FLOW     ENGL      REPL
RCHRES   55 HYDR   STAGE   1 1        1      WDM    1087 STAG     ENGL      REPL
COPY     22 OUTPUT MEAN    1 1     12.1      WDM     722 FLOW     ENGL      REPL
COPY    522 OUTPUT MEAN    1 1     12.1      WDM     822 FLOW     ENGL      REPL
END EXT TARGETS

MASS-LINK
<Volume>   <-Grp> <-Member-><--Mult-->     <Target>       <-Grp> <-Member->***
<Name>             <Name> # #<-factor->     <Name>              <Name> # #***
  MASS-LINK         2
PERLND     PWATER SURO       0.083333      RCHRES         INFLOW IVOL
  END MASS-LINK     2

  MASS-LINK         3
PERLND     PWATER IFWO       0.083333      RCHRES         INFLOW IVOL
  END MASS-LINK     3

  MASS-LINK         5
IMPLND     IWATER SURO       0.083333      RCHRES         INFLOW IVOL
  END MASS-LINK     5

  MASS-LINK         6
RCHRES     ROFLOW                          RCHRES         INFLOW
  END MASS-LINK     6

  MASS-LINK        12
PERLND     PWATER SURO       0.083333      COPY           INPUT  MEAN
  END MASS-LINK    12

  MASS-LINK        13
PERLND     PWATER IFWO       0.083333      COPY           INPUT  MEAN
  END MASS-LINK    13

  MASS-LINK        15
IMPLND     IWATER SURO       0.083333      COPY           INPUT  MEAN
  END MASS-LINK    15

  MASS-LINK        16
RCHRES     ROFLOW                          COPY           INPUT  MEAN
  END MASS-LINK    16


END MASS-LINK

END RUN
```

DRAFT

```
ERROR/WARNING ID:   341   6

DATE/TIME: 1973/ 2/27 18: 0

RCHRES:    10

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB().  To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows.  This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS         V1         V2        VOL
91 3.9431E+04 3.9976E+04 4.0562E+04
```

```
ERROR/WARNING ID:   341   5

DATE/TIME: 1973/ 2/27 18: 0

RCHRES:    10

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated.  If extrapolation was small, no problem.
Remedy; extend ftable.  Relevant data are:

A          B          C      RDEP1      RDEP2  COUNT
6.8346E+01 3.2665E+04 -6.785E+04     2.0683     2.0683       3
```

```
ERROR/WARNING ID:   341   6

DATE/TIME: 1973/ 2/27 18: 0

RCHRES:    26

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB().  To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows.  This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS         V1         V2        VOL
91 1.2170E+05 1.2348E+05 1.2733E+05
```

```
ERROR/WARNING ID:   341   5

DATE/TIME: 1973/ 2/27 18: 0

RCHRES:    26

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated.  If extrapolation was small, no problem.
Remedy; extend ftable.  Relevant data are:

A          B          C      RDEP1      RDEP2  COUNT
1.3721E+02 5.3236E+04 -1.688E+05    3.1454  3.1454E+00      3
```

```
ERROR/WARNING ID:   341   6

DATE/TIME: 1978/ 3/ 2 12: 0

RCHRES:    10
```

DRAFT

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS	V1	V2	VOL
91	3.9431E+04	3.9976E+04	4.1183E+04

ERROR/WARNING ID: 341 5

DATE/TIME: 1978/ 3/ 2 12: 0

RCHRES: 10

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
6.8346E+01	3.2665E+04	-1.051E+05	3.1970	3.1969E+00	3

ERROR/WARNING ID: 341 6

DATE/TIME: 1978/ 3/ 2 12: 0

RCHRES: 17

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS	V1	V2	VOL
91	1.7961E+05	1.8231E+05	2.0103E+05

ERROR/WARNING ID: 341 5

DATE/TIME: 1978/ 3/ 2 12: 0

RCHRES: 17

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
2.2507E+02	8.0576E+04	-6.426E+05	7.8045	7.8045E+00	3

ERROR/WARNING ID: 341 6

DATE/TIME: 1978/ 3/ 2 12: 0

RCHRES: 24

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS	V1	V2	VOL
91	7.9185E+04	8.0343E+04	8.5237E+04

DRAFT

ERROR/WARNING ID: 341   5

DATE/TIME: 1978/ 3/ 2 12: 0

RCHRES: 24

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
8.9297E+01	3.4638E+04	-1.815E+05	5.1721	5.1721E+00	3

ERROR/WARNING ID: 341   6

DATE/TIME: 1978/ 3/ 2 12: 0

RCHRES: 26

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS	V1	V2	VOL
91	1.2170E+05	1.2348E+05	1.5484E+05

ERROR/WARNING ID: 341   5

DATE/TIME: 1978/ 3/ 2 12: 0

RCHRES: 26

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
1.3721E+02	5.3236E+04	-9.942E+05	17.853	1.7853E+01	4

ERROR/WARNING ID: 341   6

DATE/TIME: 1978/ 3/ 2 12: 0

RCHRES: 29

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS	V1	V2	VOL
91	1.8252E+05	1.8513E+05	2.2552E+05

ERROR/WARNING ID: 341   5

DATE/TIME: 1978/ 3/ 2 12: 0

RCHRES: 29

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).

DRAFT

Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
1.8700E+02	7.8168E+04	-1.290E+06	15.899	1.5898E+01	3

ERROR/WARNING ID: 341 6

DATE/TIME: 1978/ 3/ 2 12: 0

RCHRES: 31

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS	V1	V2	VOL
91	1.8272E+05	1.8512E+05	2.3855E+05

ERROR/WARNING ID: 341 5

DATE/TIME: 1978/ 3/ 2 12: 0

RCHRES: 31

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
1.1430E+02	7.1762E+04	-1.675E+06	22.534	2.2533E+01	3

ERROR/WARNING ID: 341 6

DATE/TIME: 1978/ 3/ 2 12: 0

RCHRES: 33

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS	V1	V2	VOL
91	6.1933E+05	6.2711E+05	6.7254E+05

ERROR/WARNING ID: 341 5

DATE/TIME: 1978/ 3/ 2 12: 0

RCHRES: 33

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
2.0495E+02	1.7481E+05	-1.197E+06	6.7948	6.7947E+00	3

ERROR/WARNING ID: 341 6

DATE/TIME: 1978/ 3/ 2 12: 0

DRAFT

RCHRES: 35

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS	V1	V2	VOL
91	4.1691E+05	4.2211E+05	4.7208E+05

ERROR/WARNING ID: 341   5

DATE/TIME: 1978/ 3/ 2 12: 0

RCHRES: 35

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
1.0424E+02	9.3596E+04	-9.932E+05	10.489	1.0489E+01	3

ERROR/WARNING ID: 341   6

DATE/TIME: 1983/ 1/26 21: 0

RCHRES: 10

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS	V1	V2	VOL
91	3.9431E+04	3.9976E+04	4.0018E+04

ERROR/WARNING ID: 341   5

DATE/TIME: 1983/ 1/26 21: 0

RCHRES: 10

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
6.8346E+01	3.2665E+04	-3.523E+04	1.0768	1.0761E+00	2

ERROR/WARNING ID: 341   6

DATE/TIME: 1983/ 1/26 21: 0

RCHRES: 26

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

DRAFT

```
NROWS         V1         V2         VOL
91 1.2170E+05 1.2348E+05 1.2397E+05
```

```
ERROR/WARNING ID:   341   5

DATE/TIME: 1983/ 1/26 21: 0

RCHRES:    26

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated.  If extrapolation was small, no problem.
Remedy; extend ftable.  Relevant data are:

A          B          C      RDEP1      RDEP2  COUNT
1.3721E+02 5.3236E+04 -6.796E+04    1.2724  1.2724E+00      3
```

```
ERROR/WARNING ID:   341   6

DATE/TIME: 1986/ 2/18 23: 0

RCHRES:    10

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB().  To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows.  This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS         V1         V2         VOL
91 3.9431E+04 3.9976E+04 5.1505E+04
```

```
ERROR/WARNING ID:   341   5

DATE/TIME: 1986/ 2/18 23: 0

RCHRES:    10

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated.  If extrapolation was small, no problem.
Remedy; extend ftable.  Relevant data are:

A          B          C      RDEP1      RDEP2  COUNT
6.8346E+01 3.2665E+04 -7.245E+05   21.235     21.235        4
```

```
ERROR/WARNING ID:   341   6

DATE/TIME: 1986/ 2/18 23: 0

RCHRES:    17

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB().  To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows.  This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS         V1         V2         VOL
91 1.7961E+05 1.8231E+05 2.3293E+05
```

```
ERROR/WARNING ID:   341   5

DATE/TIME: 1986/ 2/18 23: 0

RCHRES:    17
```

DRAFT

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
2.2507E+02	8.0576E+04	-1.600E+06	18.858	1.8858E+01	4

ERROR/WARNING ID: 341   6

DATE/TIME: 1986/ 2/18 23: 0

RCHRES: 20

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS	V1	V2	VOL
91	1.8275E+05	1.8549E+05	2.1429E+05

ERROR/WARNING ID: 341   5

DATE/TIME: 1986/ 2/18 23: 0

RCHRES: 20

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
2.2904E+02	8.1985E+04	-9.461E+05	11.190	1.1190E+01	3

ERROR/WARNING ID: 341   6

DATE/TIME: 1986/ 2/18 23: 0

RCHRES: 24

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS	V1	V2	VOL
91	7.9185E+04	8.0343E+04	1.0283E+05

ERROR/WARNING ID: 341   5

DATE/TIME: 1986/ 2/18 23: 0

RCHRES: 24

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
8.9297E+01	3.4638E+04	-7.094E+05	19.501	1.9501E+01	4

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ERROR/WARNING ID: 341   6

DATE/TIME: 1986/ 2/18 23: 0

RCHRES: 25

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS	V1	V2	VOL
91	1.5815E+05	1.6023E+05	1.6480E+05

ERROR/WARNING ID: 341   5

DATE/TIME: 1986/ 2/18 23: 0

RCHRES: 25

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
1.4841E+02	9.3171E+04	-2.993E+05	3.1956	3.1956	3

ERROR/WARNING ID: 341   6

DATE/TIME: 1986/ 2/18 23: 0

RCHRES: 26

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS	V1	V2	VOL
91	1.2170E+05	1.2348E+05	1.8514E+05

ERROR/WARNING ID: 341   5

DATE/TIME: 1986/ 2/18 23: 0

RCHRES: 26

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
1.3721E+02	5.3236E+04	-1.903E+06	32.951	3.2951E+01	4

ERROR/WARNING ID: 341   6

DATE/TIME: 1986/ 2/18 23: 0

RCHRES: 29

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the

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simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS   V1   V2   VOL
91 1.8252E+05 1.8513E+05 2.5650E+05

ERROR/WARNING ID: 341   5

DATE/TIME: 1986/ 2/18 23: 0

RCHRES: 29

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A   B   C   RDEP1   RDEP2 COUNT
1.8700E+02 7.8168E+04 -2.219E+06   26.689   26.689   4

ERROR/WARNING ID: 341   6

DATE/TIME: 1986/ 2/18 23: 0

RCHRES: 31

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS   V1   V2   VOL
91 1.8272E+05 1.8512E+05 2.6946E+05

ERROR/WARNING ID: 341   5

DATE/TIME: 1986/ 2/18 23: 0

RCHRES: 31

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A   B   C   RDEP1   RDEP2 COUNT
1.1430E+02 7.1762E+04 -2.602E+06   34.379   3.4379E+01   4

ERROR/WARNING ID: 341   6

DATE/TIME: 1986/ 2/18 23: 0

RCHRES: 32

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS   V1   V2   VOL
91 1.9961E+05 2.0232E+05 2.2536E+05

ERROR/WARNING ID: 341   5

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DATE/TIME: 1986/ 2/18 23: 0

RCHRES: 32

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
1.1835E+02	6.0995E+04	-5.794E+05	9.3304	9.3303E+00	3

ERROR/WARNING ID: 341   6

DATE/TIME: 1986/ 2/18 23: 0

RCHRES: 33

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS	V1	V2	VOL
91	6.1933E+05	6.2711E+05	7.3383E+05

ERROR/WARNING ID: 341   5

DATE/TIME: 1986/ 2/18 23: 0

RCHRES: 33

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
2.0495E+02	1.7481E+05	-2.576E+06	14.491	1.4491E+01	3

ERROR/WARNING ID: 341   6

DATE/TIME: 1986/ 2/18 23: 0

RCHRES: 35

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS	V1	V2	VOL
91	4.1691E+05	4.2211E+05	5.2481E+05

ERROR/WARNING ID: 341   5

DATE/TIME: 1986/ 2/18 23: 0

RCHRES: 35

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

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```
A          B          C      RDEP1      RDEP2  COUNT
1.0424E+02 9.3596E+04 -1.942E+06   20.294     20.294        3
```

```
ERROR/WARNING ID:   341   6

DATE/TIME: 1995/ 1/10  7: 0

RCHRES:     3

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB().  To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows.  This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS         V1         V2        VOL
91 2.9469E+05 2.9911E+05 3.5545E+05
```

```
ERROR/WARNING ID:   341   5

DATE/TIME: 1995/ 1/10  7: 0

RCHRES:     3

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated.  If extrapolation was small, no problem.
Remedy; extend ftable.  Relevant data are:

A          B          C      RDEP1      RDEP2  COUNT
3.6930E+02 1.3220E+05 -1.823E+06   13.295     13.294        3
```

```
ERROR/WARNING ID:   341   6

DATE/TIME: 1995/ 1/ 9 21: 0

RCHRES:    10

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB().  To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows.  This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS         V1         V2        VOL
91 3.9431E+04 3.9976E+04 5.3996E+04
```

```
ERROR/WARNING ID:   341   5

DATE/TIME: 1995/ 1/ 9 21: 0

RCHRES:    10

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated.  If extrapolation was small, no problem.
Remedy; extend ftable.  Relevant data are:

A          B          C      RDEP1      RDEP2  COUNT
6.8346E+01 3.2665E+04 -8.739E+05   25.403     25.403        4
```

```
ERROR/WARNING ID:   341   6

DATE/TIME: 1995/ 1/ 9 23: 0

RCHRES:    10
```

DRAFT

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS	V1	V2	VOL
91	3.9431E+04	3.9976E+04	5.3620E+04

ERROR/WARNING ID: 341 5

DATE/TIME: 1995/ 1/ 9 23: 0

RCHRES: 10

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
6.8346E+01	3.2665E+04	-8.514E+05	24.778	2.4778E+01	4

ERROR/WARNING ID: 341 6

DATE/TIME: 1995/ 1/10 6: 0

RCHRES: 10

DRAFT

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS	V1	V2	VOL
91	3.9431E+04	3.9976E+04	5.6586E+04

ERROR/WARNING ID: 341 5

DATE/TIME: 1995/ 1/10 6: 0

RCHRES: 10

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
6.8346E+01	3.2665E+04	-1.029E+06	29.669	2.9669E+01	4

ERROR/WARNING ID: 341 6

DATE/TIME: 1995/ 1/10 7: 0

RCHRES: 10

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS	V1	V2	VOL

```
91 3.9431E+04 3.9976E+04 4.1872E+04
```

```
ERROR/WARNING ID:   341   5

DATE/TIME: 1995/ 1/10  7: 0

RCHRES:    10

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated.  If extrapolation was small, no problem.
Remedy; extend ftable.  Relevant data are:

A          B          C      RDEP1      RDEP2  COUNT
6.8346E+01 3.2665E+04 -1.465E+05    4.4429  4.4429E+00      3
```

```
ERROR/WARNING ID:   341   6

DATE/TIME: 1995/ 1/ 9 21: 0

RCHRES:    17

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB().  To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows.  This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS         V1         V2         VOL
91 1.7961E+05 1.8231E+05 2.0956E+05
```

```
ERROR/WARNING ID:   341   5

DATE/TIME: 1995/ 1/ 9 21: 0

RCHRES:    17

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated.  If extrapolation was small, no problem.
Remedy; extend ftable.  Relevant data are:

A          B          C      RDEP1      RDEP2  COUNT
2.2507E+02 8.0576E+04 -8.985E+05   10.824     10.824        3
```

```
ERROR/WARNING ID:   341   6

DATE/TIME: 1995/ 1/ 9 23: 0

RCHRES:    17

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB().  To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows.  This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS         V1         V2         VOL
91 1.7961E+05 1.8231E+05 2.0641E+05
```

```
ERROR/WARNING ID:   341   5

DATE/TIME: 1995/ 1/ 9 23: 0

RCHRES:    17

Calculation of relative depth, using Newton's method of successive
```

DRAFT

approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

```
A          B          C      RDEP1      RDEP2  COUNT
2.2507E+02 8.0576E+04 -8.040E+05    9.7144  9.7143E+00      3
```

ERROR/WARNING ID: 341   6

DATE/TIME: 1995/ 1/10 6: 0

RCHRES: 17

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

```
NROWS         V1         V2        VOL
91 1.7961E+05 1.8231E+05 2.1686E+05
```

ERROR/WARNING ID: 341   5

DATE/TIME: 1995/ 1/10 6: 0

RCHRES: 17

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

```
A          B          C      RDEP1      RDEP2  COUNT
2.2507E+02 8.0576E+04 -1.118E+06   13.370   1.3370E+01      3
```

ERROR/WARNING ID: 341   6

DATE/TIME: 1995/ 1/10 7: 0

RCHRES: 17

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

```
NROWS         V1         V2        VOL
91 1.7961E+05 1.8231E+05 3.1467E+05
```

ERROR/WARNING ID: 341   5

DATE/TIME: 1995/ 1/10 7: 0

RCHRES: 17

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

```
A          B          C      RDEP1      RDEP2  COUNT
2.2507E+02 8.0576E+04 -4.052E+06   44.702   4.4702E+01      4
```

ERROR/WARNING ID: 341   6

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DATE/TIME: 1995/ 1/10 8: 0

RCHRES: 17

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS	V1	V2	VOL
91	1.7961E+05	1.8231E+05	1.9446E+05

ERROR/WARNING ID: 341   5

DATE/TIME: 1995/ 1/10 8: 0

RCHRES: 17

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
2.2507E+02	8.0576E+04	-4.454E+05	5.4448	5.4448E+00	3

ERROR/WARNING ID: 341   6

DATE/TIME: 1995/ 1/10 9: 0

RCHRES: 17

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS	V1	V2	VOL
91	1.7961E+05	1.8231E+05	1.8587E+05

ERROR/WARNING ID: 341   5

DATE/TIME: 1995/ 1/10 9: 0

RCHRES: 17

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
2.2507E+02	8.0576E+04	-1.876E+05	2.3133	2.3133E+00	3

ERROR/WARNING ID: 341   6

DATE/TIME: 1995/ 1/ 9 21: 0

RCHRES: 20

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.

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Relevant data are:

NROWS	V1	V2	VOL
91	1.8275E+05	1.8549E+05	2.1382E+05

ERROR/WARNING ID: 341 5

DATE/TIME: 1995/ 1/ 9 21: 0

RCHRES: 20

Calculation of relative depth, using Newton's method of successive approximations, converged to an invalid value (not in range 0.0 to 1.0). Probably ftable was extrapolated. If extrapolation was small, no problem. Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
2.2904E+02	8.1985E+04	-9.321E+05	11.029	1.1029E+01	3

ERROR/WARNING ID: 341 6

DATE/TIME: 1995/ 1/ 9 23: 0

RCHRES: 20

The volume of water in this reach/mixed reservoir is greater than the value in the "volume" column of the last row of RCHTAB(). To continue the simulation the table has been extrapolated, based on information contained in the last two rows. This will usually result in some loss of accuracy. If depth is being calculated it will also cause an error condition. Relevant data are:

NROWS	V1	V2	VOL
91	1.8275E+05	1.8549E+05	2.1848E+05

ERROR/WARNING ID: 341 5

DATE/TIME: 1995/ 1/ 9 23: 0

RCHRES: 20

Calculation of relative depth, using Newton's method of successive approximations, converged to an invalid value (not in range 0.0 to 1.0). Probably ftable was extrapolated. If extrapolation was small, no problem. Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
2.2904E+02	8.1985E+04	-1.072E+06	12.627	1.2627E+01	3

ERROR/WARNING ID: 341 6

DATE/TIME: 1995/ 1/10 6: 0

RCHRES: 20

The volume of water in this reach/mixed reservoir is greater than the value in the "volume" column of the last row of RCHTAB(). To continue the simulation the table has been extrapolated, based on information contained in the last two rows. This will usually result in some loss of accuracy. If depth is being calculated it will also cause an error condition. Relevant data are:

NROWS	V1	V2	VOL
91	1.8275E+05	1.8549E+05	2.2253E+05

ERROR/WARNING ID: 341 5

DATE/TIME: 1995/ 1/10 6: 0

DRAFT

RCHRES: 20

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
2.2904E+02	8.1985E+04	-1.193E+06	14.008	1.4008E+01	3

ERROR/WARNING ID: 341   6

DATE/TIME: 1995/ 1/10 7: 0

RCHRES: 20

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS	V1	V2	VOL
91	1.8275E+05	1.8549E+05	2.1131E+05

ERROR/WARNING ID: 341   5

DATE/TIME: 1995/ 1/10 7: 0

RCHRES: 20

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
2.2904E+02	8.1985E+04	-8.568E+05	10.162	10.162	3

ERROR/WARNING ID: 341   6

DATE/TIME: 1995/ 1/ 9 21: 0

RCHRES: 24

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS	V1	V2	VOL
91	7.9185E+04	8.0343E+04	1.0055E+05

ERROR/WARNING ID: 341   5

DATE/TIME: 1995/ 1/ 9 21: 0

RCHRES: 24

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
8.9297E+01	3.4638E+04	-6.408E+05	17.693	17.693	4

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ERROR/WARNING ID: 341   6

DATE/TIME: 1995/ 1/ 9 23: 0

RCHRES: 24

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS	V1	V2	VOL
91	7.9185E+04	8.0343E+04	1.0155E+05

ERROR/WARNING ID: 341   5

DATE/TIME: 1995/ 1/ 9 23: 0

RCHRES: 24

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
8.9297E+01	3.4638E+04	-6.710E+05	18.489	18.489	4

ERROR/WARNING ID: 341   6

DATE/TIME: 1995/ 1/10 6: 0

RCHRES: 24

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS	V1	V2	VOL
91	7.9185E+04	8.0343E+04	1.0438E+05

ERROR/WARNING ID: 341   5

DATE/TIME: 1995/ 1/10 6: 0

RCHRES: 24

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
8.9297E+01	3.4638E+04	-7.558E+05	20.715	2.0715E+01	4

ERROR/WARNING ID: 341   6

DATE/TIME: 1995/ 1/10 7: 0

RCHRES: 24

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the

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simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS   V1   V2   VOL
91 7.9185E+04 8.0343E+04 1.1057E+05

ERROR/WARNING ID: 341   5

DATE/TIME: 1995/ 1/10 7: 0

RCHRES: 24

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A   B   C   RDEP1   RDEP2 COUNT
8.9297E+01 3.4638E+04 -9.415E+05   25.504   2.5504E+01   4

ERROR/WARNING ID: 341   6

DATE/TIME: 1995/ 1/ 9 21: 0

RCHRES: 25

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS   V1   V2   VOL
91 1.5815E+05 1.6023E+05 1.6176E+05

ERROR/WARNING ID: 341   5

DATE/TIME: 1995/ 1/ 9 21: 0

RCHRES: 25

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A   B   C   RDEP1   RDEP2 COUNT
1.4841E+02 9.3171E+04 -1.621E+05   1.7350 1.7350E+00   3

ERROR/WARNING ID: 341   6

DATE/TIME: 1995/ 1/ 9 23: 0

RCHRES: 25

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS   V1   V2   VOL
91 1.5815E+05 1.6023E+05 1.6463E+05

ERROR/WARNING ID: 341   5

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DATE/TIME: 1995/ 1/ 9 23: 0

RCHRES: 25

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
1.4841E+02	9.3171E+04	-2.914E+05	3.1125	3.1125E+00	3

ERROR/WARNING ID: 341   6

DATE/TIME: 1995/ 1/10 6: 0

RCHRES: 25

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS	V1	V2	VOL
91	1.5815E+05	1.6023E+05	1.6723E+05

ERROR/WARNING ID: 341   5

DATE/TIME: 1995/ 1/10 6: 0

RCHRES: 25

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
1.4841E+02	9.3171E+04	-4.084E+05	4.3536	4.3536	3

ERROR/WARNING ID: 341   6

DATE/TIME: 1995/ 1/10 7: 0

RCHRES: 25

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS	V1	V2	VOL
91	1.5815E+05	1.6023E+05	1.7190E+05

ERROR/WARNING ID: 341   5

DATE/TIME: 1995/ 1/10 7: 0

RCHRES: 25

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

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```
A          B          C      RDEP1      RDEP2  COUNT
1.4841E+02 9.3171E+04 -6.188E+05    6.5725  6.5725E+00      3
```

```
ERROR/WARNING ID:   341   6

DATE/TIME: 1995/ 1/ 9 21: 0

RCHRES:    26

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB().  To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows.  This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS         V1         V2        VOL
91 1.2170E+05 1.2348E+05 1.7788E+05
```

```
ERROR/WARNING ID:   341   5

DATE/TIME: 1995/ 1/ 9 21: 0

RCHRES:    26

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated.  If extrapolation was small, no problem.
Remedy; extend ftable.  Relevant data are:

A          B          C      RDEP1      RDEP2  COUNT
1.3721E+02 5.3236E+04 -1.685E+06   29.424   2.9424E+01      4
```

```
ERROR/WARNING ID:   341   6

DATE/TIME: 1995/ 1/ 9 23: 0

RCHRES:    26

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB().  To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows.  This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS         V1         V2        VOL
91 1.2170E+05 1.2348E+05 1.7396E+05
```

```
ERROR/WARNING ID:   341   5

DATE/TIME: 1995/ 1/ 9 23: 0

RCHRES:    26

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated.  If extrapolation was small, no problem.
Remedy; extend ftable.  Relevant data are:

A          B          C      RDEP1      RDEP2  COUNT
1.3721E+02 5.3236E+04 -1.568E+06   27.498   2.7498E+01      4
```

```
ERROR/WARNING ID:   341   6

DATE/TIME: 1995/ 1/10  6: 0

RCHRES:    26
```

DRAFT

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS	V1	V2	VOL
91	1.2170E+05	1.2348E+05	1.8439E+05

ERROR/WARNING ID: 341 5

DATE/TIME: 1995/ 1/10 6: 0

RCHRES: 26

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
1.3721E+02	5.3236E+04	-1.880E+06	32.587	32.587	4

ERROR/WARNING ID: 341 6

DATE/TIME: 1995/ 1/10 7: 0

RCHRES: 26

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS	V1	V2	VOL
91	1.2170E+05	1.2348E+05	2.1327E+05

ERROR/WARNING ID: 341 5

DATE/TIME: 1995/ 1/10 7: 0

RCHRES: 26

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
1.3721E+02	5.3236E+04	-2.747E+06	46.117	46.117	4

ERROR/WARNING ID: 341 6

DATE/TIME: 1995/ 1/10 9: 0

RCHRES: 26

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS	V1	V2	VOL

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91 1.2170E+05 1.2348E+05 1.3610E+05

ERROR/WARNING ID: 341 5

DATE/TIME: 1995/ 1/10 9: 0

RCHRES: 26

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
1.3721E+02	5.3236E+04	-4.320E+05	7.9521	7.9520E+00	3

ERROR/WARNING ID: 341 6

DATE/TIME: 1995/ 1/ 9 21: 0

RCHRES: 29

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS	V1	V2	VOL
91	1.8252E+05	1.8513E+05	2.3862E+05

ERROR/WARNING ID: 341 5

DATE/TIME: 1995/ 1/ 9 21: 0

RCHRES: 29

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
1.8700E+02	7.8168E+04	-1.683E+06	20.525	2.0525E+01	4

ERROR/WARNING ID: 341 6

DATE/TIME: 1995/ 1/ 9 23: 0

RCHRES: 29

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS	V1	V2	VOL
91	1.8252E+05	1.8513E+05	2.0042E+05

ERROR/WARNING ID: 341 5

DATE/TIME: 1995/ 1/ 9 23: 0

RCHRES: 29

Calculation of relative depth, using Newton's method of successive

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approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
1.8700E+02	7.8168E+04	-5.371E+05	6.7612	6.7611E+00	3

ERROR/WARNING ID: 341 6

DATE/TIME: 1995/ 1/10 6: 0

RCHRES: 29

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS	V1	V2	VOL
91	1.8252E+05	1.8513E+05	2.4539E+05

ERROR/WARNING ID: 341 5

DATE/TIME: 1995/ 1/10 6: 0

RCHRES: 29

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
1.8700E+02	7.8168E+04	-1.886E+06	22.878	2.2878E+01	4

ERROR/WARNING ID: 341 6

DATE/TIME: 1995/ 1/10 7: 0

RCHRES: 29

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS	V1	V2	VOL
91	1.8252E+05	1.8513E+05	3.4644E+05

ERROR/WARNING ID: 341 5

DATE/TIME: 1995/ 1/10 7: 0

RCHRES: 29

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
1.8700E+02	7.8168E+04	-4.918E+06	55.532	5.5532E+01	4

ERROR/WARNING ID: 341 6

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DATE/TIME: 1995/ 1/10 8: 0

RCHRES: 29

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS	V1	V2	VOL
91	1.8252E+05	1.8513E+05	1.8900E+05

ERROR/WARNING ID: 341   5

DATE/TIME: 1995/ 1/10 8: 0

RCHRES: 29

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
1.8700E+02	7.8168E+04	-1.943E+05	2.4716	2.4716E+00	3

ERROR/WARNING ID: 341   6

DATE/TIME: 1995/ 1/10 9: 0

RCHRES: 29

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS	V1	V2	VOL
91	1.8252E+05	1.8513E+05	2.0102E+05

ERROR/WARNING ID: 341   5

DATE/TIME: 1995/ 1/10 9: 0

RCHRES: 29

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
1.8700E+02	7.8168E+04	-5.549E+05	6.9817	6.9817E+00	3

ERROR/WARNING ID: 341   6

DATE/TIME: 1995/ 1/ 9 21: 0

RCHRES: 31

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.

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Relevant data are:

NROWS	V1	V2	VOL
91	1.8272E+05	1.8512E+05	2.4912E+05

ERROR/WARNING ID: 341 5

DATE/TIME: 1995/ 1/ 9 21: 0

RCHRES: 31

Calculation of relative depth, using Newton's method of successive approximations, converged to an invalid value (not in range 0.0 to 1.0). Probably ftable was extrapolated. If extrapolation was small, no problem. Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
1.1430E+02	7.1762E+04	-1.992E+06	26.630	26.630	4

ERROR/WARNING ID: 341 6

DATE/TIME: 1995/ 1/ 9 23: 0

RCHRES: 31

The volume of water in this reach/mixed reservoir is greater than the value in the "volume" column of the last row of RCHTAB(). To continue the simulation the table has been extrapolated, based on information contained in the last two rows. This will usually result in some loss of accuracy. If depth is being calculated it will also cause an error condition. Relevant data are:

NROWS	V1	V2	VOL
91	1.8272E+05	1.8512E+05	2.1200E+05

ERROR/WARNING ID: 341 5

DATE/TIME: 1995/ 1/ 9 23: 0

RCHRES: 31

Calculation of relative depth, using Newton's method of successive approximations, converged to an invalid value (not in range 0.0 to 1.0). Probably ftable was extrapolated. If extrapolation was small, no problem. Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
1.1430E+02	7.1762E+04	-8.784E+05	12.011	1.2011E+01	3

ERROR/WARNING ID: 341 6

DATE/TIME: 1995/ 1/10 6: 0

RCHRES: 31

The volume of water in this reach/mixed reservoir is greater than the value in the "volume" column of the last row of RCHTAB(). To continue the simulation the table has been extrapolated, based on information contained in the last two rows. This will usually result in some loss of accuracy. If depth is being calculated it will also cause an error condition. Relevant data are:

NROWS	V1	V2	VOL
91	1.8272E+05	1.8512E+05	2.5608E+05

ERROR/WARNING ID: 341 5

DATE/TIME: 1995/ 1/10 6: 0

DRAFT

RCHRES: 31

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
1.1430E+02	7.1762E+04	-2.201E+06	29.302	2.9302E+01	4

ERROR/WARNING ID: 341   6

DATE/TIME: 1995/ 1/10 7: 0

RCHRES: 31

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS	V1	V2	VOL
91	1.8272E+05	1.8512E+05	3.6723E+05

ERROR/WARNING ID: 341   5

DATE/TIME: 1995/ 1/10 7: 0

RCHRES: 31

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
1.1430E+02	7.1762E+04	-5.535E+06	69.452	69.452	4

ERROR/WARNING ID: 341   6

DATE/TIME: 1995/ 1/10 8: 0

RCHRES: 31

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS	V1	V2	VOL
91	1.8272E+05	1.8512E+05	2.0350E+05

ERROR/WARNING ID: 341   5

DATE/TIME: 1995/ 1/10 8: 0

RCHRES: 31

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
1.1430E+02	7.1762E+04	-6.234E+05	8.5701	8.5701E+00	3

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ERROR/WARNING ID: 341   6

DATE/TIME: 1995/ 1/10 9: 0

RCHRES: 31

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS	V1	V2	VOL
91	1.8272E+05	1.8512E+05	2.1287E+05

ERROR/WARNING ID: 341   5

DATE/TIME: 1995/ 1/10 9: 0

RCHRES: 31

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
1.1430E+02	7.1762E+04	-9.044E+05	12.360	12.360	3

ERROR/WARNING ID: 341   6

DATE/TIME: 1995/ 1/ 9 21: 0

RCHRES: 32

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS	V1	V2	VOL
91	1.9961E+05	2.0232E+05	2.0597E+05

ERROR/WARNING ID: 341   5

DATE/TIME: 1995/ 1/ 9 21: 0

RCHRES: 32

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
1.1835E+02	6.0995E+04	-1.432E+05	2.3376	2.3376E+00	3

ERROR/WARNING ID: 341   6

DATE/TIME: 1995/ 1/10 6: 0

RCHRES: 32

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the

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simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS V1 V2 VOL
91 1.9961E+05 2.0232E+05 2.1131E+05

ERROR/WARNING ID: 341 5

DATE/TIME: 1995/ 1/10 6: 0

RCHRES: 32

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A B C RDEP1 RDEP2 COUNT
1.1835E+02 6.0995E+04 -2.634E+05 4.2823 4.2823 3

ERROR/WARNING ID: 341 6

DATE/TIME: 1995/ 1/10 7: 0

RCHRES: 32

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS V1 V2 VOL
91 1.9961E+05 2.0232E+05 3.1093E+05

ERROR/WARNING ID: 341 5

DATE/TIME: 1995/ 1/10 7: 0

RCHRES: 32

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A B C RDEP1 RDEP2 COUNT
1.1835E+02 6.0995E+04 -2.505E+06 38.229 38.229 4

ERROR/WARNING ID: 341 6

DATE/TIME: 1995/ 1/ 9 21: 0

RCHRES: 33

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS V1 V2 VOL
91 6.1933E+05 6.2711E+05 6.3944E+05

ERROR/WARNING ID: 341 5

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DATE/TIME: 1995/ 1/ 9 21: 0

RCHRES: 33

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT	
2.0495E+02	1.7481E+05	-4.526E+05	2.5811	2.5811E+00		3

ERROR/WARNING ID: 341   6

DATE/TIME: 1995/ 1/10 6: 0

RCHRES: 33

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS	V1	V2	VOL
91	6.1933E+05	6.2711E+05	6.5603E+05

ERROR/WARNING ID: 341   5

DATE/TIME: 1995/ 1/10 6: 0

RCHRES: 33

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT	
2.0495E+02	1.7481E+05	-8.257E+05	4.6974	4.6974E+00		3

ERROR/WARNING ID: 341   6

DATE/TIME: 1995/ 1/10 7: 0

RCHRES: 33

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS	V1	V2	VOL
91	6.1933E+05	6.2711E+05	1.1435E+06

ERROR/WARNING ID: 341   5

DATE/TIME: 1995/ 1/10 7: 0

RCHRES: 33

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

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```
A          B          C      RDEP1      RDEP2  COUNT
2.0495E+02 1.7481E+05 -1.179E+07   62.837   6.2837E+01      4
```

```
ERROR/WARNING ID:   341   6

DATE/TIME: 1995/ 1/10  8: 0

RCHRES:    33

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB().  To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows.  This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS         V1         V2        VOL
91 6.1933E+05 6.2711E+05 7.1323E+05
```

```
ERROR/WARNING ID:   341   5

DATE/TIME: 1995/ 1/10  8: 0

RCHRES:    33

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated.  If extrapolation was small, no problem.
Remedy; extend ftable.  Relevant data are:

A          B          C      RDEP1      RDEP2  COUNT
2.0495E+02 1.7481E+05 -2.113E+06   11.919   1.1919E+01      3
```

```
ERROR/WARNING ID:   341   6

DATE/TIME: 1995/ 1/10  7: 0

RCHRES:    34

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB().  To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows.  This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS         V1         V2        VOL
91 3.7869E+05 3.8342E+05 4.7158E+05
```

```
ERROR/WARNING ID:   341   5

DATE/TIME: 1995/ 1/10  7: 0

RCHRES:    34

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated.  If extrapolation was small, no problem.
Remedy; extend ftable.  Relevant data are:

A          B          C      RDEP1      RDEP2  COUNT
9.4695E+01 8.5019E+04 -1.672E+06   19.252   1.9252E+01      3
```

```
ERROR/WARNING ID:   341   6

DATE/TIME: 1995/ 1/ 9 21: 0

RCHRES:    35
```

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The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS	V1	V2	VOL
91	4.1691E+05	4.2211E+05	4.7001E+05

ERROR/WARNING ID: 341 5

DATE/TIME: 1995/ 1/ 9 21: 0

RCHRES: 35

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
1.0424E+02	9.3596E+04	-9.559E+05	10.100	10.100	3

ERROR/WARNING ID: 341 6

DATE/TIME: 1995/ 1/ 9 23: 0

RCHRES: 35

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS	V1	V2	VOL
91	4.1691E+05	4.2211E+05	4.4170E+05

ERROR/WARNING ID: 341 5

DATE/TIME: 1995/ 1/ 9 23: 0

RCHRES: 35

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
1.0424E+02	9.3596E+04	-4.464E+05	4.7442	4.7442E+00	3

ERROR/WARNING ID: 341 6

DATE/TIME: 1995/ 1/10 6: 0

RCHRES: 35

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS	V1	V2	VOL

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91 4.1691E+05 4.2211E+05 4.8529E+05

ERROR/WARNING ID: 341 5

DATE/TIME: 1995/ 1/10 6: 0

RCHRES: 35

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
1.0424E+02	9.3596E+04	-1.231E+06	12.965	1.2965E+01	3

ERROR/WARNING ID: 341 6

DATE/TIME: 1995/ 1/10 7: 0

RCHRES: 35

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS	V1	V2	VOL
91	4.1691E+05	4.2211E+05	7.7555E+05

ERROR/WARNING ID: 341 5

DATE/TIME: 1995/ 1/10 7: 0

RCHRES: 35

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
1.0424E+02	9.3596E+04	-6.456E+06	64.360	64.360	4

ERROR/WARNING ID: 341 6

DATE/TIME: 1995/ 1/10 8: 0

RCHRES: 35

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS	V1	V2	VOL
91	4.1691E+05	4.2211E+05	5.0361E+05

ERROR/WARNING ID: 341 5

DATE/TIME: 1995/ 1/10 8: 0

RCHRES: 35

Calculation of relative depth, using Newton's method of successive

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approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
1.0424E+02	9.3596E+04	-1.561E+06	16.377	1.6377E+01	3

ERROR/WARNING ID: 341 6

DATE/TIME: 1995/ 1/10 9: 0

RCHRES: 35

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS	V1	V2	VOL
91	4.1691E+05	4.2211E+05	4.2539E+05

ERROR/WARNING ID: 341 5

DATE/TIME: 1995/ 1/10 9: 0

RCHRES: 35

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
1.0424E+02	9.3596E+04	-1.528E+05	1.6295	1.6295E+00	3

ERROR/WARNING ID: 341 6

DATE/TIME: 1995/ 1/10 7: 0

RCHRES: 36

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS	V1	V2	VOL
91	1.5562E+05	1.5762E+05	2.0636E+05

ERROR/WARNING ID: 341 5

DATE/TIME: 1995/ 1/10 7: 0

RCHRES: 36

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
3.4063E+01	2.4014E+04	-6.089E+05	24.505	2.4504E+01	3

ERROR/WARNING ID: 341 6

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DATE/TIME: 1995/ 1/10 7: 0

RCHRES: 37

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS	V1	V2	VOL
91	5.5031E+05	5.5739E+05	7.6632E+05

ERROR/WARNING ID: 341   5

DATE/TIME: 1995/ 1/10 7: 0

RCHRES: 37

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
1.2032E+02	8.4906E+04	-2.592E+06	29.312	29.312	4

ERROR/WARNING ID: 341   6

DATE/TIME: 1995/ 1/10 7: 0

RCHRES: 38

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS	V1	V2	VOL
91	2.1297E+05	2.1597E+05	2.1714E+05

ERROR/WARNING ID: 341   5

DATE/TIME: 1995/ 1/10 7: 0

RCHRES: 38

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
4.0686E+01	1.7979E+04	-2.503E+04	1.3880	1.3880	3

ERROR/WARNING ID: 341   6

DATE/TIME: 1995/ 1/10 7: 0

RCHRES: 39

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.

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Relevant data are:

NROWS	V1	V2	VOL
91	9.1364E+05	9.2628E+05	1.0694E+06

ERROR/WARNING ID: 341 5

DATE/TIME: 1995/ 1/10 7: 0

RCHRES: 39

Calculation of relative depth, using Newton's method of successive approximations, converged to an invalid value (not in range 0.0 to 1.0). Probably ftable was extrapolated. If extrapolation was small, no problem. Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
1.5839E+02	7.5688E+04	-9.345E+05	12.043	1.2043E+01	3

ERROR/WARNING ID: 341 6

DATE/TIME: 1995/ 1/10 7: 0

RCHRES: 40

The volume of water in this reach/mixed reservoir is greater than the value in the "volume" column of the last row of RCHTAB(). To continue the simulation the table has been extrapolated, based on information contained in the last two rows. This will usually result in some loss of accuracy. If depth is being calculated it will also cause an error condition. Relevant data are:

NROWS	V1	V2	VOL
91	3.3663E+05	3.4128E+05	3.8263E+05

ERROR/WARNING ID: 341 5

DATE/TIME: 1995/ 1/10 7: 0

RCHRES: 40

Calculation of relative depth, using Newton's method of successive approximations, converged to an invalid value (not in range 0.0 to 1.0). Probably ftable was extrapolated. If extrapolation was small, no problem. Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
5.8369E+01	2.7889E+04	-2.760E+05	9.7010	9.7009E+00	3

ERROR/WARNING ID: 341 6

DATE/TIME: 1996/ 4/ 1 17: 0

RCHRES: 10

The volume of water in this reach/mixed reservoir is greater than the value in the "volume" column of the last row of RCHTAB(). To continue the simulation the table has been extrapolated, based on information contained in the last two rows. This will usually result in some loss of accuracy. If depth is being calculated it will also cause an error condition. Relevant data are:

NROWS	V1	V2	VOL
91	3.9431E+04	3.9976E+04	4.8039E+04

ERROR/WARNING ID: 341 5

DATE/TIME: 1996/ 4/ 1 17: 0

DRAFT

RCHRES: 10

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
6.8346E+01	3.2665E+04	-5.165E+05	15.321	1.5321E+01	3

ERROR/WARNING ID: 341   6

DATE/TIME: 1996/ 4/ 1 17: 0

RCHRES: 24

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS	V1	V2	VOL
91	7.9185E+04	8.0343E+04	8.4628E+04

ERROR/WARNING ID: 341   5

DATE/TIME: 1996/ 4/ 1 17: 0

RCHRES: 24

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
8.9297E+01	3.4638E+04	-1.633E+05	4.6580	4.6580E+00	3

ERROR/WARNING ID: 341   6

DATE/TIME: 1996/ 4/ 1 17: 0

RCHRES: 26

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS	V1	V2	VOL
91	1.2170E+05	1.2348E+05	1.4673E+05

ERROR/WARNING ID: 341   5

DATE/TIME: 1996/ 4/ 1 17: 0

RCHRES: 26

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
1.3721E+02	5.3236E+04	-7.507E+05	13.624	13.623	3

DRAFT

ERROR/WARNING ID: 341   6

DATE/TIME: 1996/ 4/ 1 17: 0

RCHRES: 29

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS	V1	V2	VOL
91	1.8252E+05	1.8513E+05	1.9487E+05

ERROR/WARNING ID: 341   5

DATE/TIME: 1996/ 4/ 1 17: 0

RCHRES: 29

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
1.8700E+02	7.8168E+04	-3.705E+05	4.6874	4.6874E+00	3

ERROR/WARNING ID: 341   6

DATE/TIME: 1996/ 4/ 1 17: 0

RCHRES: 31

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS	V1	V2	VOL
91	1.8272E+05	1.8512E+05	2.0346E+05

ERROR/WARNING ID: 341   5

DATE/TIME: 1996/ 4/ 1 17: 0

RCHRES: 31

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
1.1430E+02	7.1762E+04	-6.223E+05	8.5549	8.5549E+00	3

ERROR/WARNING ID: 341   6

DATE/TIME: 1997/ 1/22 19: 0

RCHRES: 10

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the

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simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS   V1   V2   VOL
91 3.9431E+04 3.9976E+04 4.0585E+04

ERROR/WARNING ID: 341   5

DATE/TIME: 1997/ 1/22 19: 0

RCHRES: 10

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A   B   C   RDEP1   RDEP2 COUNT
6.8346E+01 3.2665E+04 -6.926E+04   2.1110 2.1110E+00   3

ERROR/WARNING ID: 341   6

DATE/TIME: 1997/ 1/22 19: 0

RCHRES: 17

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS   V1   V2   VOL
91 1.7961E+05 1.8231E+05 1.9042E+05

ERROR/WARNING ID: 341   5

DATE/TIME: 1997/ 1/22 19: 0

RCHRES: 17

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A   B   C   RDEP1   RDEP2 COUNT
2.2507E+02 8.0576E+04 -3.241E+05   3.9783 3.9783E+00   3

ERROR/WARNING ID: 341   6

DATE/TIME: 1997/ 1/22 19: 0

RCHRES: 24

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS   V1   V2   VOL
91 7.9185E+04 8.0343E+04 8.1056E+04

ERROR/WARNING ID: 341   5

DRAFT

DATE/TIME: 1997/ 1/22 19: 0

RCHRES: 24

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
8.9297E+01	3.4638E+04	-5.612E+04	1.6134	1.6134E+00	3

ERROR/WARNING ID: 341   6

DATE/TIME: 1997/ 1/22 19: 0

RCHRES: 26

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS	V1	V2	VOL
91	1.2170E+05	1.2348E+05	1.4672E+05

ERROR/WARNING ID: 341   5

DATE/TIME: 1997/ 1/22 19: 0

RCHRES: 26

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
1.3721E+02	5.3236E+04	-7.504E+05	13.618	1.3618E+01	3

ERROR/WARNING ID: 341   6

DATE/TIME: 1997/ 1/22 19: 0

RCHRES: 29

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS	V1	V2	VOL
91	1.8252E+05	1.8513E+05	2.0970E+05

ERROR/WARNING ID: 341   5

DATE/TIME: 1997/ 1/22 19: 0

RCHRES: 29

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

DRAFT

```
A          B          C      RDEP1      RDEP2  COUNT
1.8700E+02 7.8168E+04 -8.154E+05   10.183     10.183        3
```

```
ERROR/WARNING ID:   341   6

DATE/TIME: 1997/ 1/22 19: 0

RCHRES:    31

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB().  To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows.  This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS         V1         V2        VOL
91 1.8272E+05 1.8512E+05 2.2222E+05
```

```
ERROR/WARNING ID:   341   5

DATE/TIME: 1997/ 1/22 19: 0

RCHRES:    31

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated.  If extrapolation was small, no problem.
Remedy; extend ftable.  Relevant data are:

A          B          C      RDEP1      RDEP2  COUNT
1.1430E+02 7.1762E+04 -1.185E+06   16.099   1.6099E+01      3
```

```
ERROR/WARNING ID:   341   6

DATE/TIME: 1997/ 1/22 19: 0

RCHRES:    35

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB().  To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows.  This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS         V1         V2        VOL
91 4.1691E+05 4.2211E+05 4.3989E+05
```

```
ERROR/WARNING ID:   341   5

DATE/TIME: 1997/ 1/22 19: 0

RCHRES:    35

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated.  If extrapolation was small, no problem.
Remedy; extend ftable.  Relevant data are:

A          B          C      RDEP1      RDEP2  COUNT
1.0424E+02 9.3596E+04 -4.136E+05    4.3979  4.3979E+00      3
```

DRAFT

ERROR/WARNING ID: 341 6

DATE/TIME: 1986/ 2/18 23: 0

RCHRES: 60

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS	V1	V2	VOL
91	1.8272E+05	1.8512E+05	1.9769E+05

ERROR/WARNING ID: 341 5

DATE/TIME: 1986/ 2/18 23: 0

RCHRES: 60

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
1.1430E+02	7.1762E+04	-4.491E+05	6.1976	6.1976E+00	3

ERROR/WARNING ID: 341 6

DATE/TIME: 1986/ 2/18 24: 0

RCHRES: 60

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS	V1	V2	VOL
91	1.8272E+05	1.8512E+05	2.0060E+05

ERROR/WARNING ID: 341 5

DATE/TIME: 1986/ 2/18 24: 0

RCHRES: 60

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
1.1430E+02	7.1762E+04	-5.365E+05	7.3890	7.3890E+00	3

ERROR/WARNING ID: 341 6

DATE/TIME: 1986/ 2/18 23: 0

RCHRES: 64

DRAFT

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS	V1	V2	VOL
91	4.1691E+05	4.2211E+05	4.4601E+05

ERROR/WARNING ID: 341 5

DATE/TIME: 1986/ 2/18 23: 0

RCHRES: 64

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
1.0424E+02	9.3596E+04	-5.239E+05	5.5631	5.5631	3

ERROR/WARNING ID: 341 6

DATE/TIME: 1995/ 1/ 9 22: 0

RCHRES: 60

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS	V1	V2	VOL
91	1.8272E+05	1.8512E+05	1.9491E+05

ERROR/WARNING ID: 341 5

DATE/TIME: 1995/ 1/ 9 22: 0

RCHRES: 60

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
1.1430E+02	7.1762E+04	-3.658E+05	5.0560	5.0560E+00	3

ERROR/WARNING ID: 341 6

DATE/TIME: 1995/ 1/10 7: 0

RCHRES: 60

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS	V1	V2	VOL
91	1.8272E+05	1.8512E+05	3.4524E+05

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ERROR/WARNING ID: 341   5

DATE/TIME: 1995/ 1/10 7: 0

RCHRES: 60

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
1.1430E+02	7.1762E+04	-4.875E+06	61.847	6.1847E+01	4

ERROR/WARNING ID: 341   6

DATE/TIME: 1995/ 1/10 8: 0

RCHRES: 60

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS	V1	V2	VOL
91	1.8272E+05	1.8512E+05	2.8196E+05

ERROR/WARNING ID: 341   5

DATE/TIME: 1995/ 1/10 8: 0

RCHRES: 60

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
1.1430E+02	7.1762E+04	-2.977E+06	39.057	3.9057E+01	4

ERROR/WARNING ID: 341   6

DATE/TIME: 1995/ 1/10 9: 0

RCHRES: 60

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS	V1	V2	VOL
91	1.8272E+05	1.8512E+05	1.8921E+05

ERROR/WARNING ID: 341   5

DATE/TIME: 1995/ 1/10 9: 0

RCHRES: 60

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).

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Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
1.1430E+02	7.1762E+04	-1.946E+05	2.7005	2.7005E+00	3

ERROR/WARNING ID: 341   6

DATE/TIME: 1995/ 1/10 7: 0

RCHRES: 61

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS	V1	V2	VOL
91	2.6253E+05	2.6622E+05	2.9014E+05

ERROR/WARNING ID: 341   5

DATE/TIME: 1995/ 1/10 7: 0

RCHRES: 61

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
1.4793E+02	6.6262E+04	-4.970E+05	7.3791	7.3791	3

ERROR/WARNING ID: 341   6

DATE/TIME: 1995/ 1/10 7: 0

RCHRES: 62

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS	V1	V2	VOL
91	6.1933E+05	6.2711E+05	1.0218E+06

ERROR/WARNING ID: 341   5

DATE/TIME: 1995/ 1/10 7: 0

RCHRES: 62

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
2.0495E+02	1.7481E+05	-9.055E+06	48.987	4.8987E+01	4

ERROR/WARNING ID: 341   6

DATE/TIME: 1995/ 1/10 8: 0

DRAFT

RCHRES: 62

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS	V1	V2	VOL
91	6.1933E+05	6.2711E+05	8.7050E+05

ERROR/WARNING ID: 341   5

DATE/TIME: 1995/ 1/10 8: 0

RCHRES: 62

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
2.0495E+02	1.7481E+05	-5.651E+06	31.187	31.187	4

ERROR/WARNING ID: 341   6

DATE/TIME: 1995/ 1/10 7: 0

RCHRES: 63

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS	V1	V2	VOL
91	3.7869E+05	3.8342E+05	4.5812E+05

ERROR/WARNING ID: 341   5

DATE/TIME: 1995/ 1/10 7: 0

RCHRES: 63

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
9.4695E+01	8.5019E+04	-1.430E+06	16.512	1.6512E+01	3

ERROR/WARNING ID: 341   6

DATE/TIME: 1995/ 1/10 7: 0

RCHRES: 64

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

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```
NROWS         V1         V2         VOL
91 4.1691E+05 4.2211E+05 7.3648E+05
```

```
ERROR/WARNING ID:   341   5

DATE/TIME: 1995/ 1/10  7: 0

RCHRES:    64

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated.  If extrapolation was small, no problem.
Remedy; extend ftable.  Relevant data are:

A          B          C      RDEP1      RDEP2  COUNT
1.0424E+02 9.3596E+04 -5.752E+06   57.745   5.7745E+01      4
```

```
ERROR/WARNING ID:   341   6

DATE/TIME: 1995/ 1/10  8: 0

RCHRES:    64

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB().  To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows.  This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS         V1         V2         VOL
91 4.1691E+05 4.2211E+05 5.6983E+05
```

```
ERROR/WARNING ID:   341   5

DATE/TIME: 1995/ 1/10  8: 0

RCHRES:    64

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated.  If extrapolation was small, no problem.
Remedy; extend ftable.  Relevant data are:

A          B          C      RDEP1      RDEP2  COUNT
1.0424E+02 9.3596E+04 -2.753E+06   28.506   2.8506E+01      3
```

```
ERROR/WARNING ID:   341   6

DATE/TIME: 1995/ 1/10  7: 0

RCHRES:    65

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB().  To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows.  This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS         V1         V2         VOL
91 1.5562E+05 1.5762E+05 1.9752E+05
```

```
ERROR/WARNING ID:   341   5

DATE/TIME: 1995/ 1/10  7: 0

RCHRES:    65
```

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Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
3.4063E+01	2.4014E+04	-5.029E+05	20.353	20.353	3

ERROR/WARNING ID: 341   6

DATE/TIME: 1995/ 1/10 8: 0

RCHRES: 65

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS	V1	V2	VOL
91	1.5562E+05	1.5762E+05	1.6092E+05

ERROR/WARNING ID: 341   5

DATE/TIME: 1995/ 1/10 8: 0

RCHRES: 65

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
3.4063E+01	2.4014E+04	-6.363E+04	2.6400	2.6400E+00	3

ERROR/WARNING ID: 341   6

DATE/TIME: 1995/ 1/10 7: 0

RCHRES: 66

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS	V1	V2	VOL
91	5.5031E+05	5.5739E+05	7.2581E+05

ERROR/WARNING ID: 341   5

DATE/TIME: 1995/ 1/10 7: 0

RCHRES: 66

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
1.2032E+02	8.4906E+04	-2.106E+06	23.990	2.3989E+01	3

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ERROR/WARNING ID: 341   6

DATE/TIME: 1995/ 1/10 8: 0

RCHRES: 66

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS	V1	V2	VOL
91	5.5031E+05	5.5739E+05	5.8867E+05

ERROR/WARNING ID: 341   5

DATE/TIME: 1995/ 1/10 8: 0

RCHRES: 66

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
1.2032E+02	8.4906E+04	-4.604E+05	5.3813	5.3813E+00	3

ERROR/WARNING ID: 341   6

DATE/TIME: 1995/ 1/10 7: 0

RCHRES: 67

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS	V1	V2	VOL
91	2.1296E+05	2.1596E+05	2.2449E+05

ERROR/WARNING ID: 341   5

DATE/TIME: 1995/ 1/10 7: 0

RCHRES: 67

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
4.0686E+01	1.7978E+04	-6.917E+04	3.8145	3.8145	3

ERROR/WARNING ID: 341   6

DATE/TIME: 1995/ 1/10 7: 0

RCHRES: 68

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the

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simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS   V1   V2   VOL
91 9.1364E+05 9.2628E+05 9.9383E+05

ERROR/WARNING ID: 341   5

DATE/TIME: 1995/ 1/10 7: 0

RCHRES: 68

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A   B   C   RDEP1   RDEP2 COUNT
1.5839E+02 7.5688E+04 -4.811E+05   6.2746 6.2746E+00   3

ERROR/WARNING ID: 341   6

DATE/TIME: 1995/ 1/10 7: 0

RCHRES: 69

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS   V1   V2   VOL
91 3.3663E+05 3.4128E+05 3.5700E+05

ERROR/WARNING ID: 341   5

DATE/TIME: 1995/ 1/10 7: 0

RCHRES: 69

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A   B   C   RDEP1   RDEP2 COUNT
5.8369E+01 2.7889E+04 -1.223E+05   4.3444 4.3443E+00   3

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