Folsom Heights Tentative Map

Environmental Checklist and Addendum

April 2017

CITY OF FOLSOM
PARKS & RECREATION DEPARTMENT

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Addendum to the
Folsom Plan Area Specific Plan
Final Environmental Impact Report
for the Folsom Heights Tentative Map

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BACKGROUND AND ACTION TRIGGERING THE ADDENDUM

This addendum to the Final Environmental Impact Report/Environmental Impact Statement (Final EIR/EIS) for the Folsom South of U.S. Highway 50 Specific Plan Project analyzes the Folsom Heights Tentative Map development in comparison to how this area was analyzed within the EIR/EIS and within the Folsom Heights Specific Plan Amendment Addendum (2016 Addendum). Specifically, this addendum analyzes the subdivision map which includes a phasing plan.

As the lead agency under the California Environmental Quality Act (CEQA), the City of Folsom has determined that, in accordance with Section 15164 of the State CEQA Guidelines, the proposed subdivision map (tentative and final maps) and phasing plan and other changes differ sufficiently from the development scenario described in the Final EIR/EIS for the adopted FPASP to warrant preparation of an addendum, but do not include any new significant effects or increased severity of any previously identified effects to warrant preparation of a subsequent EIR or Negative Declaration, as appropriate, pursuant to Section 15162-15164 of the State CEQA Guidelines.

PREVIOUS ENVIRONMENTAL ANALYSES

The environmental process for the FPASP involved the preparation of the following documents that are relevant to the consideration of the proposed amendment to FPASP for the Folsom Heights Plan Area.

- Draft EIR/EIS for the Folsom South of U.S. 50 Specific Plan Project, Volumes I-III and Appendices, June 2010;
- Final EIR/EIS for the Folsom South of U.S. Highway 50 Specific Plan Project, May 2011;
- CEQA Findings of Fact and Statement of Overriding Considerations for the Folsom South of U.S. Highway 50 Specific Plan Project, May 2011;
- Mitigation Monitoring and Reporting Program for the Folsom South of U.S. Highway 50 Specific Plan Project, May 2011; and
- Folsom Heights Specific Plan Amendment Addendum, June 2016.

CALIFORNIA ENVIRONMENTAL QUALITY ACT GUIDELINES REGARDING AN ADDENDUM TO AN ENVIRONMENTAL IMPACT REPORT

Altered conditions, changes, or additions to the description of a project that occur after certification of an EIR may require additional analysis under CEQA. The legal principles that guide decisions regarding whether additional environmental documentation is required are provided in the State CEQA Guidelines, which establish three mechanisms to address these changes: a subsequent environmental impact report (SEIR), a Supplement to an EIR, and an Addendum to an EIR.

Section 15162 of the State CEQA Guidelines describes the conditions under which a SEIR would be prepared. In summary, when an EIR has been certified for a project, no Subsequent EIR shall be prepared for that project unless the lead agency determines, on the basis of substantial evidence in light of the whole record, one or more of the following:

> (1) Substantial changes are proposed in the project which will require major revisions of the previous EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified effects;
>
> (2) Substantial changes occur with respect to the circumstances under which the project is undertaken which will require major revisions of the previous EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects; or
>
> (3) New information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the previous EIR was certified as complete, shows any of the following:
>
> > (A) The project will have one or more significant effects not discussed in the previous EIR;
> >
> > (B) Significant effects previously examined will be substantially more severe than shown in the previous EIR;
> >
> > (C) Mitigation measures or alternatives previously found not to be feasible would in fact be feasible, and would substantially reduce one or more significant effects of the project, but the project proponents decline to adopt the mitigation measures or alternatives; or
> >
> > (D) Mitigation measures or alternatives which are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measure or alternative.

Section 15163 of the State CEQA Guidelines states that a lead agency may choose to prepare a supplement to an EIR rather than a Subsequent EIR if:

> (1) any of the conditions described above for Section 15162 would require the preparation of a SEIR; and
>
> (2) only minor additions or changes would be necessary to make the previous EIR adequately apply to the project in the changed situation.

An addendum is appropriate where a previously certified EIR has been prepared and some changes or revisions to the project are proposed, or the circumstances surrounding the project have changed, but none of the changes or revisions would result in significant new or substantially more severe environmental impacts, consistent with CEQA Section 21166 and State CEQA Guidelines Sections 15162, 15163, 15164, and 15168.

This addendum is intended to evaluate and confirm CEQA compliance for proposed amendment to the FPASP, which would be a change relative to what is described and evaluated in the FPASP Final EIR/EIS and 2016 Addendum. This addendum is organized as an environmental checklist, and is intended to evaluate all environmental topic areas for any changes in circumstances or the project description, as compared to the certified Final EIR/EIS, and determine whether such changes were or were not adequately covered in the certified EIR/EIS. This checklist is not the traditional CEQA Environmental Checklist, per Appendix G of the CEQA Guidelines. As explained below, the purpose of this checklist is to evaluate the checklist categories in terms of any “changed condition” (i.e., changed circumstances, project changes, or new information of substantial importance) that may result in a different environmental impact significance conclusion from the FPASP EIR/EIS. The column titles of the checklist have been modified from the Appendix G presentation to help answer the questions to be addressed pursuant to CEQA Statutes Section 21166 and CEQA Guidelines Section 15162, 15163, 15164 and 15168.

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Appendices (to be found on a CD on the back cover)

Exhibits

Tables

ACRONYMS AND ABBREVIATIONS

°C	degrees Celsius
°F	degrees Fahrenheit
AB 32	California Global Warming Solutions Act of 2006
APE	Area of Potential Effects
ARB	California Air Resources Board
Area 40	Aerojet Superfund site
ATCM	air toxic control measure
BAC	Bollard Acoustical Consultants
BMP	best management practice
CAA	federal Clean Air Act
CAAQS	California Ambient Air Quality Standard
CDFW	California Department of Fish and Wildlife
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CH_4	methane
CNEL	community noise equivalent level
CNG	compressed natural gas
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	CO_2-equivalent
dB	decibels
diesel PM	diesel-powered engines
DWR	California Department of Water Resources
EID	El Dorado Irrigation District
EIR/EIS	Environmental Impact Report/Environmental Impact Statement
EPA	U.S. Environmental Protection Agency
FAPA	First Amended Programmatic Agreement
FPASP	Folsom Plan Area Specific Plan
FTA	Federal Transit Administration
GHG	greenhouse gas
GWP	global warming potential
HFC	hydrofluorocarbon
HPMP	Historic Property Management Plan
HVAC	heating, ventilation, and air conditioning
IPCC	Intergovernmental Panel on Climate Change
LAFCo	Sacramento Local Agency Formation Commission
L_{dn}	day-night average noise level
LID	low impact development
MMT	million metric tons
MPO	Metropolitan Planning Organization

N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NHTSA	National Highway Traffic Safety Administration
NOA	naturally occurring asbestos
NO_X	oxides of nitrogen
NPDES	National Pollutant Discharge Elimination System
NRC	National Research Council
PA	programmatic agreement
PCE	tetrachloroethene
PFC	perfluorocarbon
PHPS	Preliminary Historic Properties Synthesis
PM_{10}	particulate matter with an aerodynamic diameter of 10 micrometers or less
$PM_{2.5}$	particulate matter with an aerodynamic diameter of 2.5 micrometers or less
PPV	peak particle velocity
REC	recognized environmental condition
ROG	reactive organic gas
RWQCB	Regional Water Quality Control Board
SACOG	Sacramento Area Council of Governments
SB	Senate Bill
SCS	Sustainable Communities Strategy
SENL	Single-event noise level
SF_6	sulfur hexafluoride
SHPO	State Historic Preservation Officer
SMAQMD	Sacramento Air Quality Management District
SPA	Specific Plan Amendment
SRCSD	Sacramento Regional County Sanitation District
SRWTP	Sacramento Regional Wastewater Treatment Plant
SVAB	Sacramento Valley Air Basin
SWPPP	storm water pollution prevention plan
TAC	toxic air contaminant
TCE	trichloroethene
TRU	transport refrigeration unit
USACE	U.S. Army Corps of Engineers
VdB	vibration decibels
VOC	volatile organic compound

1 INTRODUCTION AND PROJECT HISTORY

On June 28, 2011, the Folsom City Council approved the Folsom Plan Area Specific Plan (FPASP) for development of up to 10,210 residential homes with a range of housing types, styles, and densities along with commercial, industrial/office park, and mixed-use land uses, open space, public schools, parks, and supporting infrastructure. The development would be located on approximately 3,514 acres (Resolution No. 8863). The City and the U.S. Army Corps of Engineers (USACE) prepared a joint Environmental Impact Report/Environmental Impact Statement (EIR/EIS) for the FPASP that evaluated the environmental impacts associated with development of the entire plan area based on the land use and zoning designations identified in the specific plan. The City was the Lead Agency with respect to preparation of the EIR and USACE was the Lead Agency with respect to preparation of the EIS.

The EIR/EIS was prepared at the program “first-tier” level of environmental review consistent with the requirements of California Environmental Quality Act (CEQA) Sections 15152 and 15168. The program-level analysis considered the broad environmental impacts of the overall specific plan. In addition, the EIR/EIS also included a more detailed analysis of specific topic areas beyond the program level, including: Aesthetics; Cultural Resources; Geology, Soils, Minerals, and Paleontological Resources; Hazards and Hazardous Materials; and Land Use Planning and Agricultural Resources. The EIR/EIS acknowledged that development of the FPASP area would occur in multiple phases.

The area proposed for the Folsom Heights development was included within the FPASP and evaluated in the EIR/EIS. On June 28, 2016, the City Council approved an addendum and amendment to the adopted FPASP that reduced the area of general commercial land use in the Folsom Heights plan area and increased the acreage of residential development.

The Folsom Heights Specific Plan Amendment (SPA) was evaluated and it was determined that the entitlements/actions proposed fell within the scope of the certified EIR/EIS and incorporated all applicable performance standards and mitigation measures identified therein. The development is located on the north-eastern edge of the FPASP along the Sacramento County/El Dorado County line and the site is owned by Folsom Heights, LLC. The previous development application requested an SPA and a General Plan amendment (GPA) and was approved by the City Council in June 2016.

Folsom Heights, LLC has submitted an updated development application which provides additional detail and requests approval of the tentative subdivision map and final subdivision map, including utilities and public service approvals.

Consistent with the process described, the City is evaluating the Folsom Heights application to determine whether this project is consistent with the FPASP and Folsom Heights Specific Plan Amendment and whether and what type of additional environmental review would be required. This environmental checklist has been prepared to determine whether any additional environmental review would be required for the City to consider approval of the development application. This analysis considers whether there are changes proposed in the previously reviewed and approved FPASP or changed environmental conditions that are of sufficient magnitude to result in new or substantially more severe environmental impacts, as compared to those considered in the FPASP EIR/EIS, and whether there is new information of substantial importance showing that new or substantially more severe environmental impacts would occur compared to that evaluated in the FPASP EIR/EIS and Folsom Heights Specific Plan Amendment Addendum. Should this development application not be consistent with the approved FPASP, additional environmental review through the subsequent review provisions of CEQA for changes to previously reviewed and approved projects may be warranted (CEQA Guidelines Sections 15162 through 15164).

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2 PROJECT DESCRIPTION

2.1 PROJECT OVERVIEW

The owners of a portion of the FPASP area known as Folsom Heights have brought forward the next step in their development application, the tentative and final subdivision map. In June 2016, the City Council approved the Folsom Heights General Plan Amendment (GPA) and Specific Plan Amendment (SPA) (Folsom Heights SPA). The currently proposed Folsom Heights Tentative Map project (project) would include a minor modification to the approved Folsom Heights SPA land uses approved in 2016. The project would result in a detailed tentative map for approximately 190 acres located on the northeastern boundary of the FPASP. The proposed application is also substantially consistent with the land uses proposed and approved for this portion of the FPASP.

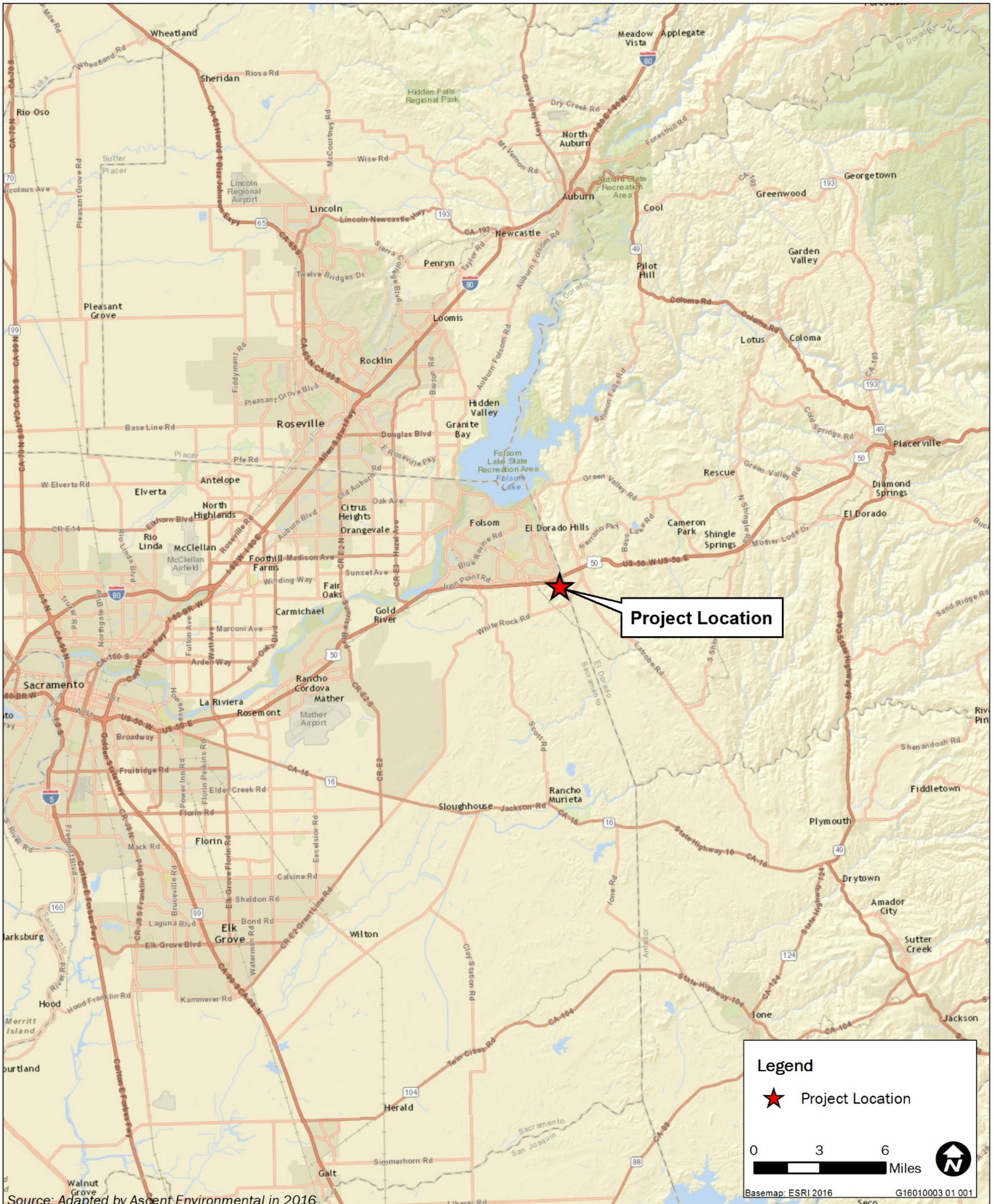
The proposed tentative map provides more detail than was previously available; however, the proposed land use types would be the same as that approved within the FPASP and SPA. No increases in the number of dwelling units from that approved under the FPASP would occur.

2.2 PROJECT LOCATION

The FPASP area is located within the City of Folsom, south of U.S. Highway 50 and north of White Rock Road, between Prairie City Road and the El Dorado County line (Exhibit 2-1). The Folsom Heights project area is located along the north-eastern boundary of the FPASP area, just south of U.S. Highway 50, along the Sacramento County/El Dorado County line (Exhibit 2-2 and Exhibit 2-3).

2.3 EXISTING SETTING

The project area is undeveloped grassland, currently used for cattle grazing. Developed land–east of the project area and north, across Highway 50, consists of large residential developments. The topography of the area consists of gently rolling hills.



Source: Adapted by Ascent Environmental in 2016

Exhibit 2-1 **Regional Location**

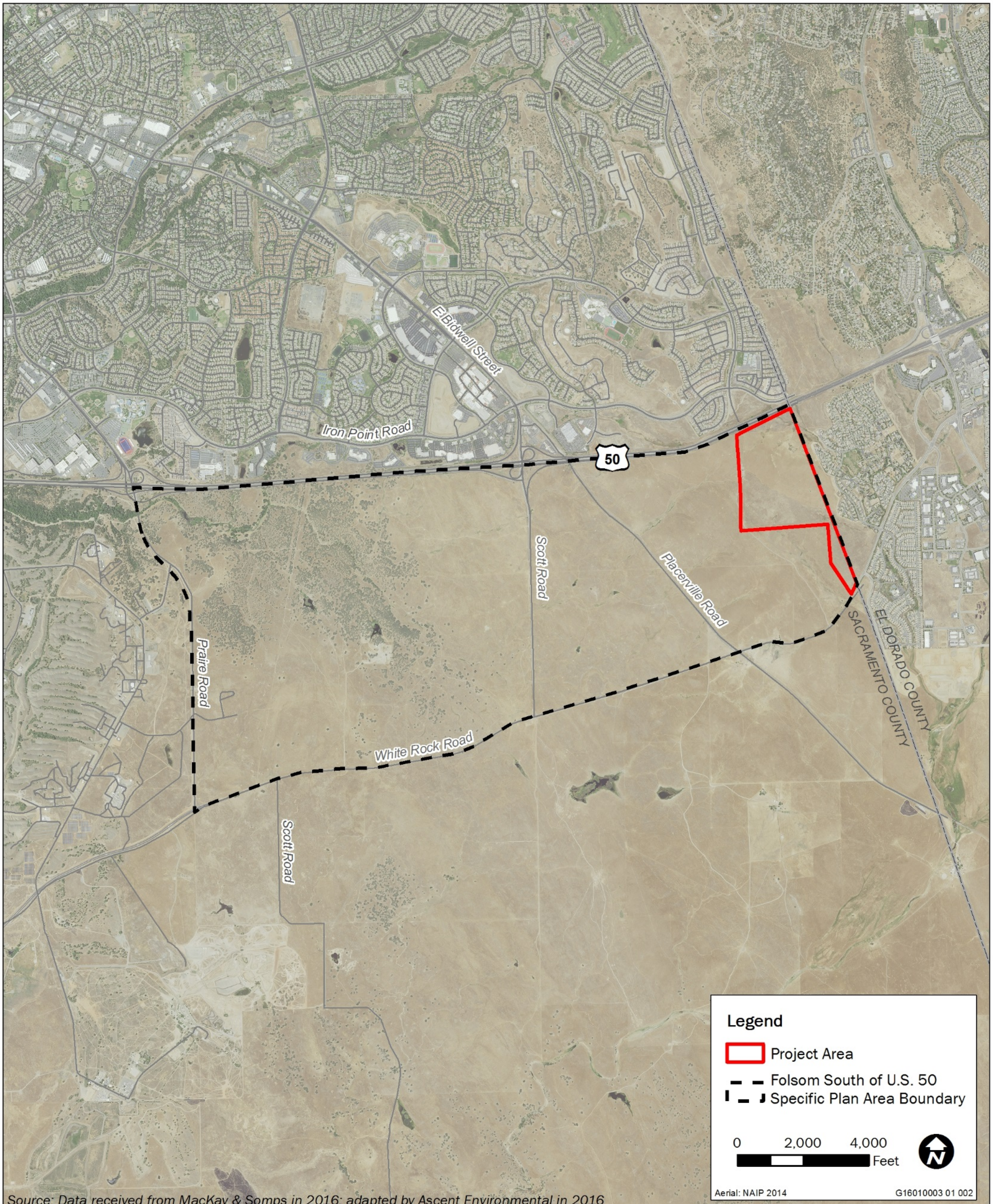


Exhibit 2-2

Project Vicinity

ASCENT ENVIRONMENTAL

Source: MacKay & Somps 2017

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Exhibit 2-3 **Folsom Heights Illustrated Tentative Map Master Plan**

2.4 PROJECT OBJECTIVES

The FPASP's objectives, as described in the EIR/EIS for the FPASP (City of Folsom 2010: p. 1-7) are the following:

1. Be consistent with the City of Folsom's General Plan and implement SACOG Smart Growth Principles.
2. Expand the City's boundaries based on the ultimate boundaries of development that the City can reasonably control and service, and do so in a manner that would foster orderly urban development and discourage leapfrog development and urban sprawl.
3. Annex those parcels of land adjacent to the City limit and within the City's Sphere of Influence whose development could have significant visual, traffic, public service, and environmental impacts on the City so that the City may influence the ultimate development of those parcels.
4. Provide a large-scale mixed-use and mixed-density residential housing development within the City of Folsom, south of U.S. 50.
5. Develop several distinct neighborhoods within the project site, connected by a substantial open space area and recreational trail network.
6. Provide neighborhood- and regional-serving retail areas within the project site.
7. Provide a mix of housing types within the project site to diversify the City's housing stock.
8. Provide a combined high school/middle school and the appropriate elementary schools on site sufficient to meet the needs of the project.
9. Provide the appropriate number and size of onsite community and neighborhood parks sufficient to meet the needs of the project.
10. Generate positive fiscal impacts for the City through development within the project site.
11. Secure a sufficient and reliable water supply consistent with the requirements of Measure W and objectives of the Water Forum Agreement to support planned development within the SPA, which the City estimates to be 5,600 acre-feet per year.
12. Construct the necessary water supply delivery and treatment infrastructure to ensure the safe and reliable delivery of up to 5,600 acre-feet per year to the FSPAP.

2.5 SUMMARY OF PROJECT

The project includes additional detail on the specific lot sizes, locations, and types; utility service providers; and roadway alignments. While the details were not known in prior environmental documents, the development land uses and development intensities were analyzed as part of the EIR/EIS and in the June 2016 Folsom Heights SPA Addendum (2016 Addendum). For this reason, the following project description and analysis focuses on the details not previously known. For example, the project, as described below includes a tentative map and utilities phasing. This information was not available for the Folsom Heights SPA. The numbers and types of utility facilities is listed with the utilities phasing plan in Section 2.5.2, below. The exact locations of utility facilities will be determined through the final design in coordination with service providers. However, the utility facilities will remain within the analyzed development footprint.

For more information on the Folsom Heights development, as analyzed in the Folsom Heights Specific Plan Amendment Addendum (June 2016), please see Appendix A.

2.5.1 Land Use Summary

The current application provides more detail on lotting pattern and utility types and phasing for the Folsom Heights project area. The precision of lot boundaries and site layout has become more refined but is subject to minor changes during final design. Minor alternations to the acreages of some land uses have occurred and are presented in Tables 2-1, 2-2, and 2-3, below. However, the total number of residential units and commercial square footage proposed within the Folsom Heights project area would be unchanged and the general location of the proposed uses would substantially unchanged from the land use map approved for the Folsom Heights SPA. (Exhibit 2-4)

Table 2-1 Adopted FPASP Land Use Summary (Folsom Heights Project Area, as amended June 2016)

Land Use	Gross Area (Acres)	% of Site	Density Range (du/ac)	Target DU[1]	Percentage of Allocated Units	Projected Population[2]	Target FAR[3]	Potential Bldg. Area (sf)
Residential								
Single Family (SF)	37.7	20.9%	1 to 4	125	24%	365	–	–
Single Family High Density (SFHD)	58.2	30.7%	4 to 7	280	53%	818	–	–
Multi-Family Low Density (MLD)	14.9	7.9%	7 to 12	125	24%	242	–	–
Subtotal Residential	110.8	59.5%	–	530	100%	1,425	–	–
Commercial								
General Commercial (GC)	11.5	6.1%	–	–	–	–	0.25	125,235
Open Space								
Open Space (OS)	47.2	24.9%	–	–	–	–	–	–
Circulation and Miscellaneous								
Utility Site (PQP)	1.8	0.9%	–	–	–	–	–	–
Highway 50	8	4.7%	–	–	–	–	–	–
Major Roads	10.4	5.0%	–	–	–	–	–	–
Total Folsom Heights	**189.7**	**100%**	**–**	**530**	**100%**	**1,425**	**–**	**125,235**

Notes:

1 Target dwelling unit allocation for each land use is a planning estimate. Actual total dwelling units for each land use may be higher or lower as long as the total for each land use falls within the specified density range and the total residential unit count does not exceed the FPASP area maximum of 11,230 dwelling units.

2 Population calculated using 2.92 persons per single family unit and 1.94 persons per multifamily unit.

3 Floor Area Ratio (FAR) is the ratio of building area to parcel area. The target FAR may be higher or lower for each land use as long as the Plan Area maximum of 3,338,378 SF is not exceeded.

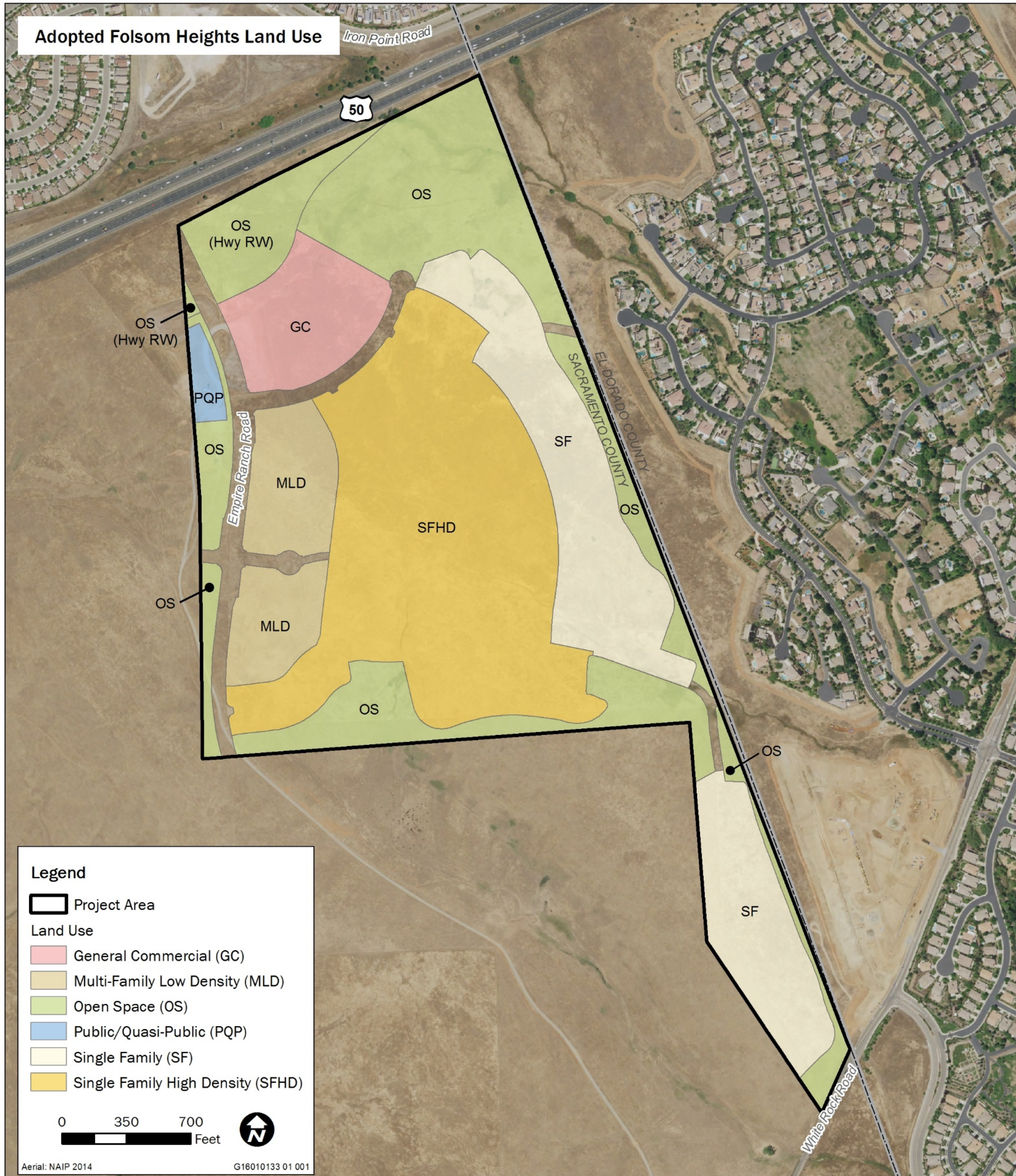

Exhibit 2-4

Land Use Comparison

ASCENT ENVIRONMENTAL

Table 2-2 Proposed Folsom Heights Tentative Map Project Land Use Summary

Land Use	Gross Area (Acres)	Density Range (du/ac)	Target DU[1]	Percentage of Allocated Units	Projected Population[2]	Target FAR[3]	Potential Bldg. Area (SF)
Residential							
Single Family (SF)	42.4	1 to 4	134	24%	391	–	–
Single Family High Density (SFHD)	55.1	4 to 7	273	53%	797	–	–
Multi-Family Low Density (MLD)	14.9	7 to 12	123	23%	239	–	–
Subtotal Residential	112.4	–	530	100%	1,427	–	–
Commercial							
General Commercial (GC)	11.4	–	–	–	–	0.25	125,235
Open Space							
Open Space (OS)	47.2	–	–	–	–	–	–
Circulation and Miscellaneous							
Utility Site (PQP)	1.5	–	–	–	–	–	–
Highway 50 (OS)	8.0	–	–	-	–	–	–
Major Roads	9.1	–	–	–	–	–	–
Total Folsom Heights	189.6	–	530	100%	1,427	–	

Notes:

1 Target dwelling unit allocation for each land use is a planning estimate. Actual total dwelling units for each land use may be higher or lower as long as the total for each land use falls within the specified density range and the total residential unit count does not exceed the FPASP area maximum of 11,230 dwelling units.

2 Population calculated using 2.92 persons per single family unit and 1.94 persons per multifamily unit.

3 Floor Area Ratio (FAR) is the ratio of building area to parcel area. The target FAR may be higher or lower for each land use as long as the Plan Area maximum of 3,338,378 SF is not exceeded.

Table 2-3 Summary of Changes Associated with the Project

Land Use	Gross Area (Acres)	Dwelling Units	Projected Population (persons)	Potential Bldg. Area (SF)
Single Family (SF)	4.7	4	26	-
Single Family High Density (SFHD)	-3.1	-3	-21	-
Multi-Family Low Density (MLD)	0	-1	-3	-
General Commercial (GC)	-0.1	NA		0
Open Space (OS)	0	NA		-
Utility Site (PQP)	-0.3	NA		-
Highway 50	0	NA		-
Major Roads	-1.2	NA		-
Total	0.0	0	2	0

Note: Numbers may not match exactly because of small rounding errors.

Source: Adapted by Ascent Environmental 2016

2.5.2 Phasing

The project would be built in four phases, as shown in Exhibit 2-5. This enables the developer to build the infrastructure which would support the development in coordination with the overall buildout. The phases are as follows:

- Phase 1 – Includes 136 residential units, including the east sewer system, water booster station, primary vehicular access via Prima Drive to Stonebriar Drive, temporary emergency vehicular access via Winterfield Drive, and other related infrastructure.
- Phase 2 – includes 266 residential units, including the north sewer system, primary vehicular access via Empire Ranch Road, secondary vehicular access via Easton Valley Parkway to Placerville Road, and other related infrastructure.
- Phase 3 (a and b) – includes 128 residential units, including the west sewer system, two sewer lift stations, and other related infrastructure.
- Phase 4 – includes the commercial development and associated infrastructure. This phase relies on the north sewer system developed under Phase 2.

The project falls within the El Dorado Irrigation District (EID) service area which would provide most, if not all, of water and sewer service. Sewer service established in Phases 1 and 2 would flow by gravity towards EID facilities. Sewer service established in Phase 3 may be provided by EID or City of Folsom, or some combination of both providers. The sewer would flow by gravity towards City of Folsom facilities or may be pumped towards EID facilities using the two sewer lift stations.

Because of topographical characteristics, lots in Phase 3 could gravity sewer to the City of Folsom's wastewater treatment system. Use of EID's wastewater system to service these lots would require construction of sewer lift stations and significant operational costs associated therewith, which would be a much less efficient approach to serving these lots than gravity service to the City of Folsom. As these lots lie within the jurisdictional boundaries of EID, it is currently assumed that sewer service for these lots will be provided by EID. However, service provided by the City of Folsom remains an alternative approach. Service by the City of Folsom would require a future agreement between the City of Folsom and EID addressing the terms and conditions under which such extra-territorial service would be provided, while at the same time acknowledging that the subject lots remain within the jurisdictional boundaries of EID.

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Source: MacKay & Somps 2017

Exhibit 2-5 **Folsom Heights Preliminary Phasing Plan**

2.6 REQUIRED DISCRETIONARY ACTIONS

2.6.1 Lead Agency

Table 2-4, below, shows the entitlements, approvals, and permits needed to develop the project as it moves forward through the entitlement process. It should be noted that if the Addendum is approved, no physical development would commence until such time the applicant secures all entitlements noted below.

Table 2-4 Entitlements, Approvals and Permits

Entitlement/Approval or Permit Needed	Agency
Large Lot Vesting Tentative Subdivision Map	Folsom City Council
Small Lot Vesting Tentative Subdivision Map	Folsom City Council
Development Agreement	Folsom City Council
Grading Permit	Community Development Department
Sewer and Water Utilities /Sewer and Water Service Letter	El Dorado Irrigation District Folsom City Council

2.6.2 Responsible Agencies

In addition to the list of entitlements, approvals, and/or permits identified in Table 2-4 above that must be obtained from the City of Folsom, the following approvals, consultations, and/or permits may be required from other agencies prior to physical development of the site. However, none of the entitlements listed below would be required prior to consideration of this Addendum.

FEDERAL ACTIONS/PERMITS

- U.S. Army Corps of Engineers: Department of the Army permit under Section 404 of the CWA for discharges of dredge or fill material into waters of the U.S. Consultation for impacts on cultural resources pursuant to Section 106 of the National Historic Preservation Act. Consultation for impacts on federally listed species pursuant to Section 7 of the ESA.
- U.S. Environmental Protection Agency: concurrence with Section 404 CWA permit.
- U.S. Fish and Wildlife Service: ESA consultation and issuance of incidental-take authorization for the take of federally listed endangered and threatened species.
- National Marine Fisheries Service: ESA consultation and issuance of incidental-take authorization for the take of federally listed endangered and threatened species.

STATE ACTIONS/PERMITS

- California Department of Fish and Wildlife, Sacramento Valley—Central Sierra Region: California Endangered Species Act consultation and issuance of take authorization (if needed) (California Fish and Game Code Section 2081), streambed alteration agreement (California Fish and Game Code Section 1602), and protection of raptors (California Fish and Game Code Section 3503.5).
- California Department of Transportation: encroachment permits; approval of landscaping plans and specifications for landscape corridor adjacent to U.S. Highway 50.

- Central Valley Regional Water Quality Control Board (Region 5): National Pollutant Discharge Elimination System (NPDES) construction stormwater permit (Notice of Intent to proceed under General Construction Permit) for disturbance of more than 1 acre; discharge permit for stormwater; general order for dewatering; and Section 401 CWA certification or waste discharge requirements; Clean Water Act, Section 401 Water Quality Certification; NPDES permit coverage for hydrostatic testing of pipeline (coverage expected under General Order for Low Threat Discharges to Surface Water).

- State Historic Preservation Officer (SHPO): approval of a Programmatic Agreement and/or MOU for Section 106 compliance with the National Historic Preservation Act.

- State Water Resource Control Board, Division of Drinking Water: approval amendment of water distribution system permit and the water treatment plant permit.

REGIONAL AND LOCAL ACTIONS/PERMITS

- Sacramento Metropolitan Air Quality Management District: authority to construct (for devices that emit air pollutants), health risk assessment, and Air Quality Management Plan consistency determination.

- El Dorado County: approval of roadway encroachment permit for pipeline construction.

- Sacramento County: approval of roadway encroachment permit for pipeline construction, rezoning, use permit, and approval of grading permit.

- City of Folsom: roadway encroachment permit for pipeline construction, tree removal permit (if needed), rezoning, and use permit.

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3 ENVIRONMENTAL CHECKLIST FOR SUPPLEMENTAL ENVIRONMENTAL REVIEW

3.1 EXPLANATION OF CHECKLIST EVALUATION CATEGORIES

The purpose of this checklist is to evaluate the categories in terms of any "changed condition" (i.e., changed circumstances, project changes, or new information of substantial importance) that may result in environmental impact significance conclusions different from those found in the 2011 EIR/EIS and 2016 Addendum. The row titles of the checklist include the full range of environmental topics, as presented in Appendix G of the State CEQA Guidelines. The column titles of the checklist have been modified from the Appendix G presentation to help answer the questions to be addressed pursuant to CEQA Section 21166 and State CEQA Guidelines Section 15162. A "no" answer does not necessarily mean that there are no potential impacts relative to the environmental category, but that there is no change in the condition or status of the impact because it was analyzed and addressed with mitigation measures in the EIR/EIS. For instance, the environmental categories might be answered with a "no" in the checklist because the impacts associated with the proposed project were adequately addressed in the EIR/EIS, and the environmental impact significance conclusions of the EIR/EIS remain applicable. The purpose of each column of the checklist is described below.

Where Impact was Analyzed?

This column provides a cross-reference to the pages of the EIR/EIS where information and analysis may be found relative to the environmental issue listed under each topic. Unless otherwise specified, all references point to the Draft EIR/EIS document.

Do Proposed Changes Involve New Significant Impacts?

The significance of the changes proposed to the approved FPASP, as it is described in the certified FPASP EIR/EIS, is indicated in the columns to the right of the environmental issues.

Any new Circumstances Involving New or Substantially More Severe Significant Impacts?

Pursuant to Section 15162(a)(2) of the CEQA Guidelines, this column indicates whether there have been changes to the project site or the vicinity (circumstances under which the project is undertaken) that have occurred subsequent to the prior environmental documents, which would result in the current project having new significant environmental impacts that were not considered in the prior environmental documents or having substantial increases in the severity of previously identified significant impacts.

Any New Information Requiring New Analysis or Verification?

Pursuant to Section 15162(a)(3)(A-D) of the CEQA Guidelines, this column indicates whether new information of substantial importance which was not known and could not have been known with the exercise of reasonable diligence at the time the previous environmental documents were certified as complete is available, requiring an update to the analysis of the previous environmental documents to verify that the environmental conclusions and mitigation measures remain valid. If the new information shows that: (A) the project will have one or more significant effects not discussed in the prior environmental documents; or (B) that significant effects previously examined will be substantially more severe than shown in the prior environmental documents; or (C) that mitigation measures or alternatives previously found not to be feasible would in fact be feasible and would substantially reduce one or more significant effects or the project, but the project proponents decline to adopt the Mitigation Measure or alternative; or (D) that mitigation measures or alternatives which are considerably different from those analyzed in the prior environmental documents would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the Mitigation Measure or alternative, the question would be answered "yes" requiring the preparation of a subsequent EIR or supplement to the EIR. However, if the additional analysis completed as part of this Environmental Checklist Review finds that the conclusions of the prior environmental documents remain the same and no new significant impacts are identified, or identified significant environmental impacts are not found to be substantially more severe, the question would be answered "no" and no additional EIR documentation (supplement to the EIR or subsequent EIR) would be required.

Notably, where the only basis for preparing a subsequent EIR or a supplement to an EIR is a new significant impact or a substantial increase in the severity of a previously identified impact, the need for the new EIR can be avoided if the project applicant agrees to one or more mitigation measures that can reduce the significant effect(s) at issue to less than significant levels. (See *River Valley Preservation Project v. Metropolitan Transit Development Board* (1995) 37 Cal.App.4th 154, 168.)

Do Prior Environmental Documents Mitigations Address/Resolve Impacts?

This column indicates whether the prior environmental documents and adopted CEQA Findings provide mitigation measures to address effects in the related impact category. In some cases, the mitigation measures have already been implemented. A "yes" response will be provided in either instance. If "NA" is indicated, this Environmental Checklist Review concludes that there was no impact, or the impact was less-than-significant and, therefore, no mitigation measures are needed.

3.2 DISCUSSION AND MITIGATION SECTIONS

Discussion

A discussion of the elements of the checklist is provided under each environmental category to clarify the answers. The discussion provides information about the particular environmental issue, how the project relates to the issue, and the status of any mitigation that may be required or that has already been implemented.

Mitigation Measures

Applicable mitigation measures from the prior environmental review that would apply to the proposed amendment are listed under each environmental category. New mitigation measures are included, if needed.

Conclusions

A discussion of the conclusion relating to the need for additional environmental documentation is contained in each section.

Acronyms Used in Checklist Tables

Acronyms used in the Environmental Checklist tables and discussions include:

EIR/EIS	Environmental Impact Report/Environmental Impact Statement
MM	Mitigation Measure
NA	not applicable

4 ENVIRONMENTAL CHECKLIST

4.1 AESTHETICS

Environmental Issue Area	Where Impact Was Analyzed in the EIR/EIS.	Do Any New Circumstances Involve New or Substantially More Severe Significant Impacts?	Any New Information Requiring New Analysis or Verification?	Do Prior Environmental Documents Mitigations Address/Resolve Impacts?
1. Aesthetics. Would the project:				
a. Have a substantial adverse effect on a scenic vista?	Setting pp. 3A.1-2 to 3A.1-22 Impacts 3A.1-1	No	No	Yes, but impact still remains significant and unavoidable
b. Substantially damage scenic resources, including but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	Setting p. 3A.1-26 Impact 3A.1-2	No	No	Yes, issue addressed but mitigation is still not feasible
c. Substantially degrade the existing visual character or quality of the site and its surroundings?	Setting pp. 3A.1-1 to 3A.1-20 Impacts 3A.1-3 and 3A.1-4	No	No	Yes, but impact still remains significant and unavoidable
d. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	Setting p. 3A.1-22 Impacts 3A.1-5, 3A.1-6	No	No	Yes

4.1.1 Discussion

No substantial change in the environmental and regulatory settings related to aesthetics, described in the EIR/EIS Section 3A.1 Aesthetics – Land, has occurred since certification of the EIR/EIS in 2011 and the 2016 Addendum (See Appendix A). Since the EIR/EIS was certified, additional development was approved and built adjacent to the project site. This development (El Dorado Springs 23), would contribute to the significant and unavoidable impact related to the area's change in visual character. However, as the EIS/EIR had already concluded that the impact was significant and unavoidable, this change in the existing environment would not change the conclusions within the EIS/EIR on this topic. While the current application provides additional detail, it does not constitute a change in circumstances regarding aesthetics.

The project does not introduce any new or unique visual features that were not analyzed in the FPASP EIR/EIS or 2016 Addendum. No new circumstances or project changes have occurred nor has any new information been found requiring new analysis or verification. The project provides more specifics on the lotting pattern and provision of public services to the site. The land use pattern and development intensity would not change and would be consistent with the approved Folsom Heights SPA.

Mitigation Measures

The following mitigation measures were referenced in the FPASP EIR/EIS analysis and would continue to remain applicable if the project were approved.

- Mitigation Measure 3A.1-1: Construct and maintain a landscape corridor adjacent to U.S. 50.
- Mitigation Measure 3A.1-4: Screen construction staging areas.

- Mitigation Measure 3A.1-5: Establish and require conformance to lighting standards and prepare and implement a lighting plan.

The FPASP EIR/EIS concluded that impacts to light and glare would be reduced to a less-than-significant level; however, impacts related to skyglow would remain significant and unavoidable. This conclusion would not change with implementation of the project.

CONCLUSION

No new circumstances or project changes have occurred nor has any new information been found requiring new analysis or verification. Therefore, the conclusions of the EIR/EIS remain valid and approval of the project would not result in new or substantially more severe significant impacts to aesthetics.

4.2 AGRICULTURE AND FOREST RESOURCES

	Environmental Issue Area	Where Impact Was Analyzed in the EIR/EIS.	Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	Any New Information Requiring New Analysis or Verification?	Do Prior Environmental Documents Mitigations Address/Resolve Impacts?
2.	Agriculture and Forestry Resources. Would the project:				
a.	Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	Setting pp. 3A.10-2, 3A.10-5, 3A.10-6 No Impact	No	No	NA
b.	Conflict with existing zoning for agricultural use, or a Williamson Act contract?	Setting pp. 3A.10-2 to 3A.10-4, 3A.10-6, 3A.10-7 Impacts 3A.10-3 and 3A.10-4	No	No	Yes
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))?	Not addressed, criterion was not part of Appendix G when EIR/EIS was certified	No	No	NA
d.	Result in the loss of forest land or conversion of forest land to non-forest land?	Not addressed, criterion was not part of Appendix G when EIR/EIS was certified	No	No	NA
e.	Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	Not addressed, criterion was not part of Appendix G when EIR/EIS was certified	No	No	NA

4.2.1 Discussion

No substantial change in the environmental and regulatory settings related to Agriculture and Forest Resources, described in EIR/EIS Section 3A.10 Land Use and Agricultural Resources – Land, has occurred since certification of the EIR/EIS in 2011 and the 2016 Addendum (See Appendix A). While the current application provides additional detail, it does not constitute a change in circumstances regarding agriculture and forest resources.

The project site does not change the development footprint and would not result in the development/conversion of additional agricultural land compared to those analyzed in the FPASP EIR/EIS or 2016 Addendum. No forest resources are present onsite. No new circumstances or project changes have occurred nor has any new information been found requiring new analysis or verification since the 2016 Addendum. Nothing about the project changes would alter the conclusions of the 2016 Addendum or would be different from the issues identified and analyzed in the FPASP EIR/EIS.

Mitigation Measures

None required.

CONCLUSION

No new circumstances have occurred nor has any new information been found requiring new analysis or verification. Therefore, the conclusions of the certified EIR/EIS remain valid and implementation of the project would not result in any new significant impacts associated with agriculture and forest resources.

4.3 AIR QUALITY

Environmental Issue Area		Where Impact Was Analyzed in the EIR/EIS.	Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	Any New Information Requiring New Analysis or Verification?	Do Prior Environmental Documents' Mitigations Address/Resolve Impacts?
3.	**Air Quality. Would the project:**				
a.	Conflict with or obstruct implementation of the applicable air quality plan?	Setting p. 3A.2-10 to 3A.2-10; Impact 3A.2-1 and Impact 3A.2-2	No.	Yes	Yes, but impact remains significant and unavoidable
b.	Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	Setting p. 3A.2-2 to 3A.2-8; Impact 3A.2-1, Impact 3A.2-2, and Impact 3A.2-3	No.	Yes	Yes, but impact remains significant and unavoidable
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)?	Cumulative analysis on p. 4-22 to 4-23	No.	Yes	Yes, but impact remains significant and unavoidable
d.	Expose sensitive receptors to substantial pollutant concentrations?	Setting p. 3A.2-7 to 3A.2-10 and 3A.2-20 to 3A.2-23; Impact 3A.2-4; and Cumulative analysis on p. 4-23 to 4-26	No.	Yes	Yes, mitigation has been updated.
e.	Create objectionable odors affecting a substantial number of people?	Setting p. 3A.2-9; Impact 3A.2-6	No.	Yes	Yes, mitigation has been updated.

4.3.1 Discussion

No substantial change in the environmental and regulatory settings related to Air Quality, described in EIR/EIS Sections 3A.2 and 3B.2 under Air Quality, has occurred since certification of the EIR in 2011 and the 2016 Addendum (See Appendix A). While the current application provides additional detail, it does not constitute a change in circumstances regarding air quality.

The project does not introduce any new air pollution sources or sensitive receptors. The refined land use map and lotting patterns reflect development that is substantially similar to the development assumptions analyzed in the FPASP EIR/EIS and 2016 Addendum. The modeling done for the 2016 Addendum was based on the Land Use Summary (Appendix A, Table 2-2). As described in Section 2.5.1, the Land Use Summary (Table 2-1) is substantially the same as what was analyzed previously. No additional units or commercial square footage would be developed and the same area of land would be developed. The applicant has identified that the Folsom Heights plan area would be developed in four phases, but the size and timing of these phases are consistent with the assumptions for grading and development intensity used in the air quality modeling in the 2016 Addendum (see Appendix A of the 2016 Addendum in Appendix A of this document). No new or substantially more severe air quality impacts would occur.

Mitigation Measures

The following mitigation measures were referenced in the FPASP EIR/EIS analysis and would continue to remain applicable if the project were approved.

- Mitigation Measure 3A.2-1a: Implement Measures to Control Air Pollutant Emissions Generated by Construction of On-Site Elements.
- Mitigation Measure 3A.2-1b: Pay Off-site Mitigation Fee to SMAQMD to Off-Set NO_X Emissions Generated by Construction of On-Site Elements.
- Mitigation Measure 3A.2-1c: Analyze and Disclose Projected PM_{10} Emission Concentrations at Nearby Sensitive Receptors Resulting from Construction of On-Site Elements.
- Mitigation Measure 3A.2-1e: Implement EDCAQMD-Recommended Measures for Controlling Fugitive PM10 dust During Construction of the Two Roadway Connections in El Dorado County.
- Mitigation Measure 3A.2-1f: Implement SMAQMD's Enhanced Exhaust Control Practices during Construction of all Off-site Elements.
- Mitigation Measure 3A.2-1g: Pay Off-site Mitigation Fee to SMAQMD to Off-Set NO_X Emissions Generated by Construction of Off-site Elements.
- Mitigation Measure 3A.2-1h: Analyze and Disclose Projected PM_{10} Emission Concentrations at Nearby Sensitive Receptors Resulting from Construction of Off-site Elements.
- Mitigation Measure 3A.2-2: Implement All Measures Prescribed by the Air Quality Mitigation Plan to Reduce Operational Air Pollutant Emissions.
- Mitigation Measure 3A.2-4a: Develop and Implement a Plan to Reduce Exposure of Sensitive Receptors to Construction-Generated Toxic Air Contaminant Emissions.
- Mitigation Measure 3A.2-4b: Implement Measures to Reduce Exposure of Sensitive Receptors to Operational Emissions of Toxic Air Contaminants.
- Mitigation Measure 3A.2-5: Implement a Site Investigation to Determine the Presence of NOA and, if necessary, Prepare and Implement an Asbestos Dust Control Plan.
- Mitigation Measure 3A.2-6: Implement Measures to Control Exposure of Sensitive Receptors to Operational Odorous Emissions.

As described in the 2016 Addendum, with implementation of these measures, air quality impacts would be reduced, but some impacts would remain significant and unavoidable (as shown above in the summary table and described in the 2016 Addendum).

CONCLUSION

As required by many of the air quality mitigation measures adopted as part of the FPASP, the 2016 Addendum provided additional project-level air quality analysis. However, the 2016 Addendum found that the Folsom Heights SPA was consistent with the FPASP. No new circumstances have occurred nor has any new information been found requiring new analysis or verification. The conclusions of the FPASP EIR/EIS remain valid and no additional analysis is required.

4.4 BIOLOGICAL RESOURCES

Environmental Issue Area		Where Impact Was Analyzed in the EIR/EIS.	Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	Any New Information Requiring New Analysis or Verification?	Do Prior Environmental Documents Mitigations Address/Resolve Impacts?
4.	**Biological Resources. Would the project:**				
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 Wildlife or U.S. Fish and Wildlife Service?	Setting pp. 3A.3-7 to 3A.3-21 Impacts 3A.3-2 and 3A.3-3	No	No	Yes, mitigation has been updated
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?	Setting pp. 3A.3-21 to 3A.3-26 Impact 3A.3-4	No	No	Yes, mitigation has been updated
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?	Setting pp. 3A.3-5 to 3A.3-7, 3A.3-18 to 3A.3-21 Impact 3A.3-1	No	No	Yes, mitigation has been updated
d.	Interfere substantially with the movement of any native resident or migratory fish and wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	Setting p. 3A.3-7 Impact 3A.3-6	No	No	Yes, mitigation has been updated
e.	Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.	Setting pp. 3A.3-23 to 3A.3-26 Impact 3A.3-5	No	No	Yes, mitigation has been updated
f.	Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	Impact 3A.3-7	No	No	NA
g.	Have the potential to cause a commercial and/or recreational fishery to drop below self-sustaining levels?	Setting p. 3A.3-17 No Impact	No	No	NA

4.4.1 Discussion

No substantial change in the environmental and regulatory settings related to biological resources has occurred since the 2016 Addendum (See Appendix A). While the current application provides additional detail regarding the lotting pattern, phasing, and provision of utilities, no additional land area would be developed as a result of the project. Further, the biological setting was reviewed and updated as part of the 2016 Addendum and it has not changed since that time. Nothing about the project changes would alter the biological conclusions of the 2016 Addendum or would be different from the issues identified and analyzed in the FPASP EIR/EIS. No new or substantially more severe biological impacts would occur. The project would continue to be subject to the mitigation measures identified and/or refined in the 2016 Addendum, which are presented below. As described in the 2016 Addendum, with implementation of these measures, biological impacts would be reduced to a less-than-significant level. No new circumstances or project changes have occurred nor has any new information been found requiring new analysis or verification. Therefore, the conclusions of the EIR/EIS remain valid and approval of the project would not result in new or substantially more severe significant impacts to biological resources.

Mitigation Measures

The following mitigation measures were referenced in the FPASP EIR/EIS analysis and updated in the 2016 Addendum and would continue to remain applicable if the project were approved.

- Mitigation Measure 3A.3-1a: Mitigation for erosion impacts.
- Mitigation Measure 3A.3-1b: Implement Clean Water Act Section 404 Permits and Section 401 Water Quality Certifications.
- Mitigation Measure 3A.3-4a: Implement Section 1602 Master Streambed Alteration Agreement.
- Mitigation Measure 3A.3-4b: Valley needlegrass grassland avoidance and minimization measures.
- Mitigation Measure 4.4-1: Conduct environmental awareness training for construction employees.
- Mitigation Measure 4.4-4: Conduct preconstruction Swainson's hawk and other raptor surveys.
- Mitigation Measure 4.4-5: Prepare and implement Swainson's hawk mitigation plan.
- Mitigation Measure 4.4-6: Conduct preconstruction burrowing owl survey.
- Mitigation Measure 4.4-7: Preconstruction nesting bird survey.

As described in the 2016 Addendum, with implementation of these measures, biological resources impacts would be reduced to a less-than-significant level.

CONCLUSION

Since the EIR/EIS was certified and the 2016 Addendum, no new circumstances have occurred nor has any new information been found requiring new analysis or verification. Therefore, the findings of the certified EIR/EIS remain valid and no further analysis is required.

4.5 CULTURAL RESOURCES

Environmental Issue Area	Where Impact Was Analyzed in the EIR/EIS.	Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	Any New Information Requiring New Analysis or Verification?	Do Prior Environmental Documents Mitigations Address/Resolve Impacts?
5. Cultural Resources. Would the project:				
a. Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	Setting pp. 3A.5-2 to 3B.5-5 Impact 3A.5-1	No	No	Yes
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	Setting pp. 3A.5-1 to 3B.5-3 Impacts 3A.5-1 and 3A.5-2	No	No	Yes
c. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	Setting pp. 3A.7-13 to 3A.7-17 Impact 3A.7-10	No	No	Yes
d. Disturb any human remains, including those interred outside the formal cemeteries?	Setting p. 3A.5-13 to 3A.5-15 Impact 3A.5-3	No	No	Yes
e. Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe?	Setting pp. 3A.5-1 to 3A.5-2; pp 3A.5-8 to 3A.5-16 Impacts 3A.5-1, 3A.5-2, and 3A.5-3	No	No	Yes

4.5.1 Discussion

No substantial change in the environmental and regulatory settings related to cultural resources has occurred since the 2016 Addendum (See Appendix A). While the current application provides additional detail regarding the lotting pattern, phasing, and provision of utilities, no additional land area would be developed as a result of the project. Further, the cultural setting was reviewed and updated as part of the 2016 Addendum, including addressing impacts to Tribal Cultural Resources, and it has not changed since that time. Nothing about the project changes would alter the cultural resources conclusions of the 2016 Addendum or would be different from the issues identified and analyzed in the FPASP EIR/EIS. No new or substantially more severe cultural resources impacts would occur. The project would continue to be subject to the mitigation measures identified and/or refined in the 2016 Addendum, which are presented below.

Because the Folsom Heights SPA sought a specific plan amendment to the FPASP, the City was required to initiate consultation under SB 18. On March 7, 2016, the City requested an SB 18 contact list from the California Native American Heritage Commission (NAHC). On March 23, 2016, the NAHC responded with a list of eight California Native American tribes and individuals who had notified the NAHC of their desire to consult under SB 18 in the vicinity of the Project. On March 23, 2016, the City mailed SB 18 notification letters to the eight individuals, Rhonda Morningstar Pope (Buena Vista Rancheria), Don Ryberg (T’si-Akim Maidu), Yvonne Miller (Ione Band of Miwok Indians), Gene Whitehouse (United Auburn Indian Community of the Auburn Rancheria), Cosme Valdez (Nashville-El Dorado Miwok), Raymond Hitchcock (Wilton Rancheria), Nicholas Fonseca (Shingle Springs Band of Miwok Indians), and Grayson Coney (T’si-Akim Maidu), offering them an opportunity to consult within the 90-day comment period, scheduled to end on June 21, 2016. The

City did not receive any requests for consultation. As the Folsom Heights tentative map project does not contain a specific or general plan amendment, no additional consultation notice was required or sent.

Several cultural resource inventories were completed for the Folsom Heights area, in combination with consultation with USACE and SHPO, as required by the FPASP EIS/EIR mitigation measures (as updated in the 2016 Addendum). In previous consultations, SHPO concurred with USACE's definition of the undertaking, the Area of Potential Effects (APE), the evaluation plan, and the evaluations of potential historic properties for this undertaking. On September 23, 2015 SHPO concurred that the two cultural resources identified within the APE (P-34-1556 and P-34-4923) were not eligible for listing on the National Register of Historic Places. In November 2015, SHPO concurred with USACE's finding that the Folsom Heights development would not affect historic properties within the Folsom Heights area (SHPO 2015).

In 2016, ECORP Consulting, Inc. was retained to conduct a cultural resources inventory for the proposed Folsom Height Off-sites Project (Off-sites Project) associated with the Folsom Heights area. The Off-sites Project consists of ±2.63 acres of four discontinuous areas located north of White Rock Road and west of the Sacramento and El Dorado county line, within El Dorado County. These off-site areas are the locations of proposed utility connections that will be necessary for the construction of Folsom Heights and were not known at the time of the preparation of the on-site reports.

Although these off-site areas are situated outside of the FPASP area, this supplemental inventory was carried out in compliance with the Historic Properties Management Plan for FPASP, which serves to implement the First Amended Programmatic Agreement between the US Army Corps of Engineers, California State Historic Preservation Officer, and City of Folsom (2013) for compliance with Section 106 of the National Historic Preservation Act of 1966, as amended, and the California Environmental Quality Act.

The inventory included a records search, literature review, and field survey. No previously recorded cultural resources were located with the Area of Potential Effects (APE) of the Off-sites Project. The records search results indicated that no previous cultural resources studies have been conducted within the Off-sites Project APE; therefore, a field survey was required. As a result of the field survey, no cultural resources were identified.

No cultural resources were identified at the four Off-sites Project locations as a result of the records search and field survey. In consultation with SHPO, the Folsom Heights development previously received a Finding of No Historic Properties Affected. The Off-sites Project will not affect that finding and the Finding of No Historic Properties Affected remains accurate for the Folsom Heights development and the Off-sites Project (ECORP 2016).

USACE sent a letter to SHPO on February 10, 2017, regarding the extension of the FPASP APE to cover the Off-sites Project. USACE found that the cultural resource inventory was completed consistent with the requirements of the FAPA and requested SHPO concurrence. SHPO concurrence that no historic properties would be affected in the expanded APE was received on March 23, 2017.

Nothing about the project changes or ongoing consultations would alter the conclusions of the 2016 Addendum or would be different from the issues identified and analyzed in the FPASP EIR/EIS.

Mitigation Measures

The following mitigation measures were referenced in the FPASP EIR/EIS analysis and would continue to remain applicable if the project were approved.

- Mitigation Measure 3A.7-10: Conduct construction personnel education, stop work if paleontological resources are discovered, assess the significance of the find, and prepare and implement a recovery plan as required.

In addition to the mitigation measure in the EIR/EIS (listed above), the following mitigation measures from the 2016 Addendum replaced what was in the EIR/EIS for this project.

- Mitigation Measure 3A.5-1a: Comply with the Programmatic Agreement.
- Mitigation Measure 3A.5-1b: Cultural resource inventory, treatment, and evaluation mitigation.
- Mitigation Measure 3A.5-2: Cultural resource construction training and stop work mitigation.
- Mitigation Measure 3A.5-3: Human remains mitigation.

As described in the 2016 Addendum, with implementation of these measures, cultural resources impacts would be reduced to a less-than-significant level.

CONCLUSION

No new significant or substantially more severe cultural resources impacts would occur with the project. Therefore, the findings of the certified EIR/EIS remain valid and no further analysis is required.

4.6 GEOLOGY AND SOILS

	Environmental Issue Area	Where Impact Was Analyzed in the EIR/EIS.	Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	Any New Information Requiring New Analysis or Verification?	Do Prior Environmental Documents Mitigations Address/Resolve Impacts?
6.	**Geology and Soils. Would the project:**				
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 or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42. ii. Strong seismic ground shaking? iii. Seismic-related ground failure, including liquefaction? iv. Landslides?	Setting pp. 3A.7-3 to 3A.7-5, 3A.7-18, 3A.7-19 Impacts 3A.7-1, 3A.7-2	No	No	Yes
b.	Result in substantial soil erosion or the loss of topsoil?	Setting pp. 3A.7-5 to 3A.7-6 Impact 3A.7-3	No	No	Yes
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?	Setting p. 3A.7-6 Impacts 3A.7-4, 3A.7-5	No	No	Yes
d.	Be located on expansive soil, as defined in Table 18- 1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	Setting p. 3A.7-11 Impact 3A.7-6	No	No	Yes
e.	Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	Setting p. 3A.7-11 Impact 3A.7-7	No	No	Yes

4.6.1 Discussion

No substantial change in the environmental and regulatory settings related to geology and soils, described in the EIR/EIS Section 3A.7 Geology, Soils, Mineral, and Paleontological Resources – Land, has occurred since certification of the EIR/EIS and the 2016 Addendum (See Appendix A). While the current application provides additional detail, regarding the lotting pattern, phasing, and provision of utilities, no changes to the geologic substructures or setting has occurred. The same land area would be developed. Further, the geologic setting was reviewed and updated as part of the 2016 Addendum, and it has not changed since that time. Nothing about the project changes would alter the conclusions of the 2016 Addendum or would be different from the issues identified and analyzed in the FPASP EIR/EIS.

Mitigation Measures

The following mitigation measures were referenced in the FPASP EIR/EIS analysis and would continue to remain applicable if the project were approved.

- Mitigation Measure 3A.7-1a: Prepare site-specific geotechnical report per CBC requirements and implement appropriate recommendations.
- Mitigation Measure 3A.7-1b: Monitor earthwork during earthmoving activities.
- Mitigation Measure 3A.7-3: Prepare and implement the appropriate grading and erosion control plan.
- Mitigation Measure 3A.7-4: Prepare a seismic refraction survey and obtain appropriate permits for all onsite and offsite elements East of Old Placerville Road.
- Mitigation Measure 3A.7-5: Divert seasonal water flows away from building foundations.

As described in the 2016 Addendum, with implementation of these measures, geology and soil impacts would be reduced to a less-than-significant level.

CONCLUSION

No new circumstances or project changes have occurred nor has any new information been identified requiring new analysis or verification. Therefore, the conclusions of the EIR/EIS remain valid and approval of the project would not result in new or substantially more severe significant impacts to geology and soils.

4.7 GREENHOUSE GAS EMISSIONS

Environmental Issue Area	Where Impact Was Analyzed in the EIR/EIS.	Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	Any New Information Requiring New Analysis or Verification?	Do Prior Environmental Documents' Mitigations Address/Resolve Impacts?
7. Greenhouse Gas Emissions. Would the project:				
a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	Environmental Setting p. 3A.4-1 to 3A.4-4 and updated below; Regulatory Setting p. 3A.4-4 to 3A.4-9 and updated below; Impact 3A.4-1 and Impact 3A.4-2.	No	No	Yes
b. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	Same as above.	No	No	Yes

4.7.1 Discussion

No substantial change in the environmental and regulatory settings related to greenhouse gases, as updated in the 2016 Addendum (See Appendix A), has occurred. While the current application provides additional detail regarding the lotting pattern, phasing, and provision of utilities, no changes to the area to the type and intensity of development would occur. The refined land use map and lotting patterns reflect development that is substantially similar to the development assumptions analyzed in the FPASP EIR/EIS and 2016 Addendum. No additional units would be developed and the same area of land would be developed. The applicant has identified that the Folsom Heights plan area would be developed in four phases, but the size and timing of these phases are consistent with the assumptions for grading and development intensity used in the GHG modeling in the 2016 Addendum (see Appendix A of the 2016 Addendum in Appendix A of this document). Nothing about the project changes would alter the conclusions of the 2016 Addendum or would be different from the issues identified and analyzed in the FPASP EIR/EIS.

Mitigation Measures

The following mitigation measures were referenced in the FPASP EIR/EIS analysis and would continue to remain applicable if the project were approved.

- Mitigation Measure 3A.4-1: Implement Additional Measures to Control Construction-Generated GHG Emissions.
- Mitigation Measure 3A.4-2a: Implement Additional Measures to Reduce Operational GHG Emissions.
- Mitigation Measure 3A.4-2b: Participate in and Implement an Urban and Community Forestry Program and/or Off-Site Tree Program to Off-Set Loss of On-Site Trees.

As described in the 2016 Addendum, with implementation of these measures, greenhouse gas impacts would be reduced to a less-than-significant level.

CONCLUSION

No new circumstances or project changes have occurred nor has any new information been identified requiring new analysis or verification. Therefore, the conclusions of the EIR/EIS remain valid and approval of the project would not result in new or substantially more severe significant impacts to greenhouse gases.

4.8 HAZARDS AND HAZARDOUS MATERIALS

	Environmental Issue Area	Where Impact Was Analyzed in the EIR	Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	Any New Information Requiring New Analysis or Verification?	Do Prior Environmental Documents Mitigations Address/Resolve Impacts?
8.	**Hazards and Hazardous Materials. Would the project:**				
a.	Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	Setting pp. 3A.8-11, 3A.8-12 Impact 3A.8-1	No	No	NA
b.	Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	Setting p. 3A.8-13 Impact 3A.8-2	No	No	Yes
c.	Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	Setting p. 3A.8-13 Impact 3A.8-2	No	No	Yes
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?	Setting p. 3A.8-2 to 3A.8-9 Impact 3A.8-3	No	No	Yes
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?	Setting p. 3A.8-18 No Impact	No	No	NA
f.	For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working on the project area?	Setting pp. 3A.8-18, 3A.8-19 No Impact	No	No	NA
g.	Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	Setting p. 3A.8-14 Impact 3A.8-4	No	No	Yes
h.	Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	Setting pp. 3A.8-18, 3A.8-19 No Impact	No	No	NA
i.	Create a significant hazard to the public through use of explosive materials in grading or earth-moving activities?	Setting pp.3A.8-13, 3A.8-14 Impact 3A.8-5	No	No	Yes
j.	Expose project residents to excessive electrical or magnetic fields?	Setting pp. 3A.8-7, 3A.8-11, 3A.8-12, 3A.8-13, 3A.8-15 Impact 3A.8-6	No	No	Yes
k.	Create public health hazards from increased exposure to mosquitoes by providing substantial new habitat for mosquitoes or other vectors?	Setting pp. 3A.8-10, 3A.8-15 Impact 3A.8-7	No	No	Yes

4.8.1 Discussion

No substantial change in the environmental and regulatory settings related to hazards and hazardous materials, described in EIR/EIS Section 3A.8 Hazards and Hazardous Materials – Land, has occurred since certification of the EIR/EIS in 2011 and the 2016 Addendum (See Appendix A). While the current application provides additional detail regarding the lotting pattern, phasing, and provision of utilities, no changes to the environmental setting or the types of activities that would be implemented at the site has occurred. The same land area would be developed. Further, the hazardous material setting was reviewed and updated as part of the 2016 Addendum, and it has not changed since that time. Nothing about the project changes would alter the conclusions of the 2016 Addendum or would be different from the issues identified and analyzed in the FPASP EIR/EIS. No new or substantially more severe hazardous materials impacts would occur.

Mitigation Measures

The following mitigation measures were referenced in the FPASP EIR/EIS analysis and would continue to remain applicable if the project were approved.

- Mitigation Measure 3A.8-5: Prepare and implement a blasting safety plan in consultation with a qualified blaster.
- Mitigation Measure 3A.8-7: Prepare and implement a vector control plan in consultation with the Sacramento-Yolo Mosquito and Vector Control District.

As described in the 2016 Addendum, with implementation of these measures, hazards and hazardous materials impacts would be reduced to a less-than-significant level.

CONCLUSION

No new circumstances or project changes related to hazards and hazardous materials have occurred nor has any new information been identified requiring new analysis or verification. Therefore, the conclusions of the EIR/EIS remain valid and approval of the project would not result in new or substantially more severe significant impacts. No additional analysis is required.

4.9 HYDROLOGY AND WATER QUALITY

	Environmental Issue Area	Where Impact Was Analyzed in the EIR/EIS.	Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	Any New Information Requiring New Analysis or Verification?	Do Prior Environmental Documents Mitigations Address/Resolve Impacts?
9.	**Hydrology and Water Quality. Would the project:**				
a.	Violate any water quality standards or waste discharge requirements?	Setting pp. A.9-10 to 3A.9-23 Impacts 3A.9-1 and 3A.9-3	No	No	Yes
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 (e.g., 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?	Setting pp. 3A.9-5 to 3A.9-6 Impact 3A.9-6	No	No	Yes
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?	Setting pp. 3A.9-1 to 3A.9-5 Impacts 3A.9-1 and 3A.9-3	No	No	Yes
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?	Setting pp. 3A.9-1 to 3A.9-5 Impacts 3A.9-2	No	No	Yes
e.	Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?	Setting pp. 3A.9-1 to 3A.9-5 Impacts 3A.9-1 and 3A.9-3	No	No	Yes
f.	Otherwise substantially degrade water quality?	Setting pp. 3A.9-6 to 3A.9-9 Impacts 3A.9-1 and 3A.9-3	No	No	Yes
g.	Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	Setting pp. 3A.9-5 to 3A.9.1-7 Impact 3A.9-5	No	No	Yes
h.	Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	Setting pp. 3A.9-5 to 3A.9.1-7 Impact 3A.9-5	No	No	Yes
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?	Setting p. 3A.9-20 Impact 3A.9-4	No	No	Yes
j.	Inundation by seiche, tsunami, or mudflow?	Setting pp. 3A.7-5 No Impact	No	No	NA

4.9.1 Discussion

No substantial change in the environmental and regulatory settings related to hydrology and water quality, described in EIR/EIS Section 3A.9 Hydrology and Water Quality – Land and 2016 Addendum Section 4.9 Hydrology and Water Quality (see Appendix A), has occurred since certification of the EIR/EIS in 2011 and 2016 Addendum. While the current application provides additional detail regarding the lotting pattern, phasing, and provision of utilities (e.g., water and wastewater), no changes to the environmental setting, or the types of activities that would be implemented at the site has occurred. The same land area would be developed in the same pattern over the site. No changes to the proposed drainage facilities are proposed. Further, the hydrologic setting was reviewed and updated as part of the 2016 Addendum, and it has not changed since that time. Nothing about the project changes would alter the conclusions of the 2016 Addendum or would be different from the issues identified and analyzed in the FPASP EIR/EIS. No new or substantially more severe hydrology impacts would occur.

Mitigation Measures

The following mitigation measures were referenced in the FPASP EIR/EIS analysis and would continue to remain applicable if the project were approved.

- Mitigation Measure 3A.9-1: Acquire appropriate regulatory permits and prepare and implement SWPPP and BMPs.
- Mitigation Measure 3A.9-2: Prepare and submit final drainage plans and implement requirements contained in those plans.
- Mitigation Measure 3A.9-3: Develop and implement a BMP and water quality maintenance plan.
- Mitigation Measure 3A.9-4: Inspect and evaluate existing dams within and upstream of the project site and make improvements if necessary.

As described in the 2016 Addendum, with implementation of these measures, hydrology and water quality impacts would be reduced to a less-than-significant level.

CONCLUSION

No new circumstances or project changes have occurred nor has any new information been found requiring new analysis or verification. Therefore, the conclusions of the EIR/EIS remain valid and approval of the proposed amendment to the FPASP would not result in new or substantially more severe significant impacts to hydrology and water quality.

4.10 LAND USE AND PLANNING

	Environmental Issue Area	Where Impact Was Analyzed in the EIR/EIS.	Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	Any New Information Requiring New Analysis or Verification?	Do Prior Environmental Documents Mitigations Address/Resolve Impacts?
10.	**Land Use and Planning. Would the project:**				
a.	Physically divide an established community?	Setting p. 3A.10-1 No Impact	No	No	NA
b.	Conflict with any applicable land use plan, policy, or regulation 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 an environmental effect?	Setting pp. 3A.10-4 to 3A.10-28 Impacts 3A.10-1 and 3A.10-2	No	No	NA
c.	Conflict with any applicable habitat conservation plan or natural community conservation plan?	Impact 3A.3-7	No	No	NA

4.10.1 Discussion

No substantial change in the environmental and regulatory settings related to land use and planning, described in EIR/EIS Section 3A.10 under Land Use and Agricultural Resources – Land and Section 3A.3 under Biological Resources – Land, has occurred since certification of the EIR/EIS in 2011 and the 2016 Addendum (See Appendix A). The current application provides additional detail regarding the lotting pattern, phasing of development, and provision of utilities. The project applicant is seeking a tentative map. Overall, the lotting pattern is consistent with the land use patterns, number of units, and commercial square footage estimates.

The project would be developed in four phases (see Exhibit 2-5). While multiple access points would be provided at full buildout of the plan area, the first phase would route initial vehicle traffic through existing neighborhoods to the east of the site in El Dorado Hills. The project would connect its internal roadways to the existing Stonebriar Drive that would provide access to an existing neighborhood in El Dorado County. This roadway is currently in place and would not require any modifications. (see Section 4.16 Transportation/Traffic). Once Phase 2 of the project is constructed additional access points to and from the development would be provided along Easton Valley Parkway and Empire Ranch Road such that less traffic from the development would access nearby neighborhoods. This phasing plan is consistent with the land use plan adopted for the site and would not result in other impacts related to division of an established community. No new significant land use impacts would occur.

Mitigation Measures

None required.

CONCLUSION

No new circumstances or project changes have occurred nor has any new information been identified requiring new analysis or verification. Therefore, the conclusions of the EIR/EIS remain valid and approval of the project would not result in new or substantially more severe significant impacts to land use and planning.

4.11 MINERAL RESOURCES

	Environmental Issue Area	Where Impact Was Analyzed in the EIR/EIS.	Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	Any New Information Requiring New Analysis or Verification?	Do Prior Environmental Documents Mitigations Address/Resolve Impacts?
11.	Mineral Resources. Would the Project:				
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?	Setting pp. 3A.7-12 and 3A.7-13 Impacts 3A.7-8, 3A.7-9	No	No	Yes
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?	Setting pp. 3A.7-12 and 3A.7-13 Impacts 3A.7-8, 3A.7-9	No	No	NA

4.11.1 Discussion

No substantial change in the environmental and regulatory settings related to mineral resources, described in EIR/EIS Section 3A.7 Geology, Soils, Minerals, and Paleontological Resources – Land has occurred since certification of the EIR in 2011 and the 2016 Addendum (See Appendix A). While the current application provides additional detail regarding the lotting pattern, phasing, and provision of utilities (e.g., water and wastewater), no changes to the environmental setting has occurred. The same land area would be developed in the same pattern over the site. Nothing about the project changes would alter the conclusions of the 2016 Addendum or would be different from the issues identified and analyzed in the FPASP EIR/EIS. No new or substantially more severe mineral resources impacts would occur.

Mitigation Measures

None required.

CONCLUSION

No new circumstances or project changes have occurred nor has any new information been found requiring new analysis or verification. Therefore, the conclusions of the EIR/EIS remain valid and approval of the project would not result in new or substantially more severe significant impacts to mineral resources.

4.12 NOISE

Environmental Issue Area	Where Impact Was Analyzed in the DEIR/DEIS.	Any New Circumstances Involving New or Substantially More Severe Significant Impacts?	Any Substantially Important New Information Requiring New Analysis or Verification?	Do Prior Environmental Documents' Mitigations Address/Resolve Impacts?
12. Noise. Would the project result in:				
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?	Setting p. 3A.11-12 to 3A.11-17 Impacts 3A.11-4, 3A.11-5, and 3A.11-7	No	No	Yes, but remains significant and unavoidable
b. Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	Setting p. 3A.11-4 Impact 3A.11-3	No	No	NA
c. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	Setting pp. 3A.11-5 to 3A.11-11 Impacts 3A.11-4, 3A.11-5, and 3A.11-7	No	No	Yes, but remains significant and unavoidable
d. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	Setting pp. 3A.11-5 to 3A.11-11 Impact	No	No	NA
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?	Setting pp. 3A.11-5, 3A.11-10, 3A.11-11 Impact 3A.11-6 overflight	No	No	NA
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?	Setting pp. 3A.11-5, 3A.11-10, 3A.11-11 No Impact	No	No	NA

4.12.1 Discussion

No substantial change in the environmental and regulatory settings related to noise and vibration, described in FPASP EIR/EIS Sections 3A.11 Noise – Land, has occurred since certification of the EIR in. No new noise sources have been introduced near the planning area since the FPASP EIR/EIS was prepared and since the 2016 Addendum (See Appendix A). While the current application provides additional detail regarding the lotting pattern, phasing, and provision of utilities, no changes to the environmental setting, or the types of activities that would be implemented at the site has occurred. The same land area would be developed in the same pattern over the site. Further, the noise setting was reviewed and updated as part of the 2016 Addendum, and it has not changed since that time.

In March 2017, Bollard Acoustical Consultants, Inc. completed a site-specific acoustical analysis. This analysis was in response to a mitigation measure in the FPASP EIS/EIR. At the tentative map stage, Mitigation Measure 3A.11-4 requires the applicant to conduct a site-specific acoustical analysis to determine predicted roadway noise impacts attributable to the project and provide measures that would reduce project-related noise impacts. The Environmental Noise Assessment (Bollard 2017) provides a detailed noise analysis and associated measures (window upgrades and noise barriers). While the analysis and suggested measures provide additional detail on the Folsom Heights development, the noise barriers and window upgrades are consistent with the potential measures discussed/analyzed in the EIS/EIR.

Nothing about the project changes would alter the conclusions of the 2016 Addendum or would be different from the issues identified and analyzed in the FPASP EIR/EIS. Mitigation Measures

A portion of the Folsom Heights Development project site will be exposed to future traffic noise levels in excess of the City of Folsom exterior noise level criteria. In addition, a portion of existing residences adjacent to the project site will be exposed to elevated construction-related noise levels resulting from the project.

- Mitigation Measure 4.12-1: In order to achieve compliance with the City of Folsom exterior and interior noise level standards, and to address construction-related noise impacts at existing residences adjacent to the project site, the following specific noise mitigation measures are required:

  - Traffic noise barriers shall be constructed along selected lots adjacent to White Rock Road and future Empire Ranch Road at the locations indicated on Exhibits 4.12-1 and 4.12-2. Noise barrier heights of 6-feet tall relative to backyard elevation would be sufficient to ensure compliance with City of Folsom 60 dB Ldn noise level standard. Masonry is considered a suitable material for the traffic noise barriers. To preserve views, all or a portion of the recommended noise barriers could also be constructed of glass, provided the glass meets a minimum sound transmission class (STC) rating of 20. If glass is used as a barrier material, the height of the barriers required to achieve satisfaction with City noise standards would remain at the recommended height relative to backyard elevation (6 feet). Other materials may be acceptable but should be either approved by the City or reviewed by an acoustical consultant prior to use.

  - All second-floor bedroom windows of selected lots adjacent to White Rock Road and future Empire Ranch Road from which the roadway is visible shall be upgraded to a minimum Sound Transmission Class (STC) rating of 32 in order to comply with the City of Folsom 45 dB Ldn interior noise level standard with a margin of safety. Exhibits 4.12-1 and 4.12-2 show the specific lots where upgrades are required.

  - Mechanical ventilation (air conditioning) shall be provided for all residences in this development to allow the occupants to close doors and windows as desired to achieve compliance with the applicable interior noise level criteria.

The following mitigation measures were referenced in the FPASP EIR/EIS analysis and would continue to remain applicable if the project were approved.

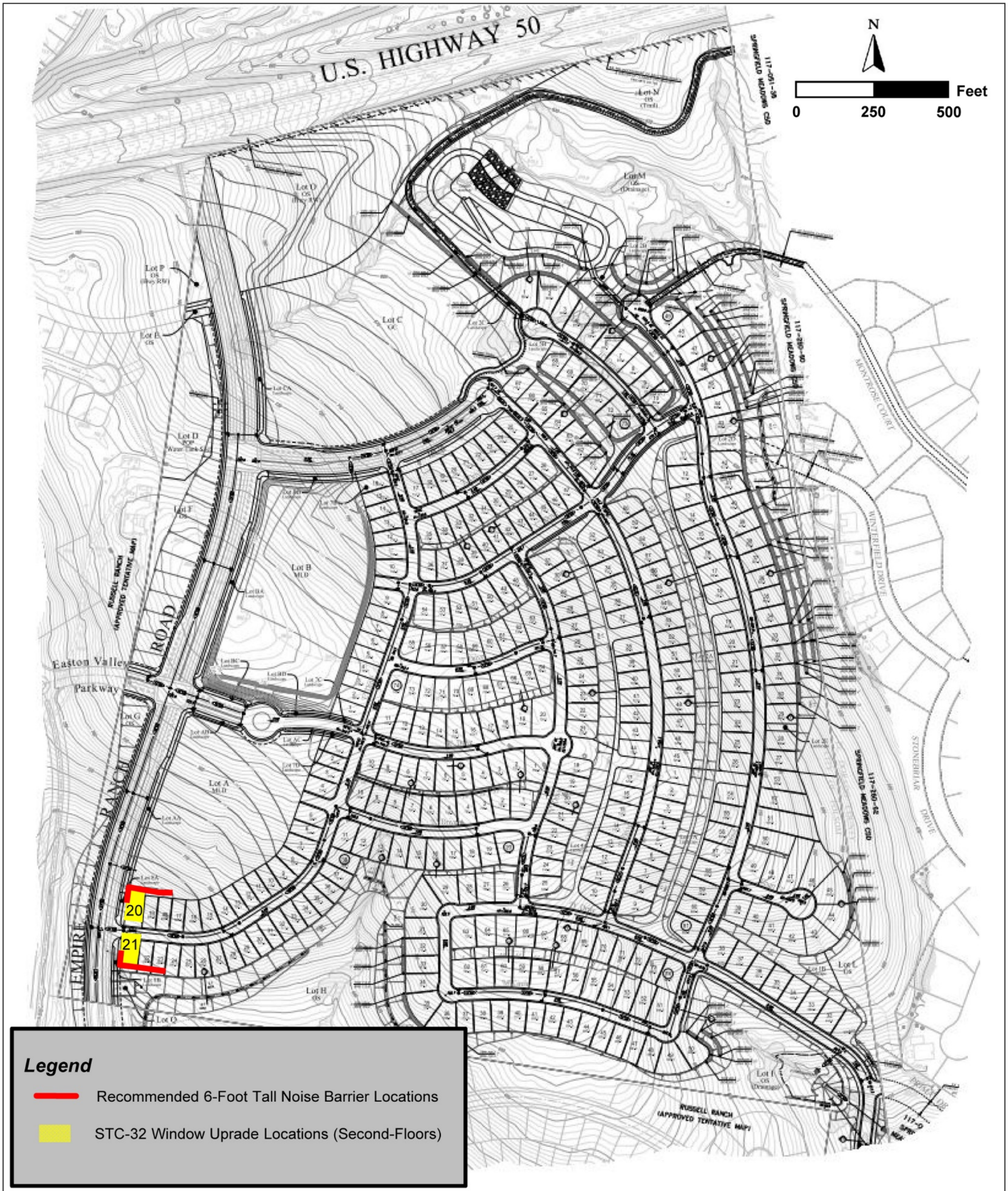
- Mitigation Measure 3A.11-1: Implement Noise-Reducing Construction Practices, Prepare and Implement a Noise Control Plan, and Monitor and Record Construction Noise near Sensitive Receptors.

- Mitigation Measure 3A.11-3: Implement Measures to Prevent Exposure of Sensitive Receptors to Groundborne Noise or Vibration from Project Generated Construction Activities.

- Mitigation Measure 3A.11-4: Implement Measures to Prevent Exposure of Sensitive Receptors to Increases in Noise from Project-Generated Operational Traffic on Off-site and On-Site Roadways.

- Mitigation Measure 3A.11-5: Implement Measures to Reduce Noise from Project-Generated Stationary Sources.

The EIR/EIS concluded that the impacts of roadway noise would remain significant and unavoidable even with implementation of recommended mitigation. However, with the addition of site-specific noise mitigation measures as described in Mitigation Measure 4.12-1, the potential impacts related to roadway noise would be reduced to less than significant.



Source: BOLLARD Acoustical Consultants 2017

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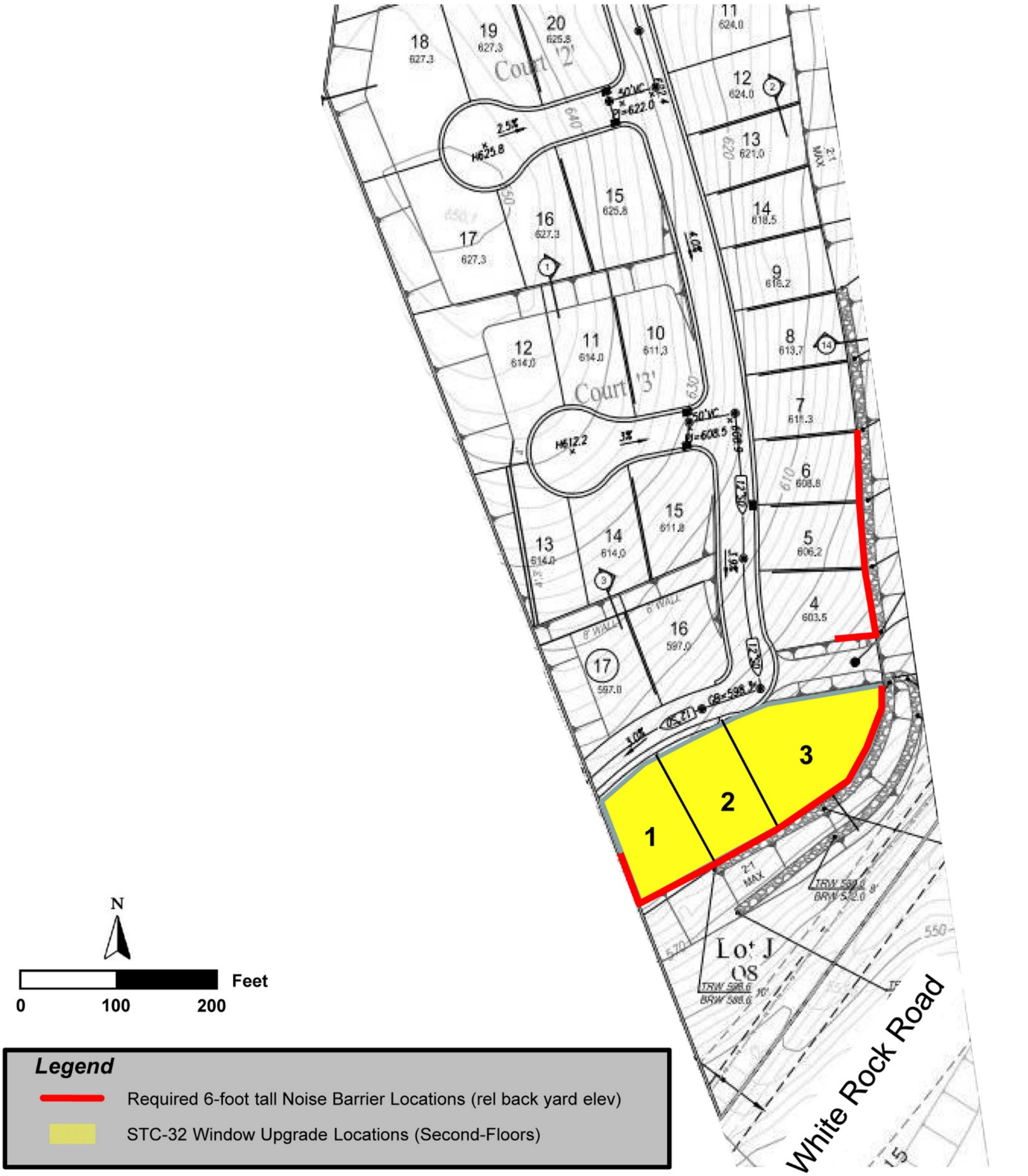
Exhibit 4.12-1 **Main Portion of Site Plan and Required Noise Mitigation Measures**

ASCENT ENVIRONMENTAL



Source: BOLLARD Acoustical Consultants 2017

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Exhibit 4.12-2 Southern Portion of Site Plan and Required Noise Mitigation Measures

CONCLUSION

No new circumstances or project changes have occurred nor has any substantially important new information been found requiring new analysis or verification. Therefore, the conclusions of the FPASP EIR/EIS remain valid and approval of the project would not result in new or substantially more severe significant noise impacts. No further analysis is required.

4.13 POPULATION AND HOUSING

Environmental Issue Area	Where Impact Was Analyzed in the EIR/EIS.	Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	Any New Information Requiring New Analysis or Verification?	Do Prior Environmental Documents Mitigations Address/Resolve Impacts?
13. Population and Housing. Would the project:				
a. Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	Setting pp. 3A.13-1 to 3A.13-6 Impacts 3A.13-1, 3A.13-2	No	No	NA
b. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	Impact 3A.13-3	No	No	NA
c. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	Impact 3A.13-3	No	No	NA

4.13.1 Discussion

No substantial change in the regulatory settings related to population and housing, described in EIR/EIS Section 3A.13 under Population, Employment and Housing – Land, has occurred since certification of the EIR in 2011 and the 2016 Addendum (See Appendix A). While the current application provides additional detail regarding the lotting pattern, phasing, and provision of utilities (e.g., water and wastewater), no changes to the environmental setting, or the types of activities or housing that would be implemented at the site has occurred.

The tentative subdivision map identifies that overall residential units have remained the same as that approved with the 2016 Addendum. Population is estimated based on an average number of persons per dwelling unit and differs between multi-family and single-family units. Because of this, there is a slight increase in estimated population (+2 persons). However, because there is no increase in the number of units and a difference of two persons (0.1 percent) falls within a standard deviation of error, this does not constitute a substantial change in growth compared to that evaluated in the EIR/EIS and 2016 Addendum. No new significant population and housing impacts would occur.

Mitigation Measures

None required.

CONCLUSION

No new circumstances or project changes have occurred nor has any new information been found requiring new analysis or verification. Therefore, the conclusions of the EIR/EIS remain valid and approval of the project would not result in new or substantially more severe significant impacts to population and housing.

4.14 PUBLIC SERVICES

Environmental Issue Area	Where Impact Was Analyzed in the EIR/EIS.	Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	Any New Information Requiring New Analysis or Verification?	Do Prior Environmental Documents Mitigations Address/Resolve Impacts?
14. Public Services.				
a. 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, to maintain acceptable service ratios, response times or other performance objectives for any public services:				
i. Fire protection?	Setting pp. 3A.14-1 to 3A.14-2 Impacts 3A.14-1, 3A.14-2, 3A.14-3	No	No	Yes
ii. Police protection?	Setting pp. 3A.14-2 to 3A.14-3 Impact 3A.14-4	No	No	NA
iii. Schools?	Setting pp. 3A.14-3 to 3A.14-5 Impacts 3A.14-5, 3A.14-6	No	No	Yes
iv. Parks?	See below in Section 4.15, Recreation			

4.14.1 Discussion

No substantial change in the environmental and regulatory settings related to public services, described in EIR/EIS Sections 3A.14 under Public Services – Land, has occurred since certification of the EIR/EIS in 2011 and the 2016 Addendum (See Appendix A). While the current application provides additional detail regarding the lotting pattern, phasing, and provision of utilities (e.g., water and wastewater), no changes to the environmental setting, or the types of activities that would be implemented at the site has occurred. The same land area would be developed in the same pattern and development intensity. No substantial increase in population would occur. Nothing about the project changes would alter the conclusions of the 2016 Addendum or would be different from the issues identified and analyzed in the FPASP EIR/EIS. No new or substantially more severe public services impacts would occur.

Mitigation Measures

The following mitigation measures were referenced in the FPASP EIR/EIS analysis and would continue to remain applicable if the project were approved.

- Mitigation Measure 3A.14-1: Prepare and implement a construction traffic control plan.
- Mitigation Measure 3A.14-2: Incorporate California Fire Code; City of Folsom Fire Code Requirements; and EDHFD Requirements, if necessary, into project design and submit project design to the City of Folsom Fire Department for review and approval.

- Mitigation Measure 3A.14-3: Incorporate fire flow requirements into project designs.

As described in the 2016 Addendum, with implementation of these measures, public services impacts would be reduced to a less-than-significant level.

CONCLUSION

No new circumstances or project changes have occurred nor has any new information been found requiring new analysis or verification. Therefore, the conclusions of the EIR/EIS remain valid and approval of the project would not result in new or substantially more severe significant impacts to public services.

4.15 RECREATION

Environmental Issue Area		Where Impact Was Analyzed in the EIR/EIS.	Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	Any New Information Requiring New Analysis or Verification?	Do Prior Environmental Documents Mitigations Address/Resolve Impacts?
15.	**Recreation.**				
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?	Setting pp. 3A.12-1 to 3A.12-11 Impacts 3A.12-1, 3A.12-2	No	No	NA
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?	Setting pp. 3A.12-1 to 3A.12-11 Impact 3A.12-1	No	No	NA

4.15.1 Discussion

No substantial change in the regulatory settings related to recreation, described in EIR/EIS Section 3A.12 under Parks and Recreation – Land, has occurred since certification of the EIR/EIS in 2011 and the 2016 Addendum (See Appendix A). While the current application provides additional detail regarding the lotting pattern, phasing, and provision of utilities (e.g., water and wastewater), no changes to the environmental setting, or the types of activities that would be implemented at the site has occurred. The same land area would be developed in the same pattern and development intensity. No substantial increase in population would occur. Nothing about the project changes would alter the conclusions of the 2016 Addendum or would be different from the issues identified and analyzed in the FPASP EIR/EIS.

Mitigation Measures

None required.

CONCLUSION

No new circumstances or project changes have occurred nor has any new information been identified requiring new analysis or verification. Therefore, the conclusions of the EIR/EIS remain valid and approval of project would not result in new or substantially more severe significant impacts to recreation.

4.16 TRANSPORTATION/TRAFFIC

Environmental Issue Area		Where Impact Was Analyzed in the EIR/EIS.	Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	Any New Information Requiring New Analysis or Verification?	Do Prior Environmental Documents Mitigations Address/Resolve Impacts?
16.	**Transportation/Traffic. Would the project:**				
a.	Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	Setting pp. 3A.15-8 to 3A.15-24 Impacts 3A.15-1, 3A.15-1a, 3A.15-1b, 3A.15-1c, 3A.15-1d, 3A.15-1e, 3A.15-1f, 3A.15-1g, 3A.15-1h, 3A.15-1i, 3A.15-1j, 3A.15-1k, 3A.15-1l, 3A.15-1m, 3A.15-1n, 3A.15-1o, 3A.15-1p, 3A.15-1q, 3A.15-1r, 3A.15-1s, 3A.15-1t, 3A.15-1u, 3A.15-1v, 3A.15-1w, 3A.15-1x, 3A.15-1y, 3A.15-1z, 3A.15-1aa, 3A.15-1bb, 3A.15-1cc, 3A.15-1dd, 3A.15-1ee, 3A.15-1ff, 3A.15-1gg, 3A.15-1hh, 3A.15-1ii, 3A.15-2, 3A.15-3, 3A.15-4, 3A.15-4a, 3A.15-4b, 3A.15-4c, 3A.15-4d, 3A.15-4e, 3A.15-4f, 3A.15-4g, 3A.15-4h, 3A.15-4i, 3A.15-4k, 3A.15-4l, 3A.15-4m, 3A.15-4n, 3A.15-4o, 3A.15-4p, 3A.15-4q, 3A.15-4r, 3A.15-4s, 3A.15-4t, 3A.15-4u, 3A.15-4v, 3A.15-4w, 3A.15-4x, 3A.15-4y,	No	No	Yes
b.	Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	Setting pp. 3A.15-8 to 3A.15-24 Impacts 3A.15-1, 3A.15-1a, 3A.15-1b, 3A.15-1c, 3A.15-1d, 3A.15-1e, 3A.15-1f, 3A.15-1g, 3A.15-1h, 3A.15-1i, 3A.15-1j, 3A.15-1k, 3A.15-1l, 3A.15-1m, 3A.15-1n, 3A.15-1o, 3A.15-1p, 3A.15-1q, 3A.15-1r, 3A.15-1s, 3A.15-1t, 3A.15-1u, 3A.15-1v, 3A.15-1w, 3A.15-1x, 3A.15-1y, 3A.15-1z, 3A.15-1aa, 3A.15-1bb, 3A.15-1cc, 3A.15-1dd, 3A.15-1ee, 3A.15-1ff, 3A.15-1gg, 3A.15-1hh, 3A.15-1ii, 3A.15-2, 3A.15-3, 3A.15-4, 3A.15-4a, 3A.15-4b, 3A.15-4c, 3A.15-4d, 3A.15-4e, 3A.15-4f, 3A.15-4g, 3A.15-4h, 3A.15-4i, 3A.15-4k, 3A.15-4l, 3A.15-4m, 3A.15-4n, 3A.15-4o, 3A.15-4p, 3A.15-4q, 3A.15-4r, 3A.15-4s, 3A.15-4t, 3A.15-4u, 3A.15-4v, 3A.15-4w, 3A.15-4x, 3A.15-4y,	No	No	Yes

Environmental Issue Area	Where Impact Was Analyzed in the EIR/EIS.	Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	Any New Information Requiring New Analysis or Verification?	Do Prior Environmental Documents Mitigations Address/Resolve Impacts?
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?	Not addressed, no impact	No	No	NA
d. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	Not addressed, no impact	No	No	NA
e. Result in inadequate emergency access?	Discussed under 4.14, Public Services	No	No	Yes
f. Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	Setting pp. 3A.15-8 to 3A.15-24 No Impact	No	No	NA

4.16.1 Discussion

The 2016 Addendum (Appendix A) provided an update to Section 3A.15 Traffic and Transportation of the EIR/EIS for the Folsom Heights area. No substantial change in the environmental and regulatory settings related to transportation/traffic, as described in the 2016 Addendum has occurred. On March 10, 2016, MRO Engineers completed an analysis confirming that the traffic impacts of the Folsom Heights project, as currently proposed, were adequately addressed in the EIR/EIS and presented that analysis in the 2016 Addendum. MRO has subsequently reviewed the current project changes and the analysis in the 2016 Addendum to determine whether the proposed tentative map and phasing plan for the site would result in any new or substantially more severe traffic impacts. That analysis is provided below.

The proposed tentative map project provides the layout of the internal streets and roadways within the plan area and the arrangement of the proposed residential lots. The proposed land use and total number of residential units has not changed since completion of the March 2016 transportation impact analysis. However, El Dorado Hills Community Services District (CSD) and El Dorado County Community Development Agency staff requested that the City of Folsom analyze several additional intersections that were not evaluated in the FPASP EIR/EIS or the 2016 Addendum. On February 7, 2017, MRO Engineers completed a traffic impact analysis which consisted of the following components:

- A consistency assessment to ensure that the tentative map is consistent with previous versions of the project and no significant impacts would result from the layout of the project.
- A traffic impact analysis for the following two intersections identified by CSD:
  - White Rock Road/Stonebriar Drive/Four Seasons Drive, and
  - Stonebriar Drive/Prima Drive.
- A traffic impact analysis for the following two road segments identified by the El Dorado County Community Development Agency staff:
  - White Rock Road between Stonebriar Drive and the Sacramento/El Dorado County line, and
  - White Rock Road between Stonebriar Drive and Manchester Drive.

As directed by City of Folsom staff, the study analyzed detailed traffic operations under the following four scenarios:

- Existing Conditions,
- Existing Plus Project Conditions,
- Cumulative No Project Conditions, and
- Cumulative Plus Project Conditions.

A summary of the analysis is provided below. Appendix B of this document contains the complete February 2017 Final Traffic Impact Analysis report.

Consistency Assessment

Although some of the project's acreage values for individual land uses have changed slightly, the total number of residential units and the commercial square footage are identical to the project that was evaluated in the March 2016 transportation impact analysis. That analysis determined that the traffic impacts of the proposed Folsom Heights SPA had been adequately addressed in the environmental documentation prepared with respect to the entire FPASP EIR/EIS. Specifically, the analysis determined that, in all three key time periods (i.e., daily, AM peak hour, and PM peak hour), the Folsom Heights SPA (evaluated in the 2016 Addendum) land use plan would generate less traffic than the Folsom Heights land use plan evaluated in the FPASP EIR/EIS. Further, the analysis determined that projected cumulative traffic operating conditions have not changed substantially since the FPASP EIR/EIS was certified. Therefore, the March 2016 analysis concluded that the findings presented in the traffic analysis for the FPASP EIR/EIS remained valid for the Folsom Heights SPA project, and no further traffic analysis was necessary. Since that time, El Dorado Hills CSD and El Dorado County Community Development Agency staff requested that additional intersections be evaluated and a summary of that evaluation is provided below.

Impacts to Intersection Level of Service

MRO Engineers, Inc., evaluated existing and existing plus project traffic conditions on the two requested intersections. Table 4.16-1 presents the results of the level of service analysis for the Existing Plus Project scenario and Table 4.16-2 presents the results of the level of service analysis for the Cumulative Plus Project scenario.

Table 4.16-1 Level of Service Summary[1] Existing Plus Project Conditions

Intersection	Traffic Control	AM Peak Hour						PM Peak Hour					
		Existing Conditions			Existing + Project			Existing Conditions			Existing + Project		
		Delay[2]	LOS[3]	Meet Signal Warrant?[4]	Delay	LOS	Meet Signal Warrant?	Delay	LOS	Meet Signal Warrant?	Delay	LOS	Meet Signal Warrant?
White Rock Rd./Stonebriar Dr./Four Seasons Dr.	Signal	11.7	B	–	18.0	B	–	12.7	B	–	18.8	B	–
Stonebriar Dr./Prima Dr.	All-Way STOP	7.7	A	No	9.0	A	No	7.6	A	No	10.1	B	No

White Rock Road Segment		AM Peak Hour				PM Peak Hour			
		Existing Conditions		Existing + Project		Existing Conditions		Existing + Project	
		PFFS[5]	LOS	PFFS	LOS	PFFS	LOS	PFFS	LOS
Sacramento/El Dorado Co. Line to Stonebriar Dr.	EB[6]	82.2%	C	81.8%	C	80.6%	C	80.4%	C
	WB[7]	79.8%	C	79.4%	C	80.8%	C	80.5%	C
Stonebriar Drive to Manchester Drive	EB	80.8%	C	76.0%	C	79.9%	C	75.1%	C
	WB	78.6%	C	77.0%	C	78.6%	C	73.1%	D

Table 4.16-1 Level of Service Summary[1] Existing Plus Project Conditions

Notes:
1 Reference: Transportation Research Board, *Highway Capacity Manual 2010*, Fifth Edition, December 2010.
2 Average control delay (seconds per vehicle).
3 Level of service.
4 "Peak Hour" signal warrant from "Part 4 – Highway Traffic Signals" of the *California Manual on Uniform Traffic Control Devices*, November 7, 2014.
5 Percent of free-flow speed.
6 Eastbound.
7 Westbound.
Source: MRO Engineers, Inc. 2017; Table 8

Table 4.16-2 Level of Service Summary[1] Cumulative Plus Project Conditions

Intersection	Traffic Control	AM Peak Hour						PM Peak Hour					
		Cumulative No Project Conditions			Cumulative + Project Conditions			Cumulative No Project Conditions			Cumulative + Project Conditions		
		Delay[2]	LOS[3]	Meet Signal Warrant?[4]	Delay	LOS	Meet Signal Warrant?	Delay	LOS	Meet Signal Warrant?	Delay	LOS	Meet Signal Warrant?
White Rock Rd./Stonebriar Dr./ Four Seasons Dr.	Signal	11.5	B	–	14.0	B	–	13.4	B	–	16.7	B	–
Stonebriar Dr./Prima Dr.	All-Way STOP	7.8	A	No	8.1	A	No	7.7	A	No	8.2	A	No

White Rock Road Segment		AM Peak Hour				PM Peak Hour			
		Cumulative No Project Conditions		Cumulative + Project Conditions		Cumulative No Project Conditions		Cumulative + Project Conditions	
		Density[5]	LOS	Density	LOS	Density	LOS	Density	LOS
Sacramento/ El Dorado Co. Line to Stonebriar Dr.	EB[6]	16.3	B	17.0	B	14.1	B	15.1	B
	WB[7]	10.6	A	11.3	B	13.8	B	14.9	B
Stonebriar Drive to Manchester Drive	EB	16.7	B	17.7	B	15.1	B	16.3	B
	WB	10.6	A	11.2	B	13.7	B	15.1	B

Notes:
1 Reference: Transportation Research Board, *Highway Capacity Manual 2010*, Fifth Edition, December 2010.
2 Average control delay (seconds per vehicle).
3 Level of service.
4 "Peak Hour" signal warrant from "Part 4 – Highway Traffic Signals" of the *California Manual on Uniform Traffic Control Devices*, November 7, 2014.
5 Passenger cars per mile per lane.
6 Eastbound.
7 Westbound.
Source: MRO Engineers, Inc. 2017; Table 11

<u>AM Peak Hour</u>

Both study intersections are projected to operate acceptably under the El Dorado County level of service (LOS) E standard for both existing plus Project and Cumulative Plus Project scenarios. Further, no change in level of service is projected upon addition of the project-generated traffic. The intersection at White Rock Rd./Stonebriar Dr./Four Seasons Dr. is projected to remain at LOS B under project and cumulative conditions. The intersection at Stonebriar Dr./Prima Dr. is projected to remain at LOS A under project and cumulative conditions. The Stonebriar Drive/Prima Drive intersection will have insufficient traffic to meet the "Peak Hour" signal warrant requirements. In summary, the project's impact would be less than significant in the AM peak hour.

<u>PM Peak Hour</u>

Addition of the project-generated traffic in the weekday PM peak hour would result in relatively small increases in intersection delay at the study intersections. Both locations would continue to operate at LOS A or B (similar to the AM peak hour). The “Peak Hour” signal warrant requirements will not be met at Stonebriar Drive/Prima Drive, so continuation of all-way-stop control is appropriate. As in the AM peak hour, the project’s impact is considered less than significant.

Impacts to Roadway Segment Level of Service

<u>AM Peak Hour</u>

Under existing conditions, both segments of road operate at LOS C during the AM peak hour. With the addition of the project-generated traffic, both segments would remain at LOS C in existing plus project scenario. In the cumulative condition, the LOS would improve to LOS B in the eastbound segments and LOS A in the westbound segments (due to planned roadway improvements). In the cumulative plus project scenario, both westbound segments would decline from LOS A to LOS B; however, all of the study segments would continue to operate at acceptable levels of service. Thus, the project’s impact would be less than significant.

<u>PM Peak Hour</u>

Under the existing plus project scenario in the PM peak hour, no change in level of service is expected on three of the four study segments of White Rock Road, where it would operate at an acceptable LOS C. The westbound segment between Stonebriar Drive and Manchester Drive is projected to decline from LOS C to LOS D, but would continue to operate at an acceptable level of service. Under the cumulative plus project scenario, no change in level of service is expected on all four study segments of White Rock Road. Both segments are projected to operate at LOS B in both directions. The project’s impact would be less than significant.

Mitigation Measures

In both peak-hour periods, the Folsom Heights tentative map project would result in less-than-significant impacts to traffic operations at the study intersections and roadway segments under cumulative conditions. Therefore, no off-site mitigation measures are required.

Project Phasing Assessment

The analysis presented above considered the potential traffic impacts of buildout of the Folsom Heights tentative map under Cumulative Plus Project (i.e., buildout) conditions. Because the project would be constructed in four phases, an assessment was conducted to determine whether significant traffic impacts might be associated with any of the intermediate project phases under cumulative conditions.

Table 4.16-3, below, presents estimated AM and PM peak hour trip generation values for each of the project phases. As shown, in both peak-hour periods, the estimated volume of project-generated traffic associated with each of the phases and combinations of phases is substantially less than the estimated buildout values analyzed in detail above. Further, preliminary assignments of project-generated traffic to the study locations confirm that the volume of project-related traffic upon completion of each phase would be less than the buildout values and would operate at acceptable levels of service (MRO Engineers, 2017).

Given that buildout of the proposed Folsom Heights tentative map project would result in no significant impacts under cumulative conditions and each of the intermediate phases would generate substantially less traffic than project buildout, construction of each those phases would not result in any additional significant traffic impacts at the study locations that were not previously considered and evaluated.

Table 4.16-3 Project Trip Generation Estimate by Phase[1]

Project Phase	AM Peak Hour			PM Peak Hour		
	In	Out	Total	In	Out	Total
Phase 1	25	76	101	85	50	135
Phase 2	50	150	200	168	98	266
Phase 1 + 2 Subtotal	*75*	*226*	*301*	*253*	*148*	*401*
Phase 3	24	73	97	81	48	129
Phase 1 + 2 + 3 Subtotal	*99*	*299*	*398*	*334*	*196*	*530*
Buildout[2]	*282*	*410*	*692*	*642*	*515*	*1,157*

Notes:

[1] Reference: Institute of Transportation Engineers, *Trip Generation Manual*, Ninth Edition, 2012.

[2] See Table 7.

Source: MRO Engineers, Inc. 2017; Table 9

Mitigation Measures

The following mitigation measures were referenced in the FPASP EIR/EIS analysis and would continue to remain applicable if the project were approved.

- Mitigation Measure 3A.15-1a: The applicant shall pay a fair share to fund the construction of improvements to the Folsom Boulevard/Blue Ravine Road intersection (Intersection 1).
- Mitigation Measure 3A.15-1b: The applicant shall pay a fair share to fund the construction of improvements at the Sibley Street/Blue Ravine Road intersection (Intersection 2).
- Mitigation Measure 3A.15-1c: The applicant shall fund and construct improvements to the Scott Road (West)/White Rock Road intersection (Intersection 28).
- Mitigation Measure 3A.15-1e: Fund and construct improvements to the Hillside Drive/Easton Valley Parkway intersection (Intersection 41).
- Mitigation Measure 3A.15-1f: Fund and construct improvements to the Oak Avenue Parkway/Middle Road intersection (Intersection 44).
- Mitigation Measure 3A.15-1h: Participate in fair share funding of improvements to reduce impacts to the Hazel Avenue/Folsom Boulevard intersection (Sacramento County Intersection 2).
- Mitigation Measure 3A.15-1i: Participate in fair share funding of improvements to reduce impacts on the Grant Line Road/White Rock Road intersection and to White Rock Road widening between the Rancho Cordova City limit to Prairie City Road (Sacramento County Intersection 3).
- Mitigation Measure 3A.15-1j: Participate in fair share funding of improvements to reduce impacts on Hazel Avenue between Madison Avenue and Curragh Downs Drive (Roadway Segment 10).
- Mitigation Measure 3A.15-1l: Participate in fair share funding of improvements to reduce impacts on the White Rock Road/Windfield Way intersection (El Dorado County Intersection 3).
- Mitigation Measure 3A.15-1o: Participate in fair share funding of improvements to reduce impacts on Eastbound U.S. 50 as an alternative to improvements at the Folsom Boulevard/U.S. 50 eastbound ramps intersection (Caltrans Intersection 4).

- Mitigation Measure 3A.15-1p: Participate in fair share funding of improvements to reduce impacts on the Grant Line Road/ State Route 16 intersection (Caltrans Intersection 12).
- Mitigation Measure 3A.15-1q: Participate in fair share funding of improvements to reduce impacts on eastbound U.S. 50 between Zinfandel Drive and Sunrise Boulevard (Freeway Segment 1).
- Mitigation Measure 3A.15-1r: Participate in fair share funding of improvements to reduce impacts on eastbound U.S. 50 between Hazel Avenue and Folsom Boulevard (Freeway Segment 3).
- Mitigation Measure 3A.15-1s: Participate in fair share funding of improvements to reduce impacts on eastbound U.S. 50 between Folsom Boulevard and Prairie City Road (Freeway Segment 4).
- Mitigation Measure 3A.15-1u: Participate in fair share funding of improvements to reduce impacts on westbound U.S. 50 between Prairie City Road and Folsom Boulevard (Freeway Segment 16).
- Mitigation Measure 3A.15-1v: Participate in fair share funding of improvements to reduce impacts on westbound U.S. 50 between Hazel Avenue and Sunrise Boulevard (Freeway Segment 18).
- Mitigation Measure 3A.15-1w: Participate in fair share funding of improvements to reduce impacts on U.S. 50 eastbound / Folsom Boulevard ramp merge (Freeway Merge 4).
- Mitigation Measure 3A.15-1x: Participate in fair share funding of improvements to reduce impacts on U.S. 50 eastbound / Prairie City Road diverge (Freeway Diverge 5).
- Mitigation Measure 3A.15-1y: Participate in fair share funding of improvements to reduce impacts on U.S. 50 eastbound / Prairie City Road direct merge (Freeway Merge 6).
- Mitigation Measure 3A.15-1z: Participate in fair share funding of improvements to reduce impacts on U.S. 50 eastbound / Prairie City Road flyover on-ramp to Oak Avenue Parkway off-ramp weave (Freeway Weave 8).
- Mitigation Measure 3A.15-1aa: Participate in fair share funding of improvements to reduce impacts on U.S. 50 eastbound / Oak Avenue Parkway loop merge (Freeway Merge 9).
- Mitigation Measure 3A.15-1dd: Participate in fair share funding of improvements to reduce impacts on U.S. 50 Westbound / Empire Ranch Road loop ramp merge (Freeway Merge 23).
- Mitigation Measure 3A.15-1ee: Participate in fair share funding of improvements to reduce impacts on U.S. 50 westbound / Oak Avenue Parkway loop ramp merge (Freeway Merge 29).
- Mitigation Measure 3A.15-1ff: Participate in fair share funding of improvements to reduce impacts on U.S. 50 westbound / Prairie City Road loop ramp merge (Freeway Merge 32).
- Mitigation Measure 3A.15-1gg: Participate in fair share funding of improvements to reduce impacts on U.S. 50 westbound / Prairie City Road direct ramp merge (Freeway Merge 33).
- Mitigation Measure 3A.15-1hh: Participate in fair share funding of improvements to reduce impacts on U.S. 50 eastbound / Folsom Boulevard diverge (Freeway Diverge 34).
- Mitigation Measure 3A.15-1ii: Participate in fair share funding of improvements to reduce impacts on U.S. 50 westbound / Hazel Avenue direct ramp merge (Freeway Merge 38).
- Mitigation Measure 3A.15-2a: Develop commercial support services and mixed-use development concurrent with housing development, and develop and provide options for alternative transportation modes.

- Mitigation Measure 3A.15-2b: Participate in the city's Transportation System Management Fee Program.
- Mitigation Measure 3A.15-2c: Participate with the U.S. 50 corridor transportation management association.
- Mitigation Measure 3A.15-3: Pay full cost of identified improvements that are not funded by the city's fee program.
- Mitigation Measure 3A.15-4a: The applicant shall pay a fair share to fund the construction of improvements to the Sibley Street/Blue Ravine Road intersection (Folsom Intersection 2).
- Mitigation Measure 3A.15-4b: The applicant shall pay a fair share to fund the construction of improvements to the Oak Avenue Parkway/East Bidwell Street intersection (Folsom Intersection 6).
- Mitigation Measure 3A.15-7c: The applicant shall pay a fair share to fund the construction of improvements to the East Bidwell Street/Nesmith Court intersection (Folsom Intersection 7).
- Mitigation Measure 3A.15-4d: The applicant shall pay a fair share to fund the construction of improvements to the East Bidwell Street/Iron Point Road intersection (Folsom Intersection 21).
- Mitigation Measure 3A.15-4e: The applicant shall pay a fair share to fund the construction of improvements to the Serpa Way/ Iron Point Road intersection (Folsom Intersection 23).
- Mitigation Measure 3A.15-4f: The applicant shall pay a fair share to fund the construction of improvements to the Empire Ranch Road / Iron Point Road intersection (Folsom Intersection 24).
- Mitigation Measure 3A.15-4g: The Applicant shall fund and construct improvements to the oak avenue Parkway / Easton Valley Parkway intersection (Folsom Intersection 33).
- Mitigation Measure 3A.15-4i: Participate in fair share funding of improvements to reduce impacts on the Grant Line Road/White Rock Road intersection (Sacramento County Intersection 3).
- Mitigation Measure 3A.15-4j: Participate in fair share funding of improvements to reduce impacts on Grant Line Road between White Rock Road and Kiefer Boulevard (Sacramento County Roadway Segments 5-7).
- Mitigation Measure 3A.15-4k: Participate in fair share funding of improvements to reduce impacts on Grant Line Road between Kiefer Boulevard and Jackson Highway (Sacramento County Roadway Segment 8).
- Mitigation Measure 3A.15-4l: Participate in fair share funding of improvements to reduce impacts on Hazel Avenue between Curragh Downs Drive and U.S. 50 westbound ramps (Sacramento County Roadway Segment s 12-13).
- Mitigation Measure 3A.15-4m: Participate in fair share funding of improvements to reduce impacts on White Rock Road between Grant Line Road and Prairie City Road (Sacramento County Roadway Segment 22).
- Mitigation Measure 3A.15-4n: Participate in fair share funding of improvements to reduce impacts on White Rock Road between Empire Ranch Road and Carson Crossing Road (Sacramento County Roadway Segment 28).
- Mitigation Measure 3A.15-4o: Participate in fair share funding of improvements to reduce impacts on the White Rock Road / Carson Crossing Road intersection (El Dorado County 1).
- Mitigation Measure 3A.15-4p: Participate in fair share funding of improvements to reduce impacts on the Hazel Avenue/U.S. 50 Westbound Ramps intersection (Caltrans Intersection 1).

- Mitigation Measure 3A.15-4q: Participate in fair share funding of improvements to reduce impacts on eastbound U.S. 50 between Zinfandel Drive and Sunrise Boulevard (Freeway Segment 1).
- Mitigation Measure 3A.15-4r: Participate in fair share funding of improvements to reduce impacts on eastbound U.S. 50 between Rancho Cordova Parkway and Hazel Avenue (Freeway Segment 3).
- Mitigation Measure 3A.15-4s: Participate in fair share funding of improvements to reduce impacts on eastbound U.S. 50 between Folsom Boulevard and Prairie City Road (Freeway Segment 5).
- Mitigation Measure 3A.15-4t: Participate in fair share funding of improvements to reduce impacts on eastbound U.S. 50 between Prairie City Road and Oak Avenue Parkway (Freeway Segment 6).
- Mitigation Measure 3A.15-4u: Participate in fair share funding of improvements to reduce impacts on the U.S. 50 eastbound / Prairie City Road slip ramp merge (Freeway Merge 6).
- Mitigation Measure 3A.15-4v: Participate in fair share funding of improvements to reduce impacts on the U.S. 50 eastbound / Prairie City Road flyover on ramp to Oak Avenue Parkway off ramp weave (Freeway Weave 7).
- Mitigation Measure 3A.15-4w: Participate in fair share funding of improvements to reduce impacts on U.S. 50 eastbound / Oak Avenue Parkway loop ramp merge (Freeway Merge 8).
- Mitigation Measure 3A.15-4x: Participate in fair share funding of improvements to reduce impacts on U.S. 50 westbound / Empire Ranch Road loop ramp merge (Freeway Merge 27).
- Mitigation Measure 3A.15-4y: Participate in fair share funding of improvements to reduce impacts on U.S. 50 westbound / Prairie City Road loop ramp merge (Freeway Merge 35).

The EIR/EIS concluded that the impacts of impacts to some intersections' and roadways' level of service would remain significant and unavoidable even with implementation of recommended mitigation. No additional mitigation measures are available to reduce or eliminate the impacts.

CONCLUSION

The February 2017 traffic impact analysis is consistent with the analysis completed for the approved FPASP EIR/EIS and the 2016 Addendum. The project would not result in new or substantially more severe significant impacts to transportation. Therefore, the conclusions of the FPASP EIR/EIS remain valid.

4.17 UTILITIES AND SERVICE SYSTEMS

	Environmental Issue Area	Where Impact Was Analyzed in the EIR/EIS.	Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	Any New Information Requiring New Analysis or Verification?	Do Prior Environmental Documents Mitigations Address/Resolve Impacts?
17.	**Utilities and Service Systems. Would the project:**				
a.	Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	Setting pp. 3A.16-1 to 3A.16-3 and 3A.18-1 to 3A.18-6 Impacts 3A.16-1, 3A.16-2, 3A.18-2, 3A.16-3, 3A.16-4, 3A.16-5	No	No	Yes
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?	Setting pp. 3A.16-1 to 3A.16-3 and 3A.18-1 to 3A.18-6 Impacts 3A.16-1, 3A.16-2, 3A.18-2, 3A.16-3, 3A.16-4, 3A.16-5	No	No	Yes
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?	Setting p. 4-68	No	No	Yes
d.	Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	Setting pp. 3A.18-1 to 3A.18-6 Impact 3A.18-1	No	No	Yes
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?	Setting pp. 3A.16-1 to 3A.16-3 Impacts 3A.16-2, 3A.16-3, 3A.16-4, 3A.16-5	No	No	Yes
f.	Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	Setting pp. 3A.16-3 to 3A.16-4 Impacts 3A.16-6, 3A.16-7	No	No	NA
g.	Comply with federal, state, and local statutes and regulations related to solid waste?	Setting p. 3A.16-4 Impacts 3A.16-6, 3A.16-7	No	No	NA
h.	Create demand for natural gas, electricity, telephone, and other utility services that cannot be met.	Setting pp. 3A.16-5 to 3A.16-7 Impacts 3A.16-8, 3A.16-9, 3A.16-10, 3A.16-11	No	No	NA
i.	Result in inefficient, wasteful, and unnecessary consumption of energy.	Setting pp. 3A.16-5to 3A.16-6, 3A.16-8 Impact 3A.16-12	No	No	NA

4.17.1 Discussion

No substantial change in the environmental and regulatory settings related to utilities and service systems as described in EIR/EIS Section 3A.16 Utilities and Service Systems – Land has occurred since certification of the EIR/EIS in 2011 and the 2016 Addendum (See Appendix A). While the current application provides additional detail, these changes do not constitute a change in circumstances regarding utilities and service systems as described below.

The tentative map application provides a conceptual phasing plan for utilities and confirmation of service from utility agencies. No changes are proposed for the backbone infrastructure or the overall sizing and capacity of utility infrastructure would occur (as approved by the City Council as part of the FPASP). The applicant has prepared a draft facilities plan report (FPR) which provides detail on proposed locations for the utility facilities. They are in consultation with EID to review and finalize the exact locations. The proposed detailed phasing and location of facilities within the plan area would not change the analysis or alter the conclusions of the FPASP EIR/EIS because the FPASP EIR/EIS assumed that infrastructure would be developed in phases and that it would be located within each area as needed to serve the area (City of Folsom 2010; p. 2-37). The project's detailed phasing and utility location plan (as drafted and finalized through the FPR review process) would be consistent with these assumptions.

The 2016 Addendum stated that "Water for the project would be provided by EID, and prior to approval of the project, EID will review the project and provide proof that there is adequate water supply to serve the project" (City of Folsom 2016). Mitigation Measure 3A.16-5 of the EIR/EIS requires the applicant to obtain and submit proof that EID would have enough wastewater treatment capacity to serve the development. Mitigation Measure 3A.18-1 requires that the applicant "demonstrate the availability of a reliable and sufficient water supply from a public water system for the amount of development that would be authorized by the final subdivision map" (City of Folsom 2011).

EID has provided the applicant with a sewer and water service letter that states "As of January 1, 2016, there were 20,417 equivalent dwelling units (EDUs) of potable water supply available in the District's El Dorado Hills supply area. The proposed Folsom Heights project, as proposed on this date, would require approximately 522 EDUs of water supply. As of the date of this letter [December 21, 2016], the District has sufficient water and sewer capacity to serve the proposed Folsom Heights project" (EID 2016).

The letter provides additional detail on how the applicant and City would fulfill the mitigation required in the EIR/EIS. However, through consultations with EID, the applicant has met its mitigation requirements needed for consideration of tentative map approval.

As described in the Project Description, under 2.5.2. Phasing, there is a potential for Phase 3 to gravity sewer towards the City of Folsom. If that becomes the preferred sewer method, the City would enter into an agreement with EID to provide wastewater service for these lots, while acknowledging that the subject lots remain within the jurisdictional boundaries of EID.

Within the Folsom system, sewage is routed through interceptors owned by the Sacramento Regional County Sanitation District (SRSCSD) and treated at the Sacramento Regional Wastewater Treatment Plant (SRWTP) located just north of Elk Grove. Two interceptors, the Folsom East Interceptor and the Folsom Interceptor, and one pump station serve the City. Because of water conservation measures, recent and projected wastewater inflows to the SRCSD system have been flat and declining, with the 2006 high level of approximately 170 million gallons per day (mgd) not anticipated to be surpassed again until the year 2025. The SRWTP has a permitted dry-weather flow design capacity of 181 million gallons per day (mgd), which is not expected to be exceeded until after 2030. The SWRTP's 2020 Master Plan provides for the expansion of the SRWTP capacity to 218 mgd if needed (Folsom 2014: 8-27).

The SRCSD is in the process of constructing upgrades to the SRWTP (EchoWater Project) to meet more stringent treatment levels required by the Central Valley RWQCB. To meet these requirements, the SRCSD is undertaking a major upgrade to the SRWTP to implement new processes, including; biological nutrient removal that will eliminate nearly all ammonia and most nitrate from treated effluent; filtering to remove very small particles and pathogens; and a higher level of disinfection to remove even more pathogens. The EchoWater Project is projected to be phased in beginning in 2020, with project completion in 2023 (SRCSD 2016).

The City of Folsom has reviewed the application and deemed it complete. If the project is approved and Phase 3 sewers are connected to the City of Folsom sewer system, the City would provide wastewater service to the site. As described above, the City has sufficient capacity to treat wastewater associated with the project.

No other changes related to storm drainage facilities, solid waste services, or electricity or natural gas services are proposed. No new significant or substantially more sever environmental impacts would occur.

Mitigation Measures

The following mitigation measures were referenced in the FPASP EIR/EIS analysis and would continue to remain applicable if the project were approved.

- Mitigation Measure 3A.16-1: Submit proof of adequate on- and off-site wastewater conveyance facilities and implement on- and off-site infrastructure service systems or ensure that adequate financing is secured.
- Mitigation Measure 3A.16-3: Demonstrate adequate SRWTP wastewater treatment capacity.
- Mitigation Measure 3A.16-4: Submit proof of adequate EID off-site wastewater conveyance facilities and implement EID off-site infrastructure service systems or ensure that adequate financing is secured.
- Mitigation Measure 3A.16-5: Demonstrate adequate El Dorado Hills Wastewater Treatment Plant capacity.
- Mitigation Measure 3A.18-1: Submit proof of surface water supply availability.
- Mitigation Measure 3A.18-2a: Submit proof of adequate off-site water conveyance facilities and implement off-site infrastructure service system or ensure that adequate financing is secured.
- Mitigation Measure 3A.18-2b: Demonstrate adequate off-site water treatment capacity (if the off-site water treatment plant option is selected).

The EIR/EIS concluded that there were potential significant and unavoidable impacts addressing environmental effects associated with improvements to treatment plant facilities. However, the project relies on EID for water and sewer utility services, which has capacity without improvements. With implementation of the above measures, other impacts related to utilities and service systems would be reduced to a less-than-significant level.

CONCLUSION

No changes in circumstances would result in new or substantially more severe significant environmental impacts related to utilities and service systems, compared to the analysis presented in the FPASP EIR/EIS and 2016 Addendum. Therefore, the conclusions of the certified Final EIR/EIS remain valid and no additional analysis is required.

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5 LIST OF PREPARERS AND PERSONS CONSULTED

5.1 LIST OF PREPARERS

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6 REFERENCES

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______. 2014 (April). City of Folsom General Plan Update Existing Conditions Report. Available: http://folsom2035.com/documents. Accessed February 21, 2017.

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ECORP Consulting Inc. 2016 (July). *Cultural Resources Inventory Report Folsom Heights Off-sites Project.* Prepared for Executive Hotels and Resorts. Rocklin, CA.

MRO Engineers, Inc. 2017 (February 7). Final Traffic Impact Analysis. Auburn, CA. Prepared for Ascent Environmental, Inc. and City of Folsom Community Development Department.

SHPO. *See* California State Office of Historic Preservation.

USACE. *See* United States Army Corps of Engineers

United States Army Corps of Engineers. 2017 (February 10). Reference Number COE090818A. Letter to Ms. Julianne Polanco, State Historic Preservation Officer from Lisa Gibson, Regulatory Permit Specialist. Sacramento, CA.

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Appendix A

Folsom Heights Specific Plan Amendment Addendum, June 2016

Environmental Checklist and Addendum

Folsom Plan Area Specific Plan Amendment for the Folsom Heights Area

April 2016

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Folsom Plan Area Specific Plan Amendment for the Folsom Heights Area

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April 2016

Addendum to the
Folsom Plan Area Specific Plan
Final Environmental Impact Report
for the Folsom Heights Area

April 20, 2016
State Clearinghouse No. 2008092051

BACKGROUND AND ACTION TRIGGERING THE ADDENDUM

This addendum to the Final Environmental Impact Report/Environmental Impact Statement (Final EIR/EIS) for the Folsom South of U.S. Highway 50 Specific Plan Project evaluates an amendment to the Folsom Plan Area Specific Plan (FPASP). Specifically, this addendum analyzes the effects of a decrease in the area of general commercial land use in the Folsom Heights plan area and increase in the acreage of residential development. The changed residential uses would include a decrease in multi-family and an increase in single-family land uses, but there would be no additional dwelling units added to the site. The decrase in general commercial land uses would result in the reduction of commercial areas by approximately 250,000 square feet.

As the lead agency under the California Environmental Quality Act (CEQA), the City of Folsom has determined that, in accordance with Section 15164 of the State CEQA Guidelines, the proposed reductions in nonresidential space and other changes differ sufficiently from the development scenario described in the Final EIR/EIS for the adopted FPASP to warrant preparation of an addendum.

PREVIOUS ENVIRONMENTAL ANALYSES

The environmental process for the FPASP involved the preparation of the following documents that are relevant to the consideration of the proposed amendment to FPASP for the Folsom Heights Plan Area.

- Draft EIR/EIS for the Folsom South of U.S. 50 Specific Plan Project, Volumes I-III and Appendices, June 2010;
- FEIR for the Folsom South of U.S. Highway 50 Specific Plan Project, May 2011;
- CEQA Findings of Fact and Statement of Overriding Considerations for the Folsom South of U.S. Highway 50 Specific Plan Project, May 2011; and
- Mitigation Monitoring and Reporting Program for the Folsom South of U.S. Highway 50 Specific Plan Project, May 2011.

CALIFORNIA ENVIRONMENTAL QUALITY ACT GUIDELINES REGARDING AN ADDENDUM TO AN ENVIRONMENTAL IMPACT REPORT

Altered conditions, changes, or additions to the description of a project that occur after certification of an EIR may require additional analysis under CEQA. The legal principles that guide decisions regarding whether additional environmental documentation is required are provided in the State CEQA Guidelines, which establish three mechanisms to address these changes: a subsequent environmental impact report (SEIR), a Supplement to an EIR, and an Addendum to an EIR.

Section 15162 of the State CEQA Guidelines describes the conditions under which a SEIR would be prepared. In summary, when an EIR has been certified for a project, no Subsequent EIR shall be prepared for that project unless the lead agency determines, on the basis of substantial evidence in light of the whole record, one or more of the following:

> (1) Substantial changes are proposed in the project which will require major revisions of the previous EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified effects;
>
> (2) Substantial changes occur with respect to the circumstances under which the project is undertaken which will require major revisions of the previous EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects; or
>
> (3) New information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the previous EIR was certified as complete, shows any of the following:
>
>> (A) The project will have one or more significant effects not discussed in the previous EIR;
>>
>> (B) Significant effects previously examined will be substantially more severe than shown in the previous EIR;
>>
>> (C) Mitigation measures or alternatives previously found not to be feasible would in fact be feasible, and would substantially reduce one or more significant effects of the project, but the project proponents decline to adopt the mitigation measures or alternatives; or
>>
>> (D) Mitigation measures or alternatives which are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measure or alternative.

Section 15163 of the State CEQA Guidelines states that a lead agency may choose to prepare a supplement to an EIR rather than a Subsequent EIR if:

> (1) any of the conditions described above for Section 15162 would require the preparation of a SEIR; and
>
> (2) only minor additions or changes would be necessary to make the previous EIR adequately apply to the project in the changed situation.

An addendum is appropriate where a previously certified EIR has been prepared and some changes or revisions to the project are proposed, or the circumstances surrounding the project have changed, but none of the changes or revisions would result in significant new or substantially more severe environmental impacts, consistent with CEQA Section 21166 and State CEQA Guidelines Sections 15162, 15163, 15164, and 15168.

This addendum is intended to evaluate and confirm CEQA compliance for proposed amendment to the FPASP, which would be a change relative to what is described and evaluated in the FPASP Final EIR/EIS. This addendum is organized as an environmental checklist, and is intended to evaluate all environmental topic areas for any changes in circumstances or the project description, as compared to the approved Final EIR/EIS, and determine whether such changes were or were not adequately covered in the certified EIR/EIS. This checklist is not the traditional CEQA Environmental Checklist, per Appendix G of the CEQA Guidelines. As explained below, the purpose of this checklist is to evaluate the checklist categories in terms of any "changed condition" (i.e., changed circumstances, project changes, or new information of substantial importance) that may result in a different environmental impact significance conclusion from the FPASP EIR/EIS. The column titles of the checklist have been modified from the Appendix G presentation to help answer the questions to be addressed pursuant to CEQA Section 21166 and State CEQA Guidelines Section 15162, 15163, 15164 and 15168.

TABLE OF CONTENTS

Appendices (to be found on a CD on the back cover)

Exhibits

Tables

ACRONYMS AND ABBREVIATIONS

°C	degrees Celsius
°F	degrees Fahrenheit
AB 32	California Global Warming Solutions Act of 2006
APE	Area of Potential Effects
ARB	California Air Resources Board
Area 40	Aerojet Superfund site
ATCMs	air toxic control measures
BAC	Bollard Acoustical Consultants
BMPs	best management practices
CAA	federal Clean Air Act
CAAQS	California Ambient Air Quality Standard
CDFW	California Department of Fish and Wildlife
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CH_4	methane
CNELs	community noise equivalent levels
CNG	compressed natural gas
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	CO_2-equivalent
dB	decibels
diesel PM	diesel-powered engines
DWR	California Department of Water Resources
EID	El Dorado Irrigation District
EIR/EIS	Environmental Impact Report/Environmental Impact Statement
EPA	U.S. Environmental Protection Agency
FAPA	First Amended Programmatic Agreement
FPASP	Folsom Plan Area Specific Plan
FTA	Federal Transit Administration
GHG	greenhouse gas
GWP	global warming potential
HFCs	hydrofluorocarbons
HPMP	Historic Property Management Plan
HVAC	heating, ventilation, and air conditioning
IPCC	Intergovernmental Panel on Climate Change
LAFCo	Sacramento Local Agency Formation Commission
L_{dn}	day-night average noise level
LID	low impact development
MMT	million metric tons
MPOs	Metropolitan Planning Organizations

N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NHTSA	National Highway Traffic Safety Administration
NOA	naturally occurring asbestos
NO_X	oxides of nitrogen
NPDES	National Pollutant Discharge Elimination System
NRC	National Research Council
PA	programmatic agreement
PCE	tetrachloroethene
PFCs	perfluorocarbons
PHPS	Preliminary Historic Properties Synthesis
PM_{10}	particulate matter with an aerodynamic diameter of 10 micrometers or less
$PM_{2.5}$	particulate matter with an aerodynamic diameter of 2.5 micrometers or less
PPV	peak particle velocity
RECs	recognized environmental conditions
ROG	reactive organic gases
RWQCB	Regional Water Quality Control Board
SACOG	Sacramento Area Council of Governments
SB	Senate Bill
SCS	Sustainable Communities Strategy
SENLs	Single-event noise levels
SF_6	sulfur hexafluoride
SHPO	State Historic Preservation Officer
SMAQMD	Sacramento Air Quality Management District
SPA	Specific Plan Amendment
SRCSD	Sacramento Regional County Sanitation District
SRWTP	Sacramento Regional Wastewater Treatment Plant
SVAB	Sacramento Valley Air Basin
SWPPP	storm water pollution prevention plan
TAC	toxic air contaminant
TCE	trichloroethene
TRUs	transport refrigeration units
USACE	U.S. Army Corps of Engineers
VdB	vibration decibels
VOCs	volatile organic compounds

1 INTRODUCTION AND PROJECT HISTORY

On June 28, 2011, the Folsom City Council approved the Folsom Plan Area Specific Plan (FPASP) for development of up to 10,210 residential homes with a range of housing types, styles, and densities along with commercial, industrial/office park, and mixed-use land uses, open space, public schools, parks, and supporting infrastructure. The development would be located on approximately 3,514 acres (Resolution No. 8863). The City and the U.S. Army Corps of Engineers (USACE) prepared a joint Environmental Impact Report/Environmental Impact Statement (EIR/EIS) for the FPASP that evaluated the environmental impacts associated with development of the entire plan area based on the land use and zoning designations identified in the specific plan. The City was the Lead Agency with respect to preparation of the EIR and USACE was the Lead Agency with respect to preparation of the EIS.

The area proposed for the Folsom Heights development was included within the FPASP. The development is located on the north-eastern edge of the FPASP along the Sacramento County/El Dorado County line. The site is owned by Folsom Heights, LLC, and the owners have brought forward a development application that responds to current and future market conditions for general commercial and residential development. Accordingly, the applicants proposed an amendment to the adopted FPASP that would reduce the area of general commercial land use in the Folsom Heights plan area and increase the acreage of residential development.

The EIR/EIS was prepared at the program "first-tier" level of environmental review consistent with the requirements of California Environmental Quality Act (CEQA) Sections 15152 and 15168. The program-level analysis considered the broad environmental impacts of the overall specific plan. In addition, the EIR/EIS also included a more detailed analysis of specific topic areas beyond the program level, including: Aesthetics; Cultural Resources; Geology, Soils, Minerals, and Paleontological Resources; Hazards and Hazardous Materials; and Land Use Planning and Agricultural Resources. The EIR/EIS acknowledged that development of the FPASP area would occur in multiple phases. As those phases are proposed, such as the Folsom Heights Specific Plan Amendment (SPA or project), they are being evaluated to determine whether the entitlements/actions proposed fall within the scope of the approved EIR/EIS and incorporate all applicable performance standards and mitigation measures identified therein. Should the subsequent development phases not be consistent with the approved FPASP, additional environmental review through the subsequent review provisions of CEQA for changes to previously reviewed and approved projects may be warranted (CEQA Guidelines Sections 15162 through 15164).

Consistent with the process described, the City is evaluating the Folsom Heights application to determine whether this project is consistent with the FPASP and whether and what type of additional environmental review would be required. This environmental checklist has been prepared to determine whether any additional environmental review would be required for the City to consider adoption of the changes in the FPASP. This analysis considers whether there are changes proposed in the previously reviewed and approved FPASP or changed environmental conditions that are of sufficient magnitude to result in new or substantially more severe environmental impacts, as compared to those considered in the FPASP EIR/EIS, and also whether there is new information of substantial importance showing that new or substantially more severe environmental impacts would occur compared to that evaluated in the FPASP EIR/EIS.

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2 PROJECT DESCRIPTION

2.1 PROJECT OVERVIEW

The owners of a portion of the FPASP area known as Folsom Heights have brought forward a development application. The Folsom Heights project would result in a detailed site development plan for approximately 190 acres located on the north-eastern boundary of the FPASP. In general, the proposed application is largely consistent with the land uses proposed and approved for this portion of the FPASP. The Folsom Heights project would include the following planning entitlements: General Plan Amendment (GPA) and Specific Plan Amendment (SPA)..

The SPA for the Folsom Heights project would result in the reallocation/relocation of some land uses within the project area, but proposed land use types would be the same as that approved within the FPASP. The net result of these proposed land use changes would be a decrease of approximately 23 acres of General Commercial land uses, an increase of approximately four acres of open space, an increase of 1.8 acres of public/quasi-public uses (to site a water tank), and an increase of approximately 17 acres of residential land uses. However, no increases in the number of dwelling units from that approved under the FPASP would occur. Therefore, the overall density of residential development would decrease.

The proposed land use and zoning modifications require the City's approval of a GPA and SPA as well as the preparation and adoption of an environmental document that will examine and identify any potential significant adverse environmental impacts that may result from implementation.

2.2 PROJECT LOCATION

The FPASP area is located within the City of Folsom, south of U.S. Highway 50 and north of White Rock Road, between Prairie City Road and the El Dorado County line (Exhibit 2-1). The Folsom Heights project area is located along the north-eastern boundary of the FPASP area, just south of U.S. Highway 50, along the Sacramento County/El Dorado County line (Exhibit 2-2 and Exhibit 2-3).

2.3 EXISTING SETTING

The project area is undeveloped grassland, currently used for cattle grazing. Developed land north of the project area consists of large residential and commercial developments. The topography of the area consists of gently rolling hills.

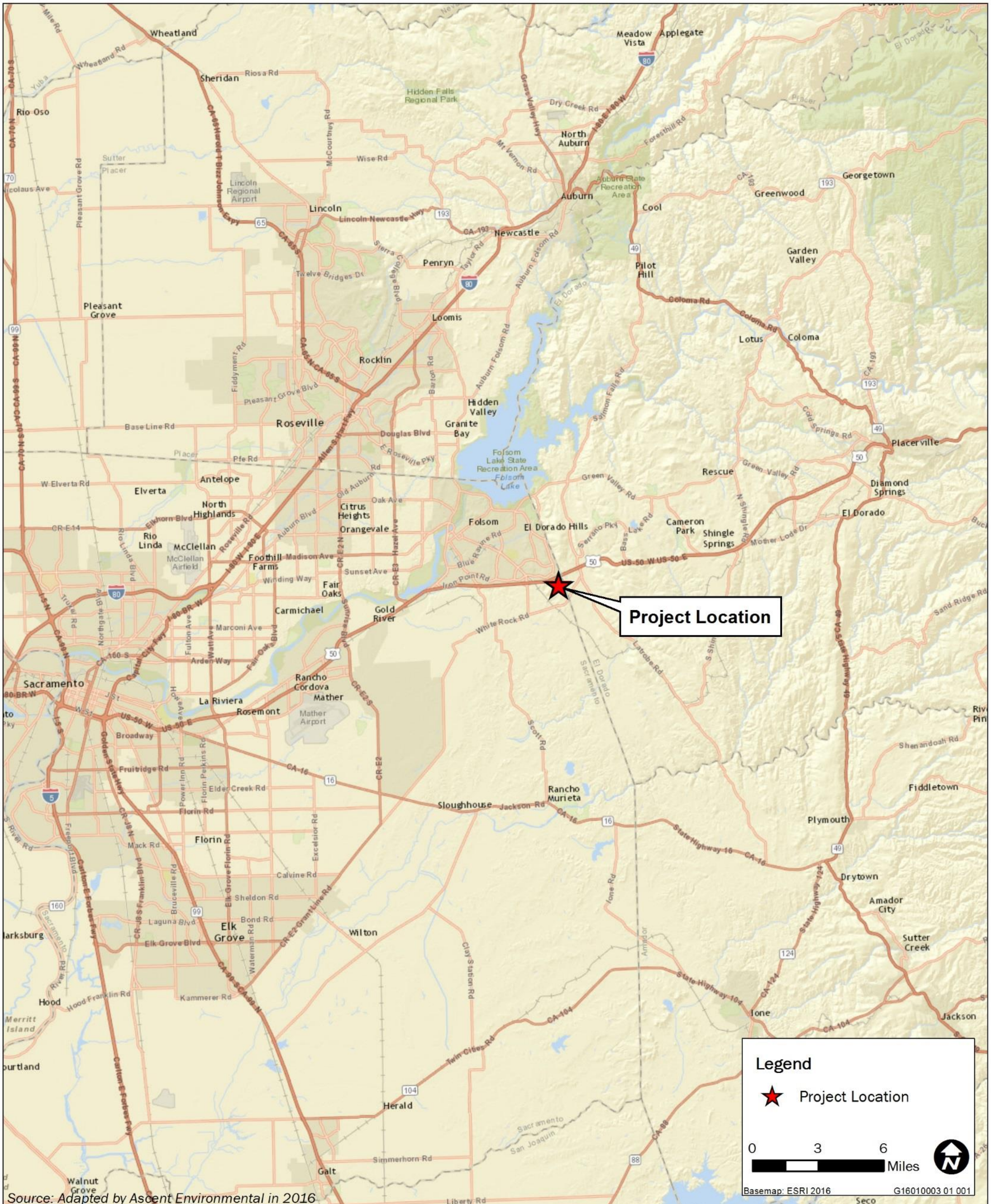


Exhibit 2-1 **Regional Location**

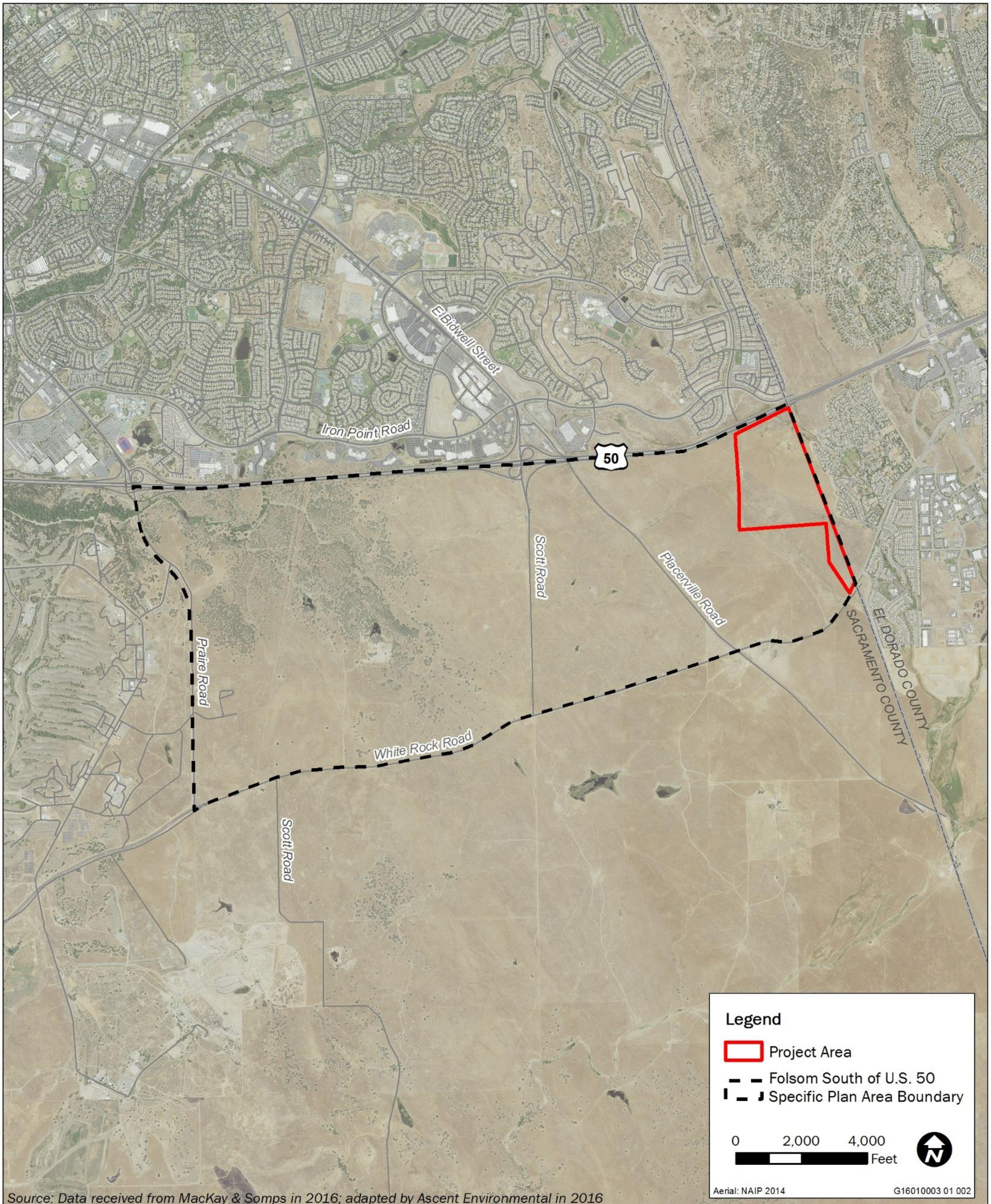


Exhibit 2-2 **Project Vicinity**

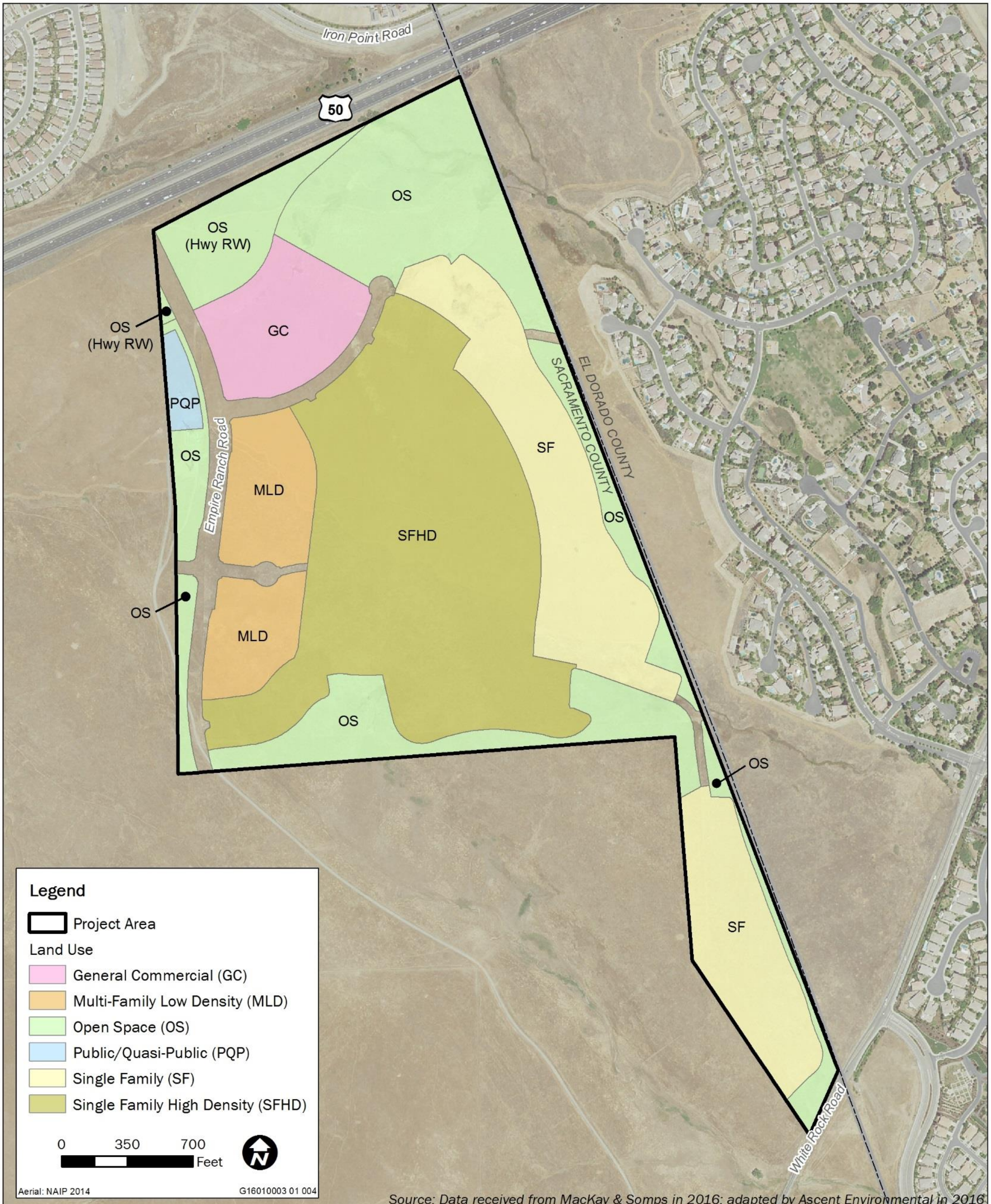


Exhibit 2-3 **Folsom Heights Specific Plan Amendment**

ASCENT ENVIRONMENTAL

2.4 PROJECT OBJECTIVES

The FPASP's objectives, as described in the EIR/EIS for the FPASP (City of Folsom 2010: p. 1-7) are the following:

1. Be consistent with the City of Folsom's General Plan and implement SACOG Smart Growth Principles.
2. Expand the City's boundaries based on the ultimate boundaries of development that the City can reasonably control and service, and do so in a manner that would foster orderly urban development and discourage leapfrog development and urban sprawl.
3. Annex those parcels of land adjacent to the City limit and within the City's Sphere of Influence whose development could have significant visual, traffic, public service, and environmental impacts on the City so that the City may influence the ultimate development of those parcels.
4. Provide a large-scale mixed-use and mixed-density residential housing development within the City of Folsom, south of U.S. 50.
5. Develop several distinct neighborhoods within the project site, connected by a substantial open space area and recreational trail network.
6. Provide neighborhood- and regional-serving retail areas within the project site.
7. Provide a mix of housing types within the project site to diversify the City's housing stock.
8. Provide a combined high school/middle school and the appropriate elementary schools on site sufficient to meet the needs of the project.
9. Provide the appropriate number and size of onsite community and neighborhood parks sufficient to meet the needs of the project.
10. Generate positive fiscal impacts for the City through development within the project site.
11. Secure a sufficient and reliable water supply consistent with the requirements of Measure W and objectives of the Water Forum Agreement to support planned development within the SPA, which the City estimates to be 5,600 acre-feet per year.
12. Construct the necessary water supply delivery and treatment infrastructure to ensure the safe and reliable delivery of up to 5,600 acre-feet per year to the FSPAP.

2.5 SUMMARY OF PROPOSED SPECIFIC PLAN AMENDMENT

2.5.1 Changes to Section 4: Land Use & Zoning

The project includes several changes to the FPASP that require amendments to the land use and zoning designations. Table 2-1 shows the adopted land use summary, Table 2-2 shows the proposed land use summary for the project, and Table 2-3 shows the difference in land use acreage, dwelling units, population, and commercial square footage that would result from the project. As shown in the tables below, there would be an increase in residentially-designated land and a decrease in commercially-designated land. In addition to the changes shown in the below tables, the project would increase the amount of open space and include 1.8 acres of Public/Quasi-Public areas.

Table 2-1 Adopted FPASP Land Use Summary (Folsom Heights Project Area)

Land Use	Gross Area (Acres)	% of Site	Density Range (du/ac)	Target DU[1]	Percentage of Allocated Units	Projected Population[2]	Target FAR[3]	Potential Bldg. Area (SF)
Residential								
Single Family (SF)	35.03	18.5%	1 to 4	106	20.0%	310	–	–
Single Family High Density (SFHD)	31.02	16.4%	4 to 7	171	32.3%	499	–	–
Multi-Family Low Density (MLD)	27.94	14.7%	7 to 12	253	47.7%	491	–	–
Subtotal Residential	93.99	49.5%	–	530	100%	1,300	–	–
Commercial								
Mixed Use District (MU)	–	–	9 to 30	–	–	–	0.20	–
General Commercial (GC)	34.5	18.2%	–	–	–	–	0.25	376,794
Subtotal Commercial	34.5	18.2%	–	–	–	–	–	376,794
Open Space								
Open Space (OS)	43.14	22.7%	–	–	–	–	–	–
Circulation and Miscellaneous								
Utility Site (PQP)	–	–	–	–	–	–	–	–
Highway 50	10.60	5.6%	–	–	–	–	–	–
Major Roads	7.49	3.9%	–	–	–	–	–	–
Total Folsom Heights	**189.72**	**100%**	**–**	**530**	**100%**	**1,300**	**–**	**376,794**

Notes:

1 Target dwelling unit allocation for each land use is a planning estimate. Actual total dwelling units for each land use may be higher or lower as long as the total for each land use falls within the specified density range and the total residential unit count does not exceed the FPASP area maximum of 11,230 dwelling units.

2 Population calculated using 2.92 persons per single family unit and 1.94 persons per multifamily unit.

3 Floor Area Ratio (FAR) is the ratio of building area to parcel area. The target FAR may be higher or lower for each land use as long as the Plan Area maximum of 3,338,378 SF is not exceeded.

Table 2-2 Proposed Folsom Heights Land Use Summary

Land Use	Gross Area (Acres)	% of Site	Density Range (du/ac)	Target DU[1]	Percentage of Allocated Units	Projected Population[2]	Target FAR[3]	Potential Bldg. Area (sf)
Residential								
Single Family (SF)	39.72	20.9%	1 to 4	125	23.5%	365	–	–
Single Family High Density (SFHD)	58.20	30.7%	4 to 7	280	52.8%	818	–	–
Multi-Family Low Density (MLD)	14.91	7.9%	7 to 12	125	23.5%	242	–	–
Subtotal Residential	112.83	59.5%	–	530	100%	1,425	–	–
Commercial								
General Commercial (GC)	11.49	6.1%	–	–	–	–	0.25	125,126
Subtotal Commercial	11.49	6.1%	–	–	–	–	–	–
Open Space								
Open Space (OS)	47.23	24.9%	–	–	–	–	–	–

Table 2-2 Proposed Folsom Heights Land Use Summary								
Land Use	Gross Area (Acres)	% of Site	Density Range (du/ac)	Target DU[1]	Percentage of Allocated Units	Projected Population[2]	Target FAR[3]	Potential Bldg. Area (sf)
Circulation and Miscellaneous								
Utility Site (PQP)	1.77	0.9%	–	–	–	–	–	–
Highway 50	8.87	4.7%	–	–	–	–	–	–
Major Roads	9.53	5.0%	–	–	–	–	–	–
Total Folsom Heights	**189.72**	**100%**	**–**	**530**	**100%**	**1,425**	**–**	**125,126**

Notes:
1 Target dwelling unit allocation for each land use is a planning estimate. Actual total dwelling units for each land use may be higher or lower as long as the total for each land use falls within the specified density range and the total residential unit count does not exceed the FPASP area maximum of 11,230 dwelling units.
2 Population calculated using 2.92 persons per single family unit and 1.94 persons per multifamily unit.
3 Floor Area Ratio (FAR) is the ratio of building area to parcel area. The target FAR may be higher or lower for each land use as long as the Plan Area maximum of 3,338,378 SF is not exceeded.

Table 2-3 Summary of Changes Associated with the Project				
Land Use	Gross Area (Acres)	Dwelling Units	Projected Population (persons)	Potential Bldg. Area (SF)
Single Family (SF)	+2.7	-	+55	-
Single Family High Density (SFHD)	+27.2	-	+319	-
Multi-Family Low Density (MLD)	-13.0	-	-249	-
General Commercial (GC)	-23.0	-	-	-251,668
Open Space (OS)	+4.1	-	-	-
Utility Site (PQP)	+1.8	-	-	-
Highway 50	-0.7	-	-	-
Major Roads	+0.9	-	-	-
Total	0.0	0	+125	-251,668

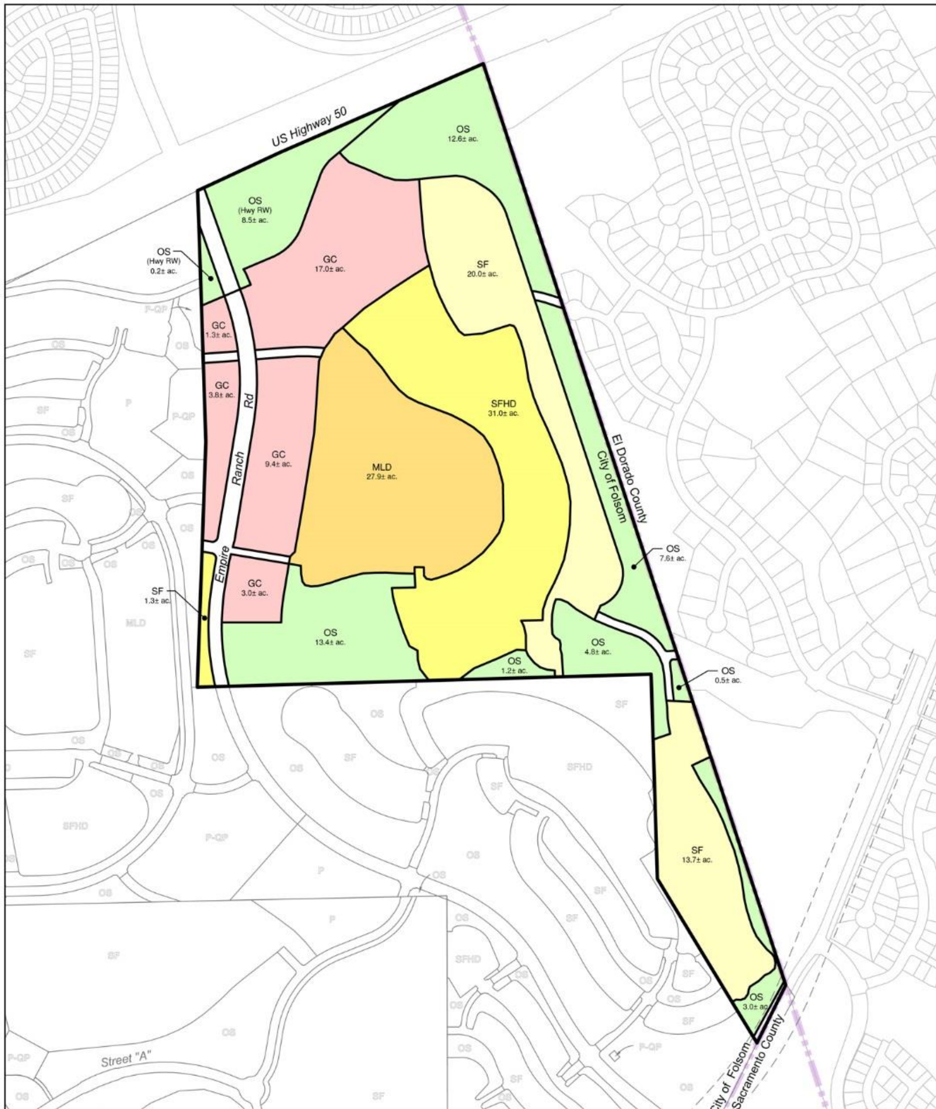
Note: Numbers may not match exactly because of small rounding errors.
Source: Adapted by Ascent Environmental 2016

2.5.2 Changes to Section 5: Housing Strategies

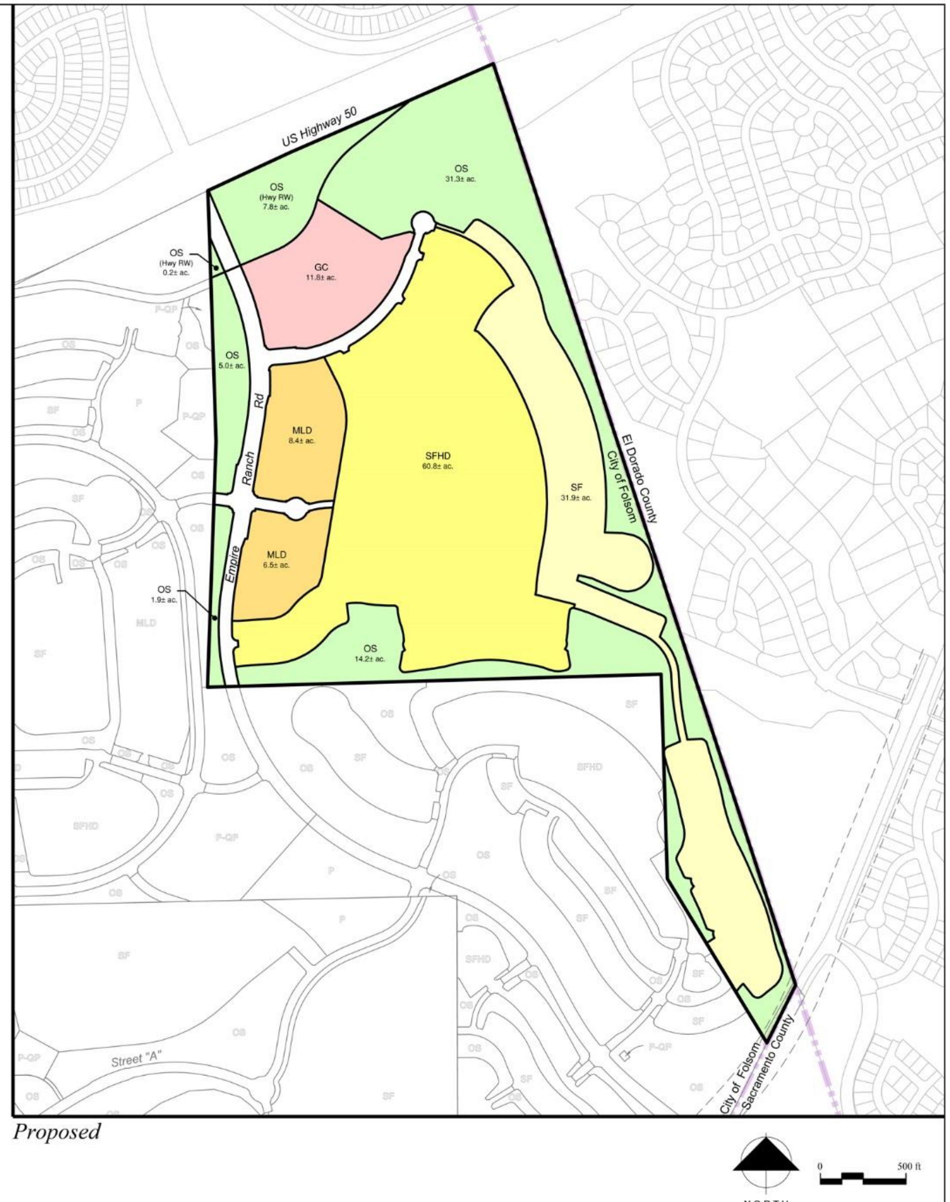
The project includes several amendments to Section 5 of the FPASP. Amendments to the housing goals and policies listed in FPASP Section 5.2 are proposed to be consistent with the most current City of Folsom Housing Element. Additional amendments to this section of the FPASP include changes to Section 5.5 Regional Housing Needs Plan (RHNP), Section 5.6 Affordable Housing, and Subsection 5.6.1 Affordable Housing Ordinance to be consistent with changes to State Housing Law and the adoption of an Inclusionary Housing Ordinance by the City of Folsom in 2013.

2.5.3 Changes to Section 8: Open Space

The project includes changes to the locations of Open Space designated lands (see Exhibit 2-4), and the total area of land designated for Open Space would increase by 4.1 acres.



Existing



Proposed

Source: MacKay & Somps 2016

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Exhibit 2-4 **Folsom Heights Plan Area (FPASP/Proposed Land Use)**

2.6 REQUIRED DISCRETIONARY ACTIONS

2.6.1 Lead Agency

Table 2-4, below, shows the entitlements, approvals, and permits needed to develop the project as it moves forward through the entitlement process. The entitlements in bold are those that would be required with consideration of this Addendum. It should be noted that if the Addendum is approved, no physical development would commence until such time the applicant secures all entitlements noted below.

Table 2-4 Entitlements, Approvals and Permits

Entitlement/Approval or Permit Needed	Agency
Planned Development Permit	Folsom City Council
General Plan (Land Use) Amendment	**Folsom City Council**
Specific Plan (Rezone) Amendment	**Folsom City Council**
Large Lot Vesting Tentative Subdivision Map	Folsom City Council
Small Lot Vesting Tentative Subdivision Map	Folsom City Council
Development Agreement	Folsom City Council
Grading Permit	Folsom City Council
Design Guidelines	Folsom City Council

Notes: **BOLD** – Items in **bold** are under consideration as part of this Addendum

2.6.2 Responsible Agencies

In addition to the list of entitlements, approvals, and/or permits identified in Table 2-4 above that must be obtained from the City of Folsom, the following approvals, consultations, and/or permits may be required from other agencies prior to physical development of the site. However, none of the entitlements listed below would be required prior to consideration of this Addendum.

FEDERAL ACTIONS/PERMITS

- U.S. Army Corps of Engineers: Department of the Army permit under Section 404 of the CWA for discharges of dredge or fill material into waters of the U.S. Consultation for impacts on cultural resources pursuant to Section 106 of the National Historic Preservation Act. Consultation for impacts on federally listed species pursuant to Section 7 of the ESA.
- U.S. Environmental Protection Agency: concurrence with Section 404 CWA permit.
- U.S. Fish and Wildlife Service: ESA consultation and issuance of incidental-take authorization for the take of federally listed endangered and threatened species.
- National Marine Fisheries Service: ESA consultation and issuance of incidental-take authorization for the take of federally listed endangered and threatened species.

STATE ACTIONS/PERMITS

- California Department of Fish and Wildlife, Sacramento Valley—Central Sierra Region: California Endangered Species Act consultation and issuance of take authorization (if needed) (California Fish and Game Code Section 2081), streambed alteration agreement (California Fish and Game Code Section 1602), and protection of raptors (California Fish and Game Code Section 3503.5).

- California Department of Transportation: encroachment permits; approval of landscaping plans and specifications for landscape corridor adjacent to U.S. Highway 50.

- Central Valley Regional Water Quality Control Board (Region 5): National Pollutant Discharge Elimination System (NPDES) construction stormwater permit (Notice of Intent to proceed under General Construction Permit) for disturbance of more than 1 acre; discharge permit for stormwater; general order for dewatering; and Section 401 CWA certification or waste discharge requirements; Clean Water Act, Section 401 Water Quality Certification; NPDES permit coverage for hydrostatic testing of pipeline (coverage expected under General Order for Low Threat Discharges to Surface Water).

- State Historic Preservation Officer (SHPO): approval of a Programmatic Agreement and/or MOU for Section 106 compliance with the National Historic Preservation Act.

- California Department of Public Health: approval of an amendment to the City's Public Water System Permit.

REGIONAL AND LOCAL ACTIONS/PERMITS

- Sacramento Metropolitan Air Quality Management District: authority to construct (for devices that emit air pollutants), health risk assessment, and Air Quality Management Plan consistency determination.

- El Dorado Irrigation District: commitment to serve letter based on a facility plan report.

- El Dorado County: approval of roadway encroachment permit for pipeline construction.

- Sacramento County: approval of roadway encroachment permit for pipeline construction, rezoning, use permit, and approval of grading permit.

- City of Folsom: roadway encroachment permit for pipeline construction, tree removal permit (if needed), rezoning, and use permit.

3 ENVIRONMENTAL CHECKLIST FOR SUPPLEMENTAL ENVIRONMENTAL REVIEW

3.1 EXPLANATION OF CHECKLIST EVALUATION CATEGORIES

The purpose of this checklist is to evaluate the categories in terms of any "changed condition" (i.e., changed circumstances, project changes, or new information of substantial importance) that may result in environmental impact significance conclusions different from those found in the 2011 EIR. The row titles of the checklist include the full range of environmental topics, as presented in Appendix G of the State CEQA Guidelines. The column titles of the checklist have been modified from the Appendix G presentation to help answer the questions to be addressed pursuant to CEQA Section 21166 and State CEQA Guidelines Section 15162. A "no" answer does not necessarily mean that there are no potential impacts relative to the environmental category, but that there is no change in the condition or status of the impact because it was analyzed and addressed with mitigation measures in the EIR/EIS. For instance, the environmental categories might be answered with a "no" in the checklist because the impacts associated with the proposed project were adequately addressed in the EIR/EIS, and the environmental impact significance conclusions of the EIR/EIS remain applicable. The purpose of each column of the checklist is described below.

3.1.1 Where Impact was Analyzed

This column provides a cross-reference to the pages of the EIR/EIS where information and analysis may be found relative to the environmental issue listed under each topic. Unless otherwise specified, all references point to the Draft EIR/EIS document.

3.1.2 Do Proposed Changes Involve New Significant Impacts?

The significance of the changes proposed to the approved FPASP, as it is described in the certified FPASP EIR/EIS, is indicated in the columns to the right of the environmental issues.

3.1.3 Any new Circumstances Involving New or Substantially More Severe Significant Impacts?

Pursuant to Section 15162(a)(2) of the CEQA Guidelines, this column indicates whether there have been changes to the project site or the vicinity (circumstances under which the project is undertaken) that have occurred subsequent to the prior environmental documents, which would result in the current project having new significant environmental impacts that were not considered in the prior environmental documents or having substantial increases in the severity of previously identified significant impacts.

3.1.4 Any New Information Requiring New Analysis or Verification?

Pursuant to Section 15162(a)(3)(A-D) of the CEQA Guidelines, this column indicates whether new information of substantial importance which was not known and could not have been known with the exercise of reasonable diligence at the time the previous environmental documents were certified as complete is available, requiring an update to the analysis of the previous environmental documents to verify that the environmental conclusions and mitigation measures remain valid. If the new information shows that: (A) the project will have one or more significant effects not discussed in the prior environmental documents; or (B) that significant effects previously examined will be substantially more severe than shown in the prior environmental documents; or (C) that mitigation measures or alternatives previously found not to be feasible would in fact be feasible and would substantially reduce one or more significant effects or the project, but the project proponents decline to adopt the Mitigation Measure or alternative; or (D) that mitigation measures or alternatives which are considerably different from those analyzed in the prior environmental documents would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the Mitigation Measure or alternative, the question would be answered "yes" requiring the preparation of a subsequent EIR or supplement to the EIR. However, if the additional analysis completed as part of this Environmental Checklist Review finds that the conclusions of the prior environmental documents remain the same and no new significant impacts are identified, or identified significant environmental impacts are not found to be substantially more severe, the question would be answered "no" and no additional EIR documentation (supplement to the EIR or subsequent EIR) would be required.

Notably, where the only basis for preparing a subsequent EIR or a supplement to an EIR is a new significant impact or a substantial increase in the severity of a previously identified impact, the need for the new EIR can be avoided if the project applicant agrees to one or more mitigation measures that can reduce the significant effect(s) at issue to less than significant levels. (See *River Valley Preservation Project v. Metropolitan Transit Development Board* (1995) 37 Cal.App.4th 154, 168.)

3.1.5 Do Prior Environmental Documents Mitigations Address/Resolve Impacts?

This column indicates whether the prior environmental documents and adopted CEQA Findings provide mitigation measures to address effects in the related impact category. In some cases, the mitigation measures have already been implemented. A "yes" response will be provided in either instance. If "NA" is indicated, this Environmental Checklist Review concludes that there was no impact, or the impact was less-than-significant and, therefore, no mitigation measures are needed.

3.2 DISCUSSION AND MITIGATION SECTIONS

3.2.1 Discussion

A discussion of the elements of the checklist is provided under each environmental category to clarify the answers. The discussion provides information about the particular environmental issue, how the project relates to the issue, and the status of any mitigation that may be required or that has already been implemented.

3.2.2 Mitigation Measures

Applicable mitigation measures from the prior environmental review that would apply to the proposed amendment are listed under each environmental category. New mitigation measures are included, if needed.

3.2.3 Conclusions

A discussion of the conclusion relating to the need for additional environmental documentation is contained in each section.

3.2.4 Acronyms Used in Checklist Tables

Acronyms used in the Environmental Checklist tables and discussions include:

EIR/EIS	Environmental Impact Report/Environmental Impact Statement
MM	Mitigation Measure
NA	not applicable

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4 ENVIRONMENTAL CHECKLIST

4.1 AESTHETICS

Environmental Issue Area	Where Impact Was Analyzed in the EIR/EIS.	Do Any New Circumstances Involve New or Substantially More Severe Significant Impacts?	Any New Information Requiring New Analysis or Verification?	Do Prior Environmental Documents Mitigations Address/Resolve Impacts?
1. Aesthetics. Would the project:				
a. Have a substantial adverse effect on a scenic vista?	Setting pp. 3A.1-2 to 3A.1-22 Impacts 3A.1-1	No	No	Yes, but impact still remains significant and unavoidable
b. Substantially damage scenic resources, including but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	Setting p. 3A.1-26 Impact 3A.1-2	No	No	Yes, issue addressed but mitigation is still not feasible
c. Substantially degrade the existing visual character or quality of the site and its surroundings?	Setting pp. 3A.1-1 to 3A.1-20 Impacts 3A.1-3 and 3A.1-4	No	No	Yes, but impact still remains significant and unavoidable
d. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	Setting p. 3A.1-22 Impacts 3A.1-5, 3A.1-6	No	No	Yes

4.1.1 Discussion

No substantial change in the environmental and regulatory settings related to aesthetics, described in the EIR/EIS Section 3A.1 Aesthetics – Land, has occurred since certification of the EIR/EIS in 2011.

a) Have a substantial adverse effect on a scenic vista?

As described in the Aesthetics setting (see page 3A.1-2) of the FPASP EIR/EIS, the project site and surrounding area is part of a large stretch of undeveloped land along U.S. 50 in eastern Sacramento County that contains oak woodlands and rock outcroppings; it is considered to be a scenic vista. Because the FPASP contains high levels of vividness, intactness, and unity, and because of its location along U.S. 50 where it is seen by thousands of motorists, viewer sensitivity is considered to be high. FPASP implementation would substantially degrade this scenic vista. In Impact 3A.1-1, the EIR/EIS concluded that viewsheds that include the FPASP are part of thousands of acres of open space that would no longer exist. Instead, this area would contain development that would substantially degrade the existing scenic view of the landscape. This area would become of similar visual quality to nearby developed land, and would no longer be considered a unique or scenic vista. The impact to a scenic vista was determined to be significant.

Implementation of Mitigation Measure 3A.1-1 was concluded to reduce the impact of substantial alteration of a scenic vista, but not to a less-than-significant level. This mitigation would require the applicant to construct and maintain a landscape corridor adjacent to U.S. 50. No other feasible mitigation measures are available to reduce impacts associated with the alteration of scenic vistas from project development to a less-than significant level. Therefore, this impact remains significant and unavoidable.

The visual characteristics of the site have not changed since the preparation of the FPASP EIR/EIS. The project would affect the same area already analyzed and proposed changes to the plan would not substantially alter the development type or density at the site such that different or more severe aesthetic impacts would result. Further, the project would comply with all appropriate mitigation identified in the EIR/EIS. Overall, substantial and adverse impacts to scenic vistas would remain and would be similar to what would occur under the FPASP. No new significant impacts or substantially more severe impacts would occur; therefore, the findings of the certified EIR/EIS remain valid and no further analysis is required.

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

At the time of the certification of the EIR/EIS there were no officially designated State Scenic Highways or National Scenic Byways with views of the site. However, Scott Road south of White Rock Road was identified as a designated scenic corridor in Sacramento County because it is considered to be located within an especially scenic rural portion of Sacramento County. As described in the FPASP EIR/EIS, project implementation would substantially damage views from the portion of Scott Road designated as a scenic corridor. No mitigation measures were found feasible to reduce or eliminate this impact, therefore, the impact was concluded to remain significant and unavoidable. No new scenic corridor designations have occurred since approval of the FPASP. Scott Road continues to remain as a designated scenic corridor; therefore, the same visual impacts to this corridor would occur with implementation of the project as described in the FPASP EIR/EIS. Because the project would develop the site with a similar development pattern and land uses as described in the FPASP EIR/EIS, no new significant impacts or substantially more severe impacts would occur. The findings of the certified EIR/EIS remain valid and no further analysis is required.

c) Substantially degrade the existing visual character or quality of the site and its surroundings?

Impact 3A.1-3 of the EIR/EIS describes permanent changes to the visual character of the FPASP area, while Impact 3A.1-4 describes temporary, short-term construction-related changes to visual character. At full buildout, the visual character of the FPASP (including Folsom Heights) would consist of developed urban land uses with intermittent areas of open space and parks. The development is required to preserve at least 30 percent as natural open space. However, motorists on surrounding roadways and other sensitive viewers would no longer have views of expansive grasslands within the project site.

Implementation of the FPASP would result in conversion of grassy hillsides to urban areas, generally consisting of housing units and commercial developments. Views would be permanently altered to urban development, substantially degrading viewsheds located on Scott Road, Placerville Road, White Rock Road, U.S. 50, and for people located within the community of El Dorado Hills, the City of Folsom, and nearby rural residences. In addition, the presence and movement of heavy construction equipment and staging areas could temporarily degrade the existing visual character and/or quality of the FPASP and surrounding area for existing developed land uses. Given the large scale of this urban development and the rural nature of its setting, the EIR/EIS concluded that the degradation of visual character at the FPASP would be significant.

Implementation of Mitigation Measures 3A.1-1 and 3A.7-4 in the FPASP EIR/EIS would reduce significant impacts associated with substantial adverse effects on changes to visual character by reducing the extent of grading within the FPASP and providing a 50-foot-wide landscaped corridor between U.S. 50 and the FPASP. Implementation of Mitigation Measure 3A.1-4 would reduce significant impacts associated with temporary visual-quality degradation for developed land uses from concurrent construction staging areas by providing visual screening. However, the EIR/EIS concluded that implementation of screening may not always be feasible. Overall, it was determined that even with implementation of mitigation, the FPASP would substantially alter a scenic vista and the impact was concluded to be significant and unavoidable.

The project would affect the same area analyzed for development in the FPASP EIR/EIS and proposed changes would not substantially alter the development type or density at the site. No changes to the visual character of the site or surrounding areas have occurred since approval of the EIR/EIS. Therefore, no new significant impacts or substantially more severe impacts would occur, and the findings of the certified EIR/EIS remain valid and no further analysis is required.

d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

The proposed amendment to the FPASP would not result in substantial changes in land use within the specific plan area. Two impacts in the EIR/EIS described how the FPASP would contribute to the creation of a new source of substantial light or glare and new skyglow (Impacts 3A.1-5 and 3A.1-6). Because of the scale of proposed FPASP development and because FPASP implementation would introduce a substantial quantity of light into a rural landscape, overall light and glare effects were determined to be significant. Implementation of Mitigation Measure 3A.1-5 would reduce significant impacts associated with new sources of light and glare to a less-than-significant level. This mitigation would be applicable to the project. No changes in the proposed nighttime lighting conditions for the Folsom Heights area have occurred since approval of the FPASP. Therefore, no new significant impacts or substantially more severe impacts would occur. The findings of the certified EIR/EIS remain valid and no further analysis is required.

Mitigation Measures

The following mitigation measures were adopted with the FPASP and would continue to remain applicable if the project is approved.

- Mitigation Measure 3A.1-1: Construct and maintain a landscape corridor adjacent to U.S. 50.
- Mitigation Measure 3A.1-4: Screen construction staging areas.
- Mitigation Measure 3A.1-5: Establish and require conformance to lighting standards and prepare and implement a lighting plan.

The FPASP EIR/EIS concluded that impacts to light and glare would be reduced to a less-than-significant level; however, impacts related to skyglow would remain significant and unavoidable. This conclusion would not change with implementation of the project.

CONCLUSION

No new circumstances or project changes have occurred nor has any new information been found requiring new analysis or verification. Therefore, the conclusions of the EIR/EIS remain valid and approval of the project would not result in new or substantially more severe significant impacts to aesthetics.

4.2 AGRICULTURE AND FOREST RESOURCES

Environmental Issue Area		Where Impact Was Analyzed in the EIR/EIS.	Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	Any New Information Requiring New Analysis or Verification?	Do Prior Environmental Documents Mitigations Address/Resolve Impacts?
2.	Agriculture and Forestry Resources. Would the project:				
a.	Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	Setting pp. 3A.10-2, 3A.10-5, 3A.10-6 No Impact	No	No	NA
b.	Conflict with existing zoning for agricultural use, or a Williamson Act contract?	Setting pp. 3A.10-2 to 3A.10-4, 3A.10-6, 3A.10-7 Impacts 3A.10-3 and 3A.10-4	No	No	Yes
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))?	Not addressed, criterion was not part of Appendix G when EIR/EIS was certified	No	No	NA
d.	Result in the loss of forest land or conversion of forest land to non-forest land?	Not addressed, criterion was not part of Appendix G when EIR/EIS was certified	No	No	NA
e.	Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	Not addressed, criterion was not part of Appendix G when EIR/EIS was certified	No	No	NA

4.2.1 Discussion

No substantial change in the environmental and regulatory settings related to Agriculture and Forest Resources, described in EIR/EIS Section 3A.10 Land Use and Agricultural Resources – Land, has occurred since certification of the EIR/EIS in 2011. However, Appendix G changed since the EIR/EIS was certified with the additions of checklist items c), d), and e), above.

a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

As described in the EIR/EIS, the FPASP does not include any agricultural land designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance as defined in Appendix G of the State CEQA Guidelines. There is no impact. Farmland Mapping and Monitoring Program designations for the site have not changed since approval of the FPASP. Therefore, no impacts to farmland resources would occur with the project. Because there are no new significant impacts or substantially more severe impacts, the findings of the certified EIR/EIS remain valid and no further analysis is required.

b) Conflict with existing zoning for agricultural use or a Williamson Act contract?

As described in Table 3A.10-1 of the EIR/EIS, there are no parcels within the Folsom Heights project area that are under Williamson Act contract. Approximately 1,530 acres of the SPA consist of agricultural lands under existing Williamson Act contracts; therefore, Impact 3A.10-3 assumes that implementation of the FPASP would require the cancellation of one or more Williamson Act contracts before their expiration date. The FPASP EIR/EIS concluded that impacts associated with conflicts with zoning for agricultural use or Williamson Act contracts would be significant (Impact 3A.10-3) and no feasible mitigation measures were available to ensure that the impact is less than significant. Although this impact was considered significant and unavoidable for the FPASP EIR/EIS, none of the affected Williamson Act parcels are within the Folsom Heights project area. Therefore, there would be no impact to Williamson Act lands with implementation of the project. Because there are no new significant impacts or substantially more severe impacts, the findings of the certified EIR/EIS remain valid and no further analysis is required.

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))?

The FPASP EIR/EIR did not address forestry issues. Nonetheless, there is no forest land or timberland on or near the project area. Therefore, there would be no conflicts with lands designated for forestry uses and no impact would occur.

d) Result in the loss of forest land or conversion of forest land to non-forest use?

The FPASP EIR/EIR did not address forestry issues. Nonetheless, there is no forest land or timberland on or near the project area. Therefore, the project would not result in the loss or conversion of forest land and no impact would occur.

e) Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?

The project area was rezoned as part of the FPASP approval from agricultural land use designations to urban designations. While the project includes some changes to the land use designations onsite, proposed designations would continue to be urban, similar to approved land uses. The project would not involve the conversion of farmland that was not previously evaluated in the EIR/EIS and no new impacts would occur. Because there are no new significant impacts or substantially more severe impacts, the findings of the certified EIR/EIS remain valid and no further analysis is required.

Mitigation Measures

There were no mitigation measures included in the EIR/EIS for this topic.

CONCLUSION

Since the EIR/EIS was certified, no new circumstances have occurred nor has any new information been found requiring new analysis or verification. Therefore, the conclusions of the certified EIR/EIS remain valid and implementation of the project would not result in any new significant impacts associated with agriculture and forest resources.

4.3 AIR QUALITY

Environmental Issue Area	Where Impact Was Analyzed in the EIR/EIS.	Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	Any New Information Requiring New Analysis or Verification?	Do Prior Environmental Documents' Mitigations Address/Resolve Impacts?
3. Air Quality. Would the project:				
a. Conflict with or obstruct implementation of the applicable air quality plan?	Setting p. 3A.2-10 to 3A.2-10; Impact 3A.2-1 and Impact 3A.2-2	No.	Yes	Yes, but impact remains significant and unavoidable
b. Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	Setting p. 3A.2-2 to 3A.2-8; Impact 3A.2-1, Impact 3A.2-2, and Impact 3A.2-3	No.	Yes	Yes, but impact remains significant and unavoidable
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)?	and Cumulative analysis on p. 4-22 to 4-23	No.	Yes	Yes, but impact remains significant and unavoidable
d. Expose sensitive receptors to substantial pollutant concentrations?	Setting p. 3A.2-7 to 3A.2-10 and 3A.2-20 to 3A.2-23; Impact 3A.2-4; and Cumulative analysis on p. 4-23 to 4-26	No.	Yes	Yes, mitigation has been updated.
e. Create objectionable odors affecting a substantial number of people?	Setting p. 3A.2-9; Impact 3A.2-6	No.	Yes	Yes, mitigation has been updated.

4.3.1 Discussion

No substantial change in the environmental and regulatory settings related to Air Quality, described in EIR/EIS Sections 3A.2 and 3B.2 under Air Quality, has occurred since certification of the EIR in 2011. The Sacramento Valley Air Basin is nonattainment with respect to the National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standard (CAAQS) for ozone and particulate matter with an aerodynamic diameter of 2.5 micrometers or less ($PM_{2.5}$); and also nonattainment of the CAAQS for particulate matter with an aerodynamic diameter of 10 micrometers or less (PM_{10}) (SMAQMD 2013). There has also been no substantial change to how the Sacramento Air Quality Management District (SMAQMD) recommends evaluating the air quality impacts of proposed development projects (SMAQMD 2009).

a) Conflict with or obstruct implementation of the applicable air quality plan?

Construction-Generated Emissions of NO_X

As stated under Impact 3A.2-1 in the FPASP EIR/EIS, the mass emissions threshold for oxides of nitrogen (NO_X) established by SMAQMD was used to determine whether construction-generated emission of NO_X, an ozone precursor, would conflict with implementation of SMAQMD's federal and State ozone attainment plans and/or contribute substantially or result in an exceedance of the NAAQS and CAAQs for ozone. The analysis determined that maximum daily emissions of NO_X generated by construction of the FPASP would exceed SMAQMD's recommended threshold of 85 pounds per day (lbs./day). It also acknowledged that some portions of the FPASP, such as the Folsom Heights project site, would be undergoing construction while other portions of the FPASP would not. Thus, the level of maximum daily emissions of NO_X generated by construction of the project would also exceed SMAQMD's mass emission threshold of 85 lbs./day. The types of emissions-generating construction activity would generally be the same under the project as the adopted plan for Folsom Heights, as well as the quantity of land that would be developed and the intensity and pace of construction. Therefore, the maximum daily level of NO_X generated by construction of the project would be approximately the same as determined in the FPASP EIR/EIS.

Implementation of SMAQMD's Basic Construction Emission Control Practices and Enhanced Exhaust Control Practices, as required by Mitigation Measure 3A.2-1a of the FPASP EIR/EIS, and payment of an off-site mitigation fee to off-set construction-generated NO_X emissions, as required by Mitigation Measure 3A.2-1b of the FPASP EIR/EIS, would reduce emissions of NO_X associated with construction of the project to levels that do not exceed SMAQMD's threshold of significance of 85 lbs/day. With the implementation of Mitigation Measures 3A.2-1a and 3A.2-1b adopted as part of the FPASP EIR/EIS, the project would not result in a new or substantially more severe impacts related to NO_X emissions.

Construction-Generated Emissions of PM_{10}

The FPASP EIR/EIS provides a program-level analysis of construction-generated PM_{10} emissions under Impact 3A.2-1. SMAQMD recommends that project-level analysis be conducted to determine the maximum concentration of PM_{10} by performing air dispersion modeling with U.S. Environmental Protection Agency's (EPA) AERMOD model if the maximum daily acreage of ground disturbance would exceed 15 acres. However, dispersion modeling was not performed for this program-level analysis because detailed information about grading activities and the locations and occupancy timing of future planned on-site receptors was not known at the time of writing the FPASP EIR/EIS. The FPASP EIR/EIS determined it would be likely that more than 15 acres of ground disturbance activity would occur in one day and; thus, concluded that that ground-disturbing activities associated with site construction (i.e., grading, earth movement) would result in concentrations of PM_{10} that exceed or substantially contribute to exceedances of the NAAQS or CAAQS. These exceedances would conflict with SMAQMD's air quality planning efforts.

Implementation of SMAQMD's Basic Construction Emission Control Practices, Enhanced Fugitive PM Dust Control Practices for Soil Disturbance Areas, and Enhanced Fugitive PM Dust Control Practices for Unpaved Roads, as required by Mitigation Measure 3A.2-1a of the FPASP EIR/EIS, would reduce PM_{10} concentrations generated during construction. Nonetheless, resultant PM_{10} concentrations could potentially exceed or substantially contribute to the CAAQS and NAAQS because the intensity of construction activity and the acreage of ground disturbance that could occur at any one point in time could be substantially high and/or take place in close proximity to existing or future planned sensitive receptors (e.g., residents, schools). Therefore, PM_{10} emissions associated with construction would be significant and unavoidable unless the results of a detailed project-level analysis, as required by Mitigation Measure 3A.2-1c, support another impact conclusion. Mitigation Measure 3A.2-1c requires a detailed project-level analysis after project phasing has been determined and tentative maps and improvement plans have been prepared.

Construction of land uses in the Folsom Heights project would also likely involve more than 15 acres of grading in a single day. Thus, construction-generated concentrations of PM_{10} could also exceed or substantially contribute to exceedances of the NAAQS or CAAQS and conflict with SMAQMD planning efforts. However, because the intensity of grading activity, the types of ground disturbance equipment used, and the types of soils disturbed would be similar, PM_{10} concentrations resulting from construction of the project are not anticipated to be substantially greater than was analyzed in the FPASP EIR/EIS. Nonetheless, project-level analysis will be needed, based on dispersion modeling, as required by Mitigation Measure 3A.2-1c. With the implementation of Mitigation Measure 3A.2-1c adopted as part of the FPASP EIR/EIS, the project would not result in new or substantially more severe impacts related to PM_{10} emissions.

Long-Term, Operation-Related (Regional) Emissions of Criteria Air Pollutants and Precursor Emissions

In the 2010 FPASP EIR/EIS, operational emissions of criteria air pollutants and precursors were evaluated for the entire FPASP using the Urban Emissions Model (URBEMIS) 2007 version 9.2.4, which was the widely-accepted emissions modeling tool at that time. URBEMIS has been superseded by the contemporary air quality modeling tool for use in CEQA analysis in California: The California Emissions Estimator Model (CalEEMod).

SMAQMD started recommending use of CalEEMod to estimate emissions of land use development projects in April 2013. The new model does not constitute "new information" as defined in CEQA Guidelines Section 15162 because a similar model estimating criteria air pollutant and precursor emissions was available at the time of the EIR/EIS. However, revised emissions modeling was conducted to ascertain what changes might have arisen in the recommended methodologies and emission factors since 2010. More specifically, CalEEMod was used to model both the adopted Folsom Heights plan and the proposed Folsom Heights SPA to determine whether the levels of operational emissions from these two planning scenarios would be substantially different. This modeling is based on default model setting for both scenarios.

Mobile-source emissions of criteria air pollutants and ozone precursors would result from employee commute trips, visitor trips, and other associated vehicle trips (e.g., deliveries of supplies, maintenance vehicles). Table 4.3-1 summarizes the modeled operation-related emissions of criteria air pollutants and precursors of both the adopted plan and the amended plan. As discussed in the project description, in general, the proposed application is largely consistent with the land uses proposed and approved for this portion of the FPASP.

Table 4.3-1 Summary of Maximum Daily Operational Emissions of Criteria Air Pollutants and Precursors for the Adopted and Amended Folsom Heights Plan in 2020[1]

Emissions Source	ROG (lbs./day)	NO_X (lbs./day)	PM_{10} (lbs./day)	$PM_{2.5}$ (lbs./day)
Adopted Folsom Heights Plan				
Vehicle Trips	37	107	60	17
Area Sources[2]	1,269	17	214	214
Natural Gas Combustion	Less than 1	5	Less than 1	Less than 1
Total	**1,307**	**129**	**274**	**231**
Amended Folsom Heights Plan				
Vehicle Trips	28	82	46	13
Area Sources[2]	1,461	20	248	248
Natural Gas Combustion	Less than 1	4	Less than 1	Less than 1
Total	**1,489**	**106**	**294**	**261**
Difference	**182**	**-23**	**20**	**30**
SMAQMD CEQA Thresholds	65	65	80[3]	82[3]

Notes: See Appendix A for detail on model inputs, assumptions, and modeling parameters.

1 Emission estimates shown in this table do not account for the emission reductions that would be achieved by implementation of the *Folsom Plan Area Specific Plan Air Quality Mitigation Plan*, which is required by Mitigation Measure 3A.2-2 of the FPASP EIR/EIS.

2 Area sources of emissions include landscaping equipment, architectural coatings, and consumer products (e.g., kitchen aerosols, cleaning supplies, cosmetics, and toiletries).

3 SMAQMD Board of Directors rescinded the 2002 concentration based thresholds for PM_{10} and $PM_{2.5}$ and adopted the new mass emissions PM_{10} and $PM_{2.5}$ thresholds on May 28, 2015, via resolution AQMD2015-022. The thresholds for PM_{10} and $PM_{2.5}$ are zero (0), unless all feasible BACT/BMPs are applied; if all feasible BACT/BMPs are applied, then the thresholds are the amount shown. BACT is best available control technology and BMPs are best management practices (SMAQMD 2015b).

ROG = reactive organic gases
NO_X = oxides of nitrogen
PM_{10} = respirable particulate matter with an aerodynamic diameter of 10 micrometers or less
$PM_{2.5}$ = respirable particulate matter with an aerodynamic diameter of 2.5 micrometers or less
lbs./day = pounds per day
BACT = best available control technology
BMPs = best management practices

Source: Modeling and calculations conducted by Ascent Environmental 2016.

Also shown in Table 4.3-1, maximum daily emissions of reactive organic gases (ROG) and NO_X for the Folsom Heights plan under the adopted FPASP and the project would exceed SMAQMD's mass emission thresholds. Therefore, the operational emissions associated with the project would still be expected to violate or contribute substantially to an existing air quality violation or conflict with air quality planning efforts to bring the Sacramento Valley Air Basin (SVAB) into attainment of the CAAQS and NAAQS for ozone.

Also shown in Table 4.3-1, operational emissions of ROG, PM_{10}, and $PM_{2.5}$ under the amended plan would be approximately 182, 20 and 30 lbs/day greater, respectively, than estimated for the adopted plan. These increases would not be considered to be substantial as such are similar in magnitude to the adopted plan and, in fact, NOx emissions under the amended plan would be 23 lbs/day less than the adopted plan. And, as discussed in the project description, in general, the proposed application is largely consistent with the land uses proposed and approved for this portion of the FPASP.

This impact would be significant and unavoidable, which is the same conclusion reached for Impact 3A.2-2 of the FPASP EIR/EIS. This impact is within the scope of the impact evaluated in the FPASP EIR/EIS and Mitigation Measure 3A.2-2 includes feasible best practices for reduction of operational emissions from land use-related sources, and no additional measures are recommended. Mitigation Measure 3A.2-2 would reduce this impact, but not to a less-than-significant level. While emissions were modeled to be slightly higher than presented in the FPASP EIR/EIS, this increase would not be substantial and in fact, NO_x emissions would decrease under the project. Therefore, no new or substantially more severe air quality impacts would occur from criteria air pollutants or precursors as a result of the project. The conclusions of the FPASP EIR/EIS remain valid and no further analysis is required.

b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?

<u>Construction-Generated Emissions of NO_X and PM_{10}</u>

As discussed in (a), above, the types of emission-generating construction activity would generally be the same under the project as the adopted Folsom Heights plan, as well as the quantity of land that would be developed, the amount of ground disturbance that exceeds 15 acres per day, and the intensity and pace of construction. Therefore, the maximum daily level of NO_X, an ozone precursor, and PM_{10} generated by construction of the amended Folsom Heights plan would be approximately the same as determined in the FPASP EIR/EIS. Implementation of SMAQMD's Basic Construction Emission Control Practices and Enhanced Exhaust Control Practices, as required by Mitigation Measure 3A.2-1a of the FPASP EIR/EIS, and payment of an off-site mitigation fee to off-set construction-generated NO_X emissions, as required by Mitigation Measure 3A.2-1b of the FPASP EIR/EIS, would reduce emissions of NO_X associated with construction of the project to levels that do not exceed SMAQMD's threshold of significance of 85 lbs/day. With the implementation of Mitigation Measures 3A.2-1a and 3A.2-1b adopted as part of the FPASP EIR/EIS, the project would not result in a new or substantially more severe impacts related to NO_X emissions.

Implementation of the dust control measures required by Mitigation Measure 3A.2-1a of the FPASP EIR/EIS, would reduce PM_{10} concentrations generated during construction but resultant PM_{10} concentrations could potentially exceed or substantially contribute to the CAAQS and NAAQS because the intensity of construction activity and the acreage of ground disturbance that could occur at any one point in time could be substantially high and/or take place in close proximity to existing or future planned sensitive receptors. PM_{10} concentrations resulting from construction of the project are not anticipated to be substantially greater than was analyzed in the FPASP EIR/EIS. The conclusions of the FPASP EIR/EIS remain valid and no further analysis is required.

<u>Long-Term, Operation-Related (Regional) Emissions of Criteria Air Pollutants and Precursor Emissions</u>

Also shown in Table 4.3-1 in (a), above, maximum daily emissions from operation of the project would exceed SMAQMD's mass emission thresholds, but would not be substantially greater than the adopted Folsom Heights plan and, in fact, NOx emissions decrease under the project. All applicable mitigation measures were recommended in Mitigation Measure 3A.2-2 of the FPASP EIR/EIS, and would minimize operation-related emissions, but not to less-than-significant levels. For these reasons, operation of the project could result in or substantially contribute to a violation of air quality standards related to ozone, which is the same conclusion reached in the FPASP EIR/EIS Therefore, the conclusions of the FPASP EIR/EIS remain valid and no further analysis is required.

Mobile-Source CO Concentrations

The potential for FPASP-induced traffic congestion at area intersections to result in relatively high concentrations of carbon monoxide (CO) near sensitive receptors is discussed under Impact 3A.2-3 of the FPASP EIR/EIS. Applying the "Second Tier" screening methodology recommended in SMAQMD's *Guide to Air Quality Assessment* (SMAQMD 2009) this analysis determined that FPASP-induced congestion would not result in or contribute to exceedances of the CAAQS or NAAQS for CO at affected intersections because none of these intersections would experience a traffic volume that exceeds 31,600 vehicles per hour. Thus, Impact 3A.2-3 was determined to be less than significant.

The project as amended would result in less vehicle trips and a lesser degree of daily vehicle miles traveled than this area under the adopted FPASP and; thus, it would not result in any intersection experiencing a traffic volume more than 31,600 vehicles per hour. This impact would be within the scope of the impact already evaluated in the FPASP EIR/EIS, and would be less than significant. The conclusions of the FPASP EIR/EIS remain valid and no further analysis is required.

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)?

Pages 4-22 through 4-29 of the FPASP EIR/EIS evaluated cumulative air quality impacts of the FPASP, which includes those attributable to the development in the area of the Folsom Heights plan under the adopted FPASP. Cumulative impacts on air quality associated with the project would be similar and are within the scope of the analysis in the FPASP EIR/EIS.

As discussed in (a), above, the adopted Specific Plan would result in exceedances of SMAQMD's significance criteria for NO_X and PM_{10} during project construction and operation. The amount of emissions generated during project construction and operation would be substantial compared with other projects in the region, and would be cumulatively considerable and; therefore, significant. In addition, all applicable mitigation measures were recommended in and adopted as Mitigation Measures 3A.2-1a, 3A.2-1b, and 3A.2-2 would minimize construction- and operation-related emissions, respectively, but not to less-than-significant levels. For these reasons, project construction and operation could result in or substantially contribute to a violation of air quality standards related to ozone and PM_{10} on a cumulative basis.

Mitigation Measures 3A.2-1a, 3A.2-1b, and 3A.2-2 were required to minimize the project's construction- and operation-related emissions. These mitigation measures include feasible best practices for reducing construction and operation-related emissions. No additional mitigation is recommended. The adopted FPASP would involve substantial development, and would generate emissions that would be considered substantial in the region. This cumulative impact on air quality would remain significant and unavoidable for the project. The conclusions of the FPASP EIR/EIS remain valid and no further analysis is required.

The FPASP EIR/EIS also evaluated cumulative air quality impacts associated with localized CO concentrations from traffic congestion at buildout of the FPASP. This cumulative impact was found to be less than significant. The project is within the scope of this impact analysis, and cumulative air quality impacts for localized CO would also be less than significant. The conclusions of the FPASP EIR/EIS remain valid and no further analysis is required.

d) Expose sensitive receptors to substantial pollutant concentrations?

Toxic Air Contaminant Concentrations

Temporary, Short-Term Emissions from Construction Equipment

Emissions of particulate exhaust from diesel-powered engines (diesel PM) including diesel-powered construction equipment were identified as a toxic air contaminant (TAC) by the California Air Resources

Board (ARB) in 1998. Impact 3A.2-4 of the FPASP EIR/EIS determined that diesel PM emissions generated during construction of the land uses on the FPASP site, including the Folsom Heights area, could expose nearby residents and schools to levels that exceed applicable standards as some phases of the development plan are built out while construction of other phases continues in both the Folsom Heights area and other portions of the FPASP area. This would particularly be the case when some new residents occupy dwelling units while other land uses are still under construction and some residents may be exposed to diesel PM generated by construction activity in all directions at varying stages of construction. Because construction activities could expose sensitive receptors to levels of health risk that exceed applicable standards, the FPASP EIR/EIS determined this impact to be potentially significant.

Mitigation Measure 3A.2-4a in the FPASP EIR/EIS requires project applicants of all phases to develop a plan that reduces the exposure of sensitive receptors, including residents and school children, to construction-generated TACs. Each plan shall be developed by the project applicant(s) in consultation with SMAQMD and each plan shall be submitted to the City for review and approval before the approval of any grading plans. While implementation of Mitigation Measure 3A.2-4a would lessen health-related risks associated with the use of off-road diesel powered equipment during construction activity, exposure to construction-generated TAC emissions would not necessarily be reduced to less-than-significant levels and; therefore, the potential exposure of receptors to construction-generated TAC emissions would be considered to be significant and unavoidable. This would also be true for the project because it would be built out over multiple years, and some residential dwelling units, and possibly the proposed elementary school, could be occupied and operational while nearby land uses are still under construction. Therefore, the conclusions of the FPASP EIR/EIS remain valid and no further analysis is required.

Stationary-Source Emissions

Impact 3A.2-4 of the FPASP EIR/EIS determined that any stationary sources of TACs developed under the FPASP or in close proximity to the FPASP planning area (e.g., dry cleaning operations, gasoline-dispensing facilities, and diesel-fueled backup generators, and restaurants using charbroilers) would be subject to the permitting requirements of SMAQMD and; consequently, operation of any stationary sources would not result in the exposure of sensitive receptors to TACs at levels exceeding SMAQMD’s significance threshold. Therefore, this direct impact is considered less than significant. This would also be true for the project and; thus, the conclusions of the FPASP EIR/EIS remain valid and no further analysis is required.

Emissions from On-Site Operational Mobile Sources

Impact 3A.2-4 of the FPASP EIR/EIS determined that buildout of the FPASP could potentially involve substantial volumes of TAC-emitting truck activity occurring in close proximity to nearby sensitive receptors and; therefore, that this impact would be potentially significant. The FPASP EIR/EIS made this determination because the types of commercial and industrial land uses developed under the FPASP and their location relative to residential land uses were unknown at the time of the analysis. The FPASP EIR/EIS included implementation of Mitigation Measures 3A.2-4b, which includes the following measures to reduce exposure of sensitive receptors to TACs from on-site mobile sources:

- Proposed commercial and industrial land uses that have the potential to emit TACs or host TAC-generating activity (e.g., loading docks) shall be located away from existing and proposed on-site sensitive receptors such that they do not expose sensitive receptors to TAC emissions that exceed an incremental increase of 10 in 1 million for the cancer risk and/or a noncarcinogenic Hazard Index of 1.0.

- Where necessary to reduce exposure of sensitive receptors to an incremental increase of 10 in 1 million for the cancer risk and/or a noncarcinogenic Hazard Index of 1.0, proposed commercial and industrial land uses that would host diesel trucks shall incorporate idle reduction strategies that reduce the main propulsion engine idling time through alternative technologies such as IdleAire, electrification of truck parking, and alternative energy sources for transport refrigeration units (TRUs), to allow diesel engines to be completely turned off.

- Signs shall be posted at all loading docks and truck loading areas which indicate that diesel-powered delivery trucks must be shut off when not in use for longer than 5 minutes on the premises to reduce idling emissions. This measure is consistent with the air toxic control measures (ATCMs) to Limit Diesel-

Fueled Commercial Motor Vehicle Idling, which was approved by the California Office of Administrative Law in January 2005.

The FPASP EIR/EIS determined that implementation of the above measures that are part of Mitigation Measure 3A.2-4b would lessen health-related risks associated with on-site mobile-source TACs, including truck activity at land uses proposed in the FPASP.

The project would not include any industrial land uses and the only commercial land uses that would not be anticipated to include more than a few loading docks or support a high level truck activity. Therefore, as a result of the project, no new or substantially more severe air quality impacts would occur from TAC exposure form on-site truck activity. The conclusions of the FPASP EIR/EIS remain valid and no further analysis is required.

TAC Exposure from Remediation Activity

Impact 3A.2-4 in the FPASP EIR/EIS also discussed whether remediation activity on the Aerojet General Corporation parcel along the western property boundary of the FPAP, which has been classified as a Superfund site, would result in TAC exposure of land uses developed under the FPASP. A report prepared by ARCADIS (2007) entitled *Draft Ambient Air Evaluation of Aerojet Area 40* examined potential health risks to future adult and child recreators on the adjacent portion of the FPASP that would remain open space from associated with volatile organic compounds (VOCs) potentially migrating from ground water into the ambient air. The report analyzed groundwater analytical data for the VOC plume located in the northern portion of Area 40. The primary chemicals of potential concern in the VOC plume include trichloroethene (TCE) and tetrachloroethene (PCE). Exposure and risk to adult and child recreators were estimated using standard EPA and California risk assessment practices. The analysis determined that the hazard indices (a.k.a., hazard quotients) used for determining levels of non-cancer risk would be 0.010 and 0.000025 from TCE and PCE exposure, respectively. It also determined that cancer risk levels would be 0.8 in one million from TCE exposure and 0.01 in one million from PCE exposure. Because all of the estimated risk levels would be below the SMAQMD's recommended thresholds of significance for health risk (i.e., a hazard index less than 1.0 at the maximally exposed individual and a cancer risk level less than 10 in one million), airborne exposure of recreators on the SPA to off-gassing VOC emissions from the contaminated groundwater plume was determined to be a less-than-significant impact. The project would experience even lower levels of risk because it is located further from the remediation site. Therefore, as a result of the project, no new or substantially more severe air quality impacts would occur from TAC exposure because of remediation activities on the Aerojet site. The conclusions of the FPASP EIR/EIS remain valid and no further analysis is required.

Land Use Compatibility with TACs Generated at Off-Site Corporation Yard

As part of the discussion under Impact 3A.2-4, the FPASP EIR/EIS addressed the possibility that residential land uses developed near White Rock Road could be exposed to potentially high concentrations of diesel PM generated by trucks and other equipment that are staged at a corporation yard the City plans to locate near the south side of White Rock Road and east of Prairie City Road. Because the types and number of equipment and activities at the future corporation yard were not known at the time the analysis was conducted for the FPASP EIR/EIS, and because it was not known whether activities at the corporation yard could potentially expose future residents to substantial levels of diesel PM exhaust, the analysis conservatively determined this impact to be potentially significant. Mitigation Measure 3A.2-4b of the FPASP EIR/EIS requires that the multi-family residences proposed across White Rock Road in the FPASP be set back as far as possible from the boundary of the future corporation yard and/or relocated to another area.

TAC-generating equipment stored at the corporation yard would include approximately 12 transit buses and vans, three vacuum trucks; five street sweepers; three fork lifts; three boom trucks; two tractor trailers; two asphalt machines; one dump truck; two water trucks, and two fleet response service vehicles (Nugen, pers. comm. 2015). The City may also decide to locate its solid waste collection fleet at the new corporation yard, consisting of 36 diesel-powered solid waste collection trucks (Kent, pers. comm. 2015). Four to six fuel pumps—gasoline, diesel, and potentially compressed natural gas (CNG)—would be located at the corporation yard, as well as 16 bay repair stations for vehicle repair and maintenance. The City estimates that approximately 50 to 60 trucks would enter or leave the corporation yard each day, assuming it is used by the City's solid waste collection fleet (Nugen, pers. comm. 2015).

ARB's *Air Quality and Land Use Handbook: A Community Health Perspective* provides guidance on land use compatibility with various sources of TACs (ARB 2005). The handbook is not a law or adopted policy but offers advisory recommendations for the siting of sensitive receptors near uses associated with TACs, such as freeways and high-traffic roads, commercial distribution centers, rail yards, ports, refineries, dry cleaners, gasoline stations, and industrial facilities, to help keep sensitive receptors from being exposed to substantial doses of TACs. The handbook's discussion of truck distribution facilities is applicable to this analysis because the corporation yard would serve as central point of activity for multiple diesel-powered vehicles. In its handbook ARB recommends that lead agencies avoid siting new sensitive land uses within 1,000 feet of a distribution center that accommodates more than 100 trucks per day, more than 40 trucks with operating TRUs per day, or where TRU unit operations exceed 300 hours per week (ARB 2005:4). ARB also recommends that lead agencies take into account the configuration of existing distribution centers and avoid locating residences and other new sensitive land uses near entry and exit points because, in addition to on-site emissions, truck travel in and out of distribution centers contributes to the local pollution impact (ARB 2005:4,11).

Overall, the amount of diesel PM generated at the future corporation yard and the resultant level of health risk exposure at nearby receptors (i.e., residential land uses in the project area) would be less than the type of truck distribution centers discussed in ARB's handbook. The total number of diesel-powered vehicles at the future corporation yard would be less than 100, even if the City's solid waste collection fleet is moved to the site, and no TRUs would be operated. Unlike a typical truck distribution center there would be no "yard trucks" used to move containers around the corporation yard that is typical of truck distribution centers. Because the entry and exit points to the corporation yard would be from Prairie City Road, not all trucks would pass by the proposed residential locations along White Rock Road when arriving or departing. Furthermore, truck idling is restricted by ARB regulations, particularly the Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling rule which prohibits the driver to idle its primary diesel engine for more than five minutes (CCR Title 13, Section 2485). ARB also continues to implement its Diesel Risk Reduction Plan to substantially reduce emissions of diesel PM from existing and new trucks (ARB 2000).

In summary, because the center of the corporation yard would be more than 1,000 feet from the proposed residential area, because the number of diesel engines at the corporation yard would not be more than 100 and there would be no TRUs, and the reductions in diesel PM resulting from ARB's regulatory efforts, it is not anticipated that residential land uses developed under the project would be exposed to substantial levels of health risk from TACs emitted at the future corporation yard. This impact would be less than significant.

Note that when the corporation yard is proposed it would be required to undergo its own environmental review pursuant to CEQA and additional analysis will be necessary, particularly if the type of TAC-generating sources operating at the corporation yard will be different than described in this analysis.

Land Use Compatibility with U.S. 50

Impact 3A.2-4 in the FPASP EIR/EIS also examined whether the northern portion of the FPASP would be exposed to high concentrations of mobile-source TACs from the high volumes of traffic that travel on U.S. 50. The analysis concluded that impact of exposure to TAC emission from U.S. 50 would be less than significant because no schools, residences, or other sensitive receptors would be developed within the 500-foot set-back distance recommended in ARB's guidance document entitled *Air Quality and Land Use Handbook: A Community Health Perspective* (ARB 2005). The potential for the land uses developed under the project to be exposed to high concentrations of TAC's generated on U.S. 50 would also be less than significant because they would be even more distant from the freeway. Therefore, this impact would be within the scope of the impact already evaluated in the FPASP EIR/EIS, and would also be less than significant. The conclusions of the FPASP EIR/EIS remain valid and no further analysis is required.

Land Use Compatibility with High-Volume Arterial Roadways

As part of the cumulative impact analysis in section 4.1.7 of the FPASP EIR/EIS, the previous analysis examined health risk exposure levels from traffic on nearby high-volume arterial roadways to new residential land uses proposed under the FPASP. The FPASP EIR/EIS analyzed this impact because relatively high volumes of diesel-powered trucks associated with nearby sand and gravel quarries would travel on arterial roadways that pass by the proposed residential land uses and diesel PM emitted by this traffic could expose nearby residents to relatively high levels of health risk. Quarry trucks are expected to use segments of Prairie

City Road, White Rock Road, Scott Road, and possibly Oak Avenue. The analysis in the FPASP EIR/EIS employed guidance from SMAQMD's *Recommended Protocol for Evaluating the Location of Sensitive Land Uses Adjacent to Major Roadways, Version 2.3* (SMAQMD 2010). SMAQMD suggests using its protocol to determine whether it recommends that site-specific dispersion modeling and health risk calculations be conducted to further evaluate levels of health risk exposure associated with an individual project. The protocol consists of look-up tables that account for the volume of traffic on the roadway being examined, the roadway orientation (e.g., east-west or north-south), the distance between the receptor and roadway, and the orientation of the receptor relative to the roadway (e.g., a receptor located 50 feet north of a roadway segment that runs east-west). The analysis found that risk exposure levels could potentially be high enough to warrant a site-specific HRA for some of the roadway segments that pass by the project site, including the segments of Prairie City Road north of White Rock Road, White Rock Road between Prairie City Road and Scott Road South, White Rock Road east of Scott Road South, and Oak Avenue north of White Rock Road, as shown in Table 4-4 of the FPASP EIR/EIS.

The analysis in the FPASP EIR/EIS was conservative; however, because of uncertainty about when residential land uses on the FPASP site would be developed and occupied, the analysis in the FPASP EIR/EIS assumed that exposure to residents could begin as early as 2010 and; thus, used screening factors based on 2010 emission rates. This assumption was conservative because emissions of diesel PM from trucks are expected to decrease in the future as stricter, emission-reducing regulations come into effect, and as new trucks replace older trucks.

Moreover, this impact determination is consistent with the analysis in the FPASP EIR/EIS, which determined that levels of health risk exposure would decrease over time. As shown in Table 4-4 of the FPASP EIR/EIS, the exposure levels would decrease along all studied roadway segments from 2010 to 2030. The conclusions of the FPASP EIR/EIS remain valid and no further analysis is required.

Exposure of Sensitive Receptors to Construction-Generated Emissions of Naturally Occurring Asbestos

Impact 3A.2-5 in the FPASP EIR/EIS examined whether construction-related ground disturbance activities (i.e., grading, rock blasting) could generate fugitive PM_{10} dust that contains naturally occurring asbestos (NOA). Based on a report by the California Geologic Survey, portions of the FPASP area, including portions of the project, include areas that are moderately likely to contain NOA (California Geologic Survey 2006). The analysis explains that the serpentine soils may be disturbed during site grading and rock blasting activities, potentially exposing residents of the nearby residential neighborhoods in El Dorado County or neighborhoods that have already been developed in the FPASP to asbestos during project construction. Without appropriate controls, sensitive receptors near construction sites could be exposed to localized high levels of re-entrained fugitive PM_{10} dust, potentially including NOA. As a result, this direct impact would be considered potentially significant. Implementation of Mitigation Measure 3A.2-5 would reduce impacts associated with generation of fugitive dust that potentially contains NOA by requiring site-specific investigations and, where the presence of NOA is determined, implementation of a dust control plan that is approved by SMAQMD that would reduce impacts related to construction in serpentinite soils. Implementation of these measures would reduce the potentially significant impact associated with exposure to NOA during construction to a less-than-significant level. The potential for sensitive receptors to be exposed to NOA under the project is not substantially greater than determined in the FPASP EIR/EIS. Therefore, no new or substantially more severe air quality impacts would occur from NOA exposure as a result of the project. The conclusions of the FPASP EIR/EIS remain valid and no further analysis is required.

e) Create objectionable odors affecting a substantial number of people?

Short-Term Use of Construction Equipment

Impact 3A.2-6 of the FPASP EIR/EIS explains that construction activities associated with the development of on-site land uses could result in odorous emissions from diesel exhaust generated by construction equipment. Because the level of grading along the eastern, hilly side of the FPASP area would be particularly intense and require multiple pieces of heavy-duty, diesel-powered equipment (e.g., graders, dozers) and it was determined that a substantial number of people in the residential areas to the east in El Dorado Hills area could be exposed to objectionable odorous diesel exhaust emissions, the FPASP EIR/EIS required implementation of exhaust reduction measures listed in Mitigation Measure 3A.2-1a to reduce the level of exposure it was nonetheless determined that this impact would be significant and unavoidable.

For these reasons, odorous emissions generated during construction under the project would also be less than significant.

Long-Term Operation of On-Site Land Uses

Impact 3A.2-6 in the FPASP EIR/EIS determined that receptors could be exposed to objectionable odors from delivery trucks visiting commercial land uses, from sewer lift stations, and from the development of convenience uses such as fast food restaurants that may emit odors. Because these sources could expose a substantial number of proposed on-site receptors to objectionable odors the analysis determined this impact to be potentially significant. Mitigation Measure 3A.2-6 in the FPASP EIR/EIS requires the following measures to address these operational sources of odorous emissions:

- The odor-producing potential of land uses shall be considered when the exact type of facility that would occupy areas zoned for commercial, industrial, or mixed-use land uses is determined. Facilities that have the potential to emit objectionable odors shall be located as far away as feasible from existing and proposed sensitive receptors.
- Before the approval of building permits, odor control devices shall be identified to mitigate the exposure of receptors to objectionable odors if a potential odor-producing source is to occupy an area zoned for commercial, industrial, or mixed-use land uses. The identified odor control devices shall be installed before the issuance of certificates of occupancy for the potentially odor-producing use. The odor-producing potential of a source and control devices shall be determined in coordination with SMAQMD and based on the number of complaints associated with existing sources of the same nature.
- Truck loading docks and delivery areas shall be located as far away as feasible from existing and proposed sensitive receptors.
- Signs shall be posted at all loading docks and truck loading areas which indicate that diesel-powered delivery trucks must be shut off when not in use for longer than 5 minutes on the premises to reduce idling emissions. This measure is consistent with the ATCM to Limit Diesel-Fueled Commercial Motor Vehicle Idling, which was approved by California's Office of Administrative Law in January 2005. (This measure is also required by Mitigation Measure 3A.2-4b to limit TAC emissions.)
- Proposed commercial and industrial land uses that have the potential to host diesel trucks shall incorporate idle reduction strategies that reduce the main propulsion engine idling time through alternative technologies such as, IdleAire, electrification of truck parking, and alternative energy sources for TRUs, to allow diesel engines to be completely turned off. (This measure is also required by Mitigation Measure 3A.2-4b to limit TAC emissions.)

The FPASP EIR/EIS determined that implementation of these measures to address on-site operational sources of odorous emissions would reduce the impact to a less-than-significant level.

The potential for on-site emission sources in the project to expose a substantial number of people to objectionable odors is the same as for the FPASP, including the Folsom Heights plan. Therefore, no new or substantially more severe odor impacts from on-site sources would occur as a result of the project. The conclusions of the FPASP EIR/EIS remain valid and no further analysis is required.

Land Use Compatibility with Off-Site Corporation Yard

In the discussion of odor impacts, Impact 3A.2-6 of the FPASP EIR/EIS also determined that the corporation yard could be a source of odorous exhaust emissions that would expose a substantial number of people to objectionable odors. Similar to the TAC impact analysis, this analysis was conservative because it was not known at the time what types of odor-generating activity could take place at the future site of the corporation yard. Mitigation Measure 3A.2-6 of the FPASP EIR/EIS requires the residences to be set back "as far as possible" and this impact was determined to be to be significant and unavoidable.

Since the analysis was written for the FPASP EIR/EIS, more detail is now known about the types of odor sources that may be located at the future corporation yard and its proximity to proposed sensitive land uses. Thus, this new information is used to conduct a more detailed impact analysis in this environmental document.

Equipment stored at the corporation yard would include approximately 12 transit busses and vans, three vacuum trucks; five street sweepers; three fork lifts; three boom trucks; two tractor trailers; two asphalt machines; one dump truck; two water trucks, and two fleet response service vehicles (Nugen, pers. comm. 2015). The City may also decide to locate its solid waste collection fleet at the new corporation yard, consisting of 36 solid waste collection trucks (Kent, pers. comm. 2015). Most of these vehicles would be diesel-powered and emit odorous diesel exhaust.

Locating some solid waste collection activities at the future corporation yard is also being considered by the City. The collection trucks that pick up recyclables and yard waste may haul these materials to the corporation yard so they can be consolidated and picked up by larger haul trucks. The Purchase and Sale Agreement between the City and the seller explicitly states that the property cannot be used as a solid waste transfer station for municipal garbage other than temporary storage of debris from tree removal, e-waste, and household hazardous waste (Aerojet Rocketdyne Inc. and City of Folsom 2014:6). No putrescible waste such as landfill-bound solid waste, food scraps, or finished compost would be stored or processed at the corporation yard (Gary, pers. comm. 2015). Therefore, diesel exhaust would be the only odorous emission generated at the site and SMAQMD does not recommend a setback distance for land uses that harbor a large number of diesel powered vehicles or equipment (SMAQMD 2014a:7-4). For these reasons, as well as the dispersive properties of diesel exhaust (Zhu et al. 2012:1), it is not anticipated that diesel exhaust generated at the corporation yard would expose a substantial number of people to unwanted odors. This impact would be less than significant.

Note that when the corporation yard is proposed it will be required to undergo its own environmental review pursuant to CEQA and additional analysis will be necessary, particularly if the types of odor sources located at the corporation yard will be different than described in this analysis.

<u>Land Use Compatibility with Off-Site Agricultural Land Uses</u>

Impact 3A.2-6 in the FPASP EIR/EIS explained that land uses developed on the southern side of the FPASP area could be exposed to odors generated by neighboring agricultural land uses, including livestock grazing that takes place just south of White Rock Road. Adversely affected portions of the FPASP include the southernmost areas of the project area. Mitigation Measure 3A.2-6 in the FPASP EIR/EIS requires the following measures to address exposure to odorous emissions from agricultural operations:

- The deeds to all properties located within the [FPASP area] that are within one mile of an on- or off-site area zoned or used for agricultural use (including livestock grazing) shall be accompanied by a written disclosure from the transferor, in a form approved by the City of Folsom, advising any transferee of the potential adverse odor impacts from surrounding agricultural operations, which disclosure shall direct the transferee to contact the County of Sacramento concerning any such property within the County zoned for agricultural uses within one mile of the subject property being transferred.

Because increasing the setback distance between on-site residents and the existing off-site agricultural lands would not necessarily reduce the intensity or frequency of these residents' exposure to odorous exhaust emissions, the FPASP EIR/EIS concluded that this impact would be significant and unavoidable.

The potential for on-site residential land uses to be exposed to objectionable odors associated with off-site livestock grazing would be the same under the project. Therefore, no new or substantially more severe odor impacts to on-site residences would occur as a result of the project. The conclusions of the FPASP EIR/EIS remain valid and no further analysis is required.

Mitigation Measures

The following mitigation measures were referenced in the EIR/EIS analysis and would continue to remain applicable if the project were approved.

- Mitigation Measure 3A.2-1a: Implement Measures to Control Air Pollutant Emissions Generated by Construction of On-Site Elements.
- Mitigation Measure 3A.2-1b: Pay Off-site Mitigation Fee to SMAQMD to Off-Set NO_X Emissions Generated by Construction of On-Site Elements.
- Mitigation Measure 3A.2-1c: Analyze and Disclose Projected PM_{10} Emission Concentrations at Nearby Sensitive Receptors Resulting from Construction of On-Site Elements.
- Mitigation Measure 3A.2-1e: Implement EDCAQMD-Recommended Measures for Controlling Fugitive PM10 dust During Construction of the Two Roadway Connections in El Dorado County.
- Mitigation Measure 3A.2-1f: Implement SMAQMD's Enhanced Exhaust Control Practices during Construction of all Off-site Elements.
- Mitigation Measure 3A.2-1g: Pay Off-site Mitigation Fee to SMAQMD to Off-Set NO_X Emissions Generated by Construction of Off-site Elements.
- Mitigation Measure 3A.2-1h: Analyze and Disclose Projected PM_{10} Emission Concentrations at Nearby Sensitive Receptors Resulting from Construction of Off-site Elements.
- Mitigation Measure 3A.2-2: Implement All Measures Prescribed by the Air Quality Mitigation Plan to Reduce Operational Air Pollutant Emissions.
- Mitigation Measure 3A.2-4a: Develop and Implement a Plan to Reduce Exposure of Sensitive Receptors to Construction-Generated Toxic Air Contaminant Emissions.
- Mitigation Measure 3A.2-4b: Implement Measures to Reduce Exposure of Sensitive Receptors to Operational Emissions of Toxic Air Contaminants.
- Mitigation Measure 3A.2-5: Implement a Site Investigation to Determine the Presence of NOA and, if necessary, Prepare and Implement an Asbestos Dust Control Plan.
- Mitigation Measure 3A.2-6: Implement Measures to Control Exposure of Sensitive Receptors to Operational Odorous Emissions.

CONCLUSION

As required by many of the air quality mitigation measures adopted as part of the FPASP, this report provides additional project-level air quality analysis. While the project-specific analyses provide additional detail for the project site, the project would not result in new or substantially more severe significant impacts to air quality. The conclusions of the FPASP EIR/EIS remain valid and no additional analysis is required.

4.4 BIOLOGICAL RESOURCES

Environmental Issue Area		Where Impact Was Analyzed in the EIR/EIS.	Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	Any New Information Requiring New Analysis or Verification?	Do Prior Environmental Documents Mitigations Address/Resolve Impacts?
4.	**Biological Resources. Would the project:**				
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 Wildlife or U.S. Fish and Wildlife Service?	Setting pp. 3A.3-7 to 3A.3-21 Impacts 3A.3-2 and 3A.3-3	No	No	Yes, mitigation has been updated
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?	Setting pp. 3A.3-21 to 3A.3-26 Impact 3A.3-4	No	No	Yes, mitigation has been updated
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?	Setting pp. 3A.3-5 to 3A.3-7, 3A.3-18 to 3A.3-21 Impact 3A.3-1	No	No	Yes, mitigation has been updated
d.	Interfere substantially with the movement of any native resident or migratory fish and wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	Setting p. 3A.3-7 Impact 3A.3-6	No	No	Yes, mitigation has been updated
e.	Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.	Setting pp. 3A.3-23 to 3A.3-26 Impact 3A.3-5	No	No	Yes, mitigation has been updated
f.	Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	Impact 3A.3-7	No	No	NA
g.	Have the potential to cause a commercial and/or recreational fishery to drop below self-sustaining levels?	Setting p. 3A.3-17 No Impact	No	No	NA

4.4.1 Discussion

New information pertaining to biological resources on the project site has become available since the EIR/EIS was certified in 2011. After the EIR/EIS was certified, USFWS published a biological opinion relating to the FPASP (Formal Consultation on the Proposed Folsom Plan Area Specific Plan Project [Corps# SPK-2007-02159]) and California Department of Fish and Wildlife (CDFW) entered into a streambed alteration agreement with the FPASP applicants (Master Streambed Alteration Agreement [Notification No. 1600-

2012-0198-R2] for Folsom Plan Area Specific Plan-Backbone Infrastructure Project). These documents contain guidance on how to treat special-status species, and provide conditions for the FPASP and associated projects. On March 24, 2016, an Ascent Environmental, Inc., biologist conducted a site visit to verify that conditions on the site have not changed since adoption of the EIR/EIS. The existing conditions of the site are similar as described in the EIR/EIS (Ascent Environmental, Inc. 2016). Mitigations were updated using other recently-certified environmental documents related to FPASP area projects.

The following discussion summarizes the new information and compares this information to the analysis presented in the EIR/EIS in Section 3A.3 Biological Resources – Land.

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 Wildlife or the U.S. Fish and Wildlife Service?

The EIR/EIS evaluated the impact of the FPASP on 13 special-status plant and 28 special-status animal species which had the potential to occur within the FPASP area (Impacts 3A.3-2 and 3A.3-3). The certified EIR/EIS concluded that the following special-status species could be substantially affected by implementation of the FPASP: vernal pool fairy shrimp, vernal pool tadpole shrimp, conservancy fairy shrimp, and valley elderberry longhorn beetle, Swainson's hawk, special-status raptors, western spadefoot, tricolored blackbird, and special-status bats. Impacts to all other special-status wildlife species were considered less than significant. Only special-status raptors are within the Folsom Heights area. The area provides for foraging habitat for Swainson's hawk; no breeding areas are present.

The EIR/EIS determined that implementation of Mitigation Measures 3A.3-2a, 3A.3-2b, 3A.3-2c, 3A.3-2d, 3A.3-2e, 3A.3-2f, 3A.3-2g, and 3A.3-2h would reduce the impacts on special-status wildlife resulting from implementation of the FPASP; however, the EIR/EIS concluded that, even with the mitigation, the impact on Swainson's hawk would remain significant and unavoidable. All other special-status species impacts would be reduced to a less-than-significant level.

Other projects in the FPASP area have been approved and the following revised mitigation (3A.3-1a, 3A.3-1b, 3A.3-4a, 3A.3-4b, 4.4-1, 4.4-4, 4.4-5, 4.4-6, and 4.4-7) was included similar to the mitigations found in other certified environmental documents (such as the Westland Specific Plan Amendment Addendum) to address the impacts related to implementation of the project. However, no new impacts from those identified in the FPASP EIR/EIS were identified. Rather, the mitigations addresses impacts to special-status species on a project level at the Folsom Heights project site. With the implementation of mitigation measures included below, the project's impact on special-status species would be less than -significant. Further, the project-specific mitigation provided below would also ensure that the project would have a less-than-significant impact on Swainson's hawk. The mitigation measures presented below would replace the measures adopted in the FPASP EIR/EIS. While revised mitigation is provided, the project would still contribute to the cumulatively significant and unavoidable impact on Swainson's hawk habitat because the project would continue to be part of a larger set of projects (i.e., FPASP) which would permanently remove and convert Swainson's hawk habitat to urban uses. The FPASP EIR/EIS identified that no additional feasible mitigation is available to mitigate the cumulative impact on Swainson's hawk. This condition has not changed. Therefore, while the project-specific mitigation requirements for impacts to biological resources have been refined, no new significant impacts or substantially more severe biological impacts would occur with implementation of the project. The findings of the certified EIR/EIS remain valid and no further analysis is required.

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service?

In Impact 3A.3-4, the FPASP EIR/EIS concluded that there would be a potentially significant impact on riparian habitat and valley needle grassland. Mitigation was recommended to reduce impacts to these habitats (Mitigation Measures 3A.3-1a, 3A.3-1b, 3A.3-4a, and 3A.3-4b) which would require stormwater, erosion, and sediment control plans; Clean Water Act Section 404 permits; a Section 1602 Streambed Alteration Agreement; and surveys to identify and map Valley needle grassland. However, these habitats occur in areas where some off-site improvements are proposed (i.e., U.S. 50 roadway intersections). The off-site improvements would be implemented by California Department of Transportation (Caltrans) and would not be subject to the City's direct control. Therefore, the EIR/EIS determined that this impact would be potentially significant and unavoidable because the City could not guarantee that Caltrans would comply with the recommended mitigation. This condition would not change with the project. However, based upon a certified environmental document for another FPASP project (Westland Specific Plan Amendment Addendum), there are some project-level mitigation measures for impacts to these species. These measures are presented below as Mitigation Measures 3A.3-1a, 3A.3-1b, 3A.3-4a, and 3A.3-4b. Mitigation Measure 3A.3-1a requires the applicant to create storm water drainage, erosion, and sediment control plans to protect wetland areas. Mitigation Measure 3A.3-1b requires the applicant to implement the Section 401 and 404 permits and certifications. Mitigation Measure 3A.3-4a would require the applicant to amend and implement the Section 1602 Master Streambed Alteration Agreement to address potential impacts on riparian habitat. Mitigation Measure 3A.3-4b requires the applicant to avoid and minimize impacts on valley needle grassland. With the implementation of Mitigation Measures 3A.3-1a, 3A.3-1b, 3A.3-4a, and 3A.3-4b (which replace EIR/EIS Mitigation Measures 3A.3-1a, 3A.3-1b, 3A.3-4a, and 3A.3-4b for this project), the project would have a less-than-significant impact on riparian habitat and valley needle grassland. Further, based on Ascent Environmental's survey of the site, no new impacts to riparian habit or other sensitive natural communities were identified. Because there are no new significant impacts or substantially more severe impacts, the findings of the certified EIR/EIS remain valid and no further analysis is required.

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?

The EIR/EIS (Impact 3A.3-1) evaluated the impact of the FPASP on federally protected wetlands. The EIR/EIS concluded that there would be a potentially significant impact on federally protected wetlands because the FPASP would cause some wetland areas to be filled. In the EIR/EIS, the impact was considered significant and unavoidable even with Mitigation Measures 3A.3-1a and 3A.3-1b. Specific project-level mitigation measures (3A.3-1a, 3A.3-1b, and 3A.3-4a) are included below that require stormwater, erosion, and sediment control plans; obtaining and implementing Section 404 permit and Section 401 water quality certification; and implementation of the Section 1602 Master Streambed Alteration Agreement. Because the applicant would be required to mitigate for impacts to waters of the U.S. using the same ratios per feature specified in the original permits, the project would still be covered by EIR/EIS.

Mitigation Measures 3A.3-1a, 3A.3-1b, and 3A.3-4a (as found below) would replace EIR/EIS Mitigation Measures 3A.3-1a, 3A.3-1b, and 3A.3-4a for this project. With the implementation of these mitigation measures, the project would have a less-than-significant impact to wetland resources and no residual significant and unavoidable impacts would remain. Because there are no new significant impacts or substantially more severe impacts, the findings of the certified EIR/EIS remain valid and no further analysis is required.

d) 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?

In Impact 3A.3-6, the EIR/EIS evaluated the impact of the FPASP on wildlife movement and concluded that the impact would be less than significant. The project would generally develop the site with the same pattern and density of urban and open space uses. No changes in habitat or migration patterns has occurred since the FPASP was approved. Because there are no new significant impacts or substantially more severe impacts, the findings of the certified EIR/EIS remain valid and no further analysis is required.

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

In Impact 3A.3-5, the EIR/EIS evaluated whether the FPASP would conflict with local policies or ordinances protecting biological resources. The EIR/EIS concluded that the removal of blue oak woodland and individual oak trees and other trees would conflict with local ordinances protecting these resources and result in a significant impact. Implementation of Mitigation Measure 3A.3-5 would lessen the impacts on blue oak woodland and other trees because it would require the applicant to conduct a tree survey and prepare and implement an oak woodland mitigation plan, and other measures to avoid and minimize impacts on oak woodlands. However, the Folsom Heights project area does not contain oak trees and, therefore, no impacts to oak woodland or individual oak trees would occur.

The project would not result in any new significant impacts or substantially more severe impacts; therefore, the findings of the certified EIR/EIS remain valid and no further analysis is required.

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

As discussed in Impact 3A.3-7 of the FPASP EIR/EIS, there is no adopted conservation plan for this area. Therefore, no impact was identified. No new conservation plans have been adopted since approval of the FPASP. Therefore, there are no new significant impacts or substantially more severe impacts that would occur pertaining to conflicts with adopted conservation plans. The findings of the certified EIR/EIS remain valid and no further analysis is required.

g) Have the potential to cause a commercial and/or recreational fishery to drop below self-sustaining levels?

No special-status fish species are known or have potential to occur within the Carson Creek watershed, which is the watershed that occurs within the project area. No changes to this environmental condition have occurred. No new significant impacts or substantially more severe impacts to fishery resources would occur. Therefore, the findings of the certified EIR/EIS remain valid and no further analysis is required.

Mitigation Measures

The following mitigation measures replace what was in the EIR/EIS for this project and were revised to include the more specific requirements where applicable for the project. Please note that these are numbered as found in the Draft EIS/EIR but have been updated beyond what could be found in the MMRP for the FPASP. Where a mitigation measure does not directly correlate to a mitigation measure from the MMRP, the numbering corresponds to this document’s outline. For instance, Mitigation Measure 3A.3-2a pertains to both preconstruction monitoring and mitigation plans for Swainson’s hawk. In this document, these two activities are broken into two separate mitigations (4.4-4 and 4.4-5).

Mitigation Measure 3A.3-1a: Mitigation for erosion impacts.

To minimize indirect effects on water quality and wetland hydrology, the project applicant shall include a storm water 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 shall obtain a National Pollutant Discharge Elimination System MS4 Municipal Stormwater Permit and Grading Permit, comply with the City’s Grading Ordinance and County drainage and storm water 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 Carson Creek and all wetlands and other waters that would remain within the FPASP area.

The project applicant shall implement storm water quality treatment controls consistent with the Storm Water 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 EPA to minimize impacts on water quality, hydrology, and stream geomorphology. Crossings of wetlands shall be done in accordance with the Section 404 permits which allow for free-spanning bridge systems, the use of bottomless culverts that do not alter the natural stream bed; and/or oversized box culverts that are backfilled with a natural substrate. Consistent with the USACE permits, where installation of box culverts is planned, restoration of a natural streambed/substrate shall be required. Details of all crossings shall be submitted to the USACE for approval prior to each phase of development.

In addition to complying with City ordinances, the project applicant shall obtain a General Construction Storm Water Permit from the Central Valley Regional Water Quality Control Board (RWQCB), prepare a storm water 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 Carson Creek and associated tributaries. 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 storm water system within the project area. The baseline conditions, monitoring standards, and a monitoring program shall be submitted to the 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 Carson Creek and associated tributaries 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.

Mitigation Measure 3A.3-1b: Implement Clean Water Act Section 404 Permits and Section 401 Water Quality Certifications.

Before the approval of grading and improvement plans and before any groundbreaking activity associated with each distinct project phase, the owner/applicant shall secure all USACE necessary permits obtained under Sections 401 and 404 of the Clean Water Act or the State's Porter-Cologne Act and implement all permit conditions for the proposed Central Valley project. All permits, regulatory approvals, and permit conditions for effects on wetland habitats shall be secured and conditions implemented before implementation of any grading activities within 250 feet (or lesser distance as approved by the applicable agencies) of waters of the U.S, or wetland habitats, including waters of the State, that potentially support federally listed species, or within 100 feet (or lesser distance as approved by the applicable agencies) of any other waters of the U.S. or wetland habitats, including waters of the State. The owner/applicant shall adhere to all conditions outlined in the permits. The owner/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 the project. 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. The boundaries of the 404 permit, including required buffer, shall be shown on the grading plans.

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.

All wetland mitigation compliance reports submitted to USACE shall also be copied concurrently to the City.

Mitigation Measure 3A.3-4a: Implement Section 1602 Master Streambed Alteration Agreement.

The owner/applicant 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 CDFW jurisdictional features within the project and Wildlife site. As outlined in the Master Streambed Alteration Agreement, the owner/applicant shall submit a Sub-Notification Form (SNF) to CDFW 60 days prior to grading and/or the commencement of construction to notify California Department of Fish and Wildlife of the project.

Any conditions of issuance of the Master Streambed Alteration Agreement shall be implemented as part of those project construction activities that would adversely affect the bed and bank within on-site drainage channels subject to CDFW jurisdiction. The agreement shall be executed by the owner/applicant 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 on-site drainage channels under CDFW jurisdiction

Mitigation Measure 3A.3-4b: Valley needlegrass grassland avoidance and minimization measures.

Prior to ground-breaking activities including grading or construction, high visibility construction fencing should be placed around all Valley needlegrass grassland to be preserved. The construction fencing should not be removed until completion of construction activities.

- All Valley needlegrass grassland areas slated for removal should be replaced at a 1:1 acreage on-site within the preserve areas.
- Needlegrass plants in areas slated for removal should be salvaged, to the extent feasible, and replanted within the preserve areas. If this is infeasible, then seedlings/saplings from a local nursery should be obtained.
- A mitigation plan outlining methods to be used, success criteria to be met, and adaptive management strategies will be completed prior to project construction.

At a minimum, unless agreed upon otherwise with regulatory agencies, the Valley needlegrass grassland creation areas shall be monitored twice annually for the first year and once annually for the 4 subsequent years for a total of 5 years; success criteria shall be established to ensure an 80 percent success rate is met by the 5th year, and adaptive management techniques shall be implemented to ensure that the 80 percent success rate is met by the 5th year or as otherwise agreed upon in consultation with CDFW. This plan may be combined with the Operations and Management Plan for the open space preserves.

Mitigation Measure 4.4-1: Conduct environmental awareness training for construction employees.

Before beginning construction activities, the project applicant shall employ a qualified biologist to develop and conduct environmental awareness training for construction employees. The training shall describe the importance of on-site biological resources, including special-status wildlife habitats. The biologist shall explain the importance of other responsibilities related to the protection of wildlife during construction such as inspecting open trenches and looking under vehicles and machinery before moving them to ensure there are no lizards, snakes, small mammals, or other wildlife that could become trapped, injured, or killed in construction areas or under equipment.

The environmental awareness program shall be provided to all construction personnel to brief them on the life history of special-status species in or adjacent to the project area, the need to avoid impacts on sensitive biological resources, any terms and conditions required by state and federal Agencies, and the penalties for not complying with biological mitigation requirements. If new construction personnel are added to the project, the contractor's superintendent shall ensure that the personnel receive the mandatory training before starting work. An environmental awareness handout that describes and illustrates sensitive resources to be avoided during project construction and identifies all relevant permit conditions shall be provided to each person.

Mitigation Measure 4.4-4: Conduct preconstruction Swainson's hawk and other raptor surveys.

To mitigate impacts on Swainson's hawk and other raptors (for Folsom Heights, northern harrier could potentially nest on-site), 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 if construction begins during March through August. The surveys shall be conducted no less than 14 days and no more than 30 days before the beginning of construction activities/staging. 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 active/occupied nests are found, no further mitigation is required.

If active nests are found, impacts on nesting Swainson's hawks and other 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. 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 shall be required if the activity has potential to adversely affect the nest.

Mitigation Measure 4.4-5: Prepare and implement Swainson's hawk mitigation plan.

To mitigate for the loss of Swainson's hawk foraging habitat, the project applicant 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 for each phase, the project applicant, to the satisfaction of the City, shall secure suitable Swainson's hawk foraging habitat to ensure 1:1 mitigation (or other agreed upon ratio) of habitat value for Swainson's hawk foraging habitat that is permanently lost as a result of the project phase, as determined by the City after consultation with CDFW and a qualified biologist.

The 1:1 ratio (or other agreed-upon ratio) shall be based on Swainson's hawk nesting distribution and an assessment of habitat quality, availability, and use within the project area. The mitigation ratio shall be consistent with the 1994 Department of Fish and Game's 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* (Swainson's Hawk Technical Advisory Committee 2000). These call for the following mitigation ratios for loss of foraging habitat in these categories: 1:1 if within one mile of an active nest site, 0.75:1 if over one mile but less than five miles, and 0.5:1 if over five miles and less than 10 miles from an active nest. Such mitigation shall be accomplished through purchase of credits at an approved mitigation bank, or the transfer of fee title or perpetual conservation easement. If non-bank mitigation is proposed, the mitigation land shall be located within the known foraging area and within Sacramento County. The City, after consultation with CDFW, shall determine the appropriateness of the mitigation land.

The project applicant 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, after consultation with CDFW. After consultation with CDFW and the Conservation Operator, the City shall approve the content and form of the conservation easement. The City, 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.

After consultation with the City, the project applicant, 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.

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 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 ten years after establishment of the easement.

Mitigation Measure 4.4-6: Conduct preconstruction burrowing owl survey.

To mitigate impacts on burrowing owl, a qualified biologist shall be retained to conduct preconstruction surveys to identify active burrows within the project area. The surveys shall be conducted no less than 14 days and no more than 30 days before the beginning of construction. The preconstruction survey shall follow the protocols outlined in the *Staff Report on Burrowing Owl Mitigation* (CDFG 2012). Burrowing owls may be present on-site during any season.

If active 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 (during the non-breeding season) 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 during the breeding season (February 1-August 31) 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 a minimum of 50 meters (164 feet) of the burrow until young have fledged. During the non-breeding season, once it is confirmed that there are no owls inside burrows, the burrows may be collapsed.

Mitigation Measure 4.4-7: Preconstruction nesting bird survey.

The project applicant shall conduct a preconstruction nesting bird survey of all areas associated with construction activities on the project site within 14 days prior to commencement of construction during the nesting season (February 1 through August 31).

If active nests are found, a no-disturbance buffer around the nest shall be established. The buffer distance shall be established by a qualified biologist in consultation with CDFW. The buffer shall be maintained until the fledglings are capable of flight and become independent of the nest, to be determined by a qualified biologist. Once the young are independent of the nest, no further measures are necessary. Pre-construction nesting surveys are not required for construction activity outside of the nesting season.

CONCLUSION

While additional biological surveys of the site have been conducted and a refined mitigation program for the project has been recommended, this information is consistent with the activities recommended in the mitigation adopted for the FPASP. No new significant or substantially more severe biological impacts would occur with the project. In some cases, based on the refined mitigation program, the biological impacts associated with the project would be reduced compared to the impacts described in the EIR/EIS. Therefore, the findings of the certified EIR/EIS remain valid and no further analysis is required.

4.5 CULTURAL RESOURCES

Environmental Issue Area	Where Impact Was Analyzed in the EIR/EIS.	Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	Any New Information Requiring New Analysis or Verification?	Do Prior Environmental Documents Mitigations Address/Resolve Impacts?
5. Cultural Resources. Would the project:				
a. Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	Setting pp. 3A.5-2 to 3B.5-5 Impact 3A.5-1	No	No	Yes
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	Setting pp. 3A.5-1 to 3B.5-3 Impacts 3A.5-1 and 3A.5-2	No	No	Yes
c. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	Setting pp. 3A.7-13 to 3A.7-17 Impact 3A.7-10	No	No	Yes
d. Disturb any human remains, including those interred outside the formal cemeteries?	Setting p. 3A.5-13 to 3A.5-15 Impact 3A.5-3	No	No	Yes

4.5.1 Discussion

Since the adoption of the FPASP and certification of the EIR/EIS, and consistent with the mitigation adopted in the FPASP, the FPASP applicants entered into a programmatic agreement (PA) with USACE to fulfill the requirements in Section 106 of the National Historic Preservation Act. The PA was amended in 2013 and the project is subject to the requirements of the First Amended Programmatic Agreement (FAPA) to meet obligations under all applicable state and federal requirements that were in place at the time of its execution.

The FAPA provides the framework for compliance and requires that each individual development, including the project, must comply with specific terms that include, but are not limited to, development of a project-specific Area of Potential Effects (APE), a geoarchaeological investigation, an updated records search, good-faith identification efforts including pedestrian surveys, evaluation of significance of resources, a finding of effect, and the resolution of adverse effects to significant cultural resources. Furthermore, the FAPA requires that all work done in compliance with the FAPA be carried out in accordance with the overall research design and Preliminary Historic Properties Synthesis (PHPS) that has been prepared for the FPASP. The PHPS was renamed the Historic Property Management Plan (HPMP) in conjunction with the execution of the FAPA in 2013.

SENATE BILL 18

Senate Bill (SB) 18 was signed into law in September 2004 and became effective in March 2005. SB 18 (Burton, Chapter 905, Statutes of 2004) requires city and county governments to consult with California Native American tribes early in the planning process with the intent of protecting traditional tribal cultural places. The purpose of involving tribes at the early stage of planning efforts is to allow consideration of tribal cultural places in the context of broad local land use policy before project-level land use decisions are made by a local government. As such, SB 18 applies to the adoption or substantial amendment of general or specific plans. The process by which consultation must occur in these cases was published by the Governor's Office of Planning and Research through its Tribal Consultation Guidelines: Supplement to General Plan Guidelines (November 14, 2005).

Because the Project is seeking an SPA to the FPASP, the City was required to initiate consultation under SB 18. On March 7, 2016, the City requested an SB 18 contact list from the California Native American Heritage Commission (NAHC). On March 23, 2016, the NAHC responded with a list of eight California Native American tribes and individuals who had notified the NAHC of their desire to consult under SB 18 in the vicinity of the Project. On March 23, 2016, the City mailed SB 18 notification letters to the eight individuals, Rhonda Morningstar Pope (Buena Vista Rancheria), Don Ryberg (T'si-Akim Maidu), Yvonne Miller (Ione Band of Miwok Indians), Gene Whitehouse (United Auburn Indian Community of the Auburn Rancheria), Cosme Valdez (Nashville-El Dorado Miwok), Raymond Hitchcock (Wilton Rancheria), Nicholas Fonseca (Shingle Springs Band of Miwok Indians), and Grayson Coney (T'si-Akim Maidu), offering them an opportunity to consult within the 90-day comment period, scheduled to end on June 21, 2016.

The will City send the tribes a 45-day notice of the City Council hearing (anticipated on May 13, 2016), and a 10-day notice (anticipated June 17, 2016). These notices will provide the tribes with information about the City Council hearing, but in accordance with the statute, do not open up a new consultation window.

ASSEMBLY BILL 52

Assembly Bill (AB) 52 (Chapter 532, Statutes of 2014) established a formal consultation process for California Native American tribes as part of CEQA and equates significant impacts on tribal cultural resources with significant environmental impacts (Public Resources Code [PRC] Section 21084.2). AB 52 consultation requirements went into effect on July 1, 2015 for all projects that had not already published a Notice of Intent to Adopt a Negative Declaration or Mitigated Negative Declaration, or published a Notice of Preparation of an Environmental Impact Report prior to that date (Section 11 [c]). Specifically, AB 52 requires that "prior to the release of a negative declaration, mitigated negative declaration, or environmental impact report for a project, the lead agency shall begin consultation" (21808.3.1 [a]), and that "the lead agency may certify an environmental impact report or adopt a mitigated negative declaration for a project with a significant impact on an identified tribal cultural resource only if" consultation is formally concluded (21082.3[d]).

However, in the case of the current project, the lead agency has prepared this addendum to a previously certified EIR, in accordance with Section 15164 of the CEQA Guidelines. An addendum was determined to be the most appropriate document because none of the conditions described in Section 15162, calling for preparation of a subsequent EIR, have occurred. The addendum addresses minor technical changes or additions, and confirms that the project is consistent with what was previously analyzed under the certified EIR. As such, the addendum will not be released or circulated for public review and will not result in an additional certification; therefore, the AB 52 procedures specified in PRC Sections 21080.3. 1(d) and 21080.3.2 do not apply and no tribal consultation under AB 52 is required.

a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?

Impacts under the approved FPASP to historical resources within the FPASP area are described in Impact 3A.5-1. Impacts were determined to be potentially significant because the FPASP would develop in areas containing known historic resources. Mitigation Measures 3A.5-1a and 3A.5-1b were recommended and required the applicants to enter into a PA with USACE for the comprehensive evaluation of resources within the FPASP as well as an inventory and evaluation of cultural resources and methods to avoid or minimize damage to resources. As described in the mitigation, the PA would establish an APE and provide a framework for data gathering so that the applicant, City, and USACE would have a more thorough understanding of the resources present in the area and how best to address these resources. Although implementation of Mitigation Measures 3A.5-1a and 3A.5-1b in the EIR/EIS would reduce the impact to known prehistoric and historic-era cultural resources, the EIR/EIS concluded that the impact would remain potentially significant and unavoidable because some of the affected resources would not be within the City's jurisdiction and the City would not have control over their protection and preservation.

As described above, the applicant will enter into a PA with USACE and conduct a subsequent review of historic resources pertaining the Folsom Heights project area. That review will determined the specific locations and qualities of historic resources present on the site. Based on the information in this review, the project applicants will make modifications to the project design to facilitate complete avoidance of on-site resources through re-routing infrastructure or extending conservation easements over sites, and to enhance public interpretation opportunities using interpretive panels along proposed bike trails. Direct and indirect adverse effects to historic resources will be reduced through the preparation of a HPMP, extensive archival research, and through detailed LIDAR and aerial mapping. While these are not sufficient to reduce the potentially significant impact to a less-than-significant level, the information gathered through the extensive surveys, Native American consultation, and reviews of records will be used to refine the mitigation measures adopted in the EIR/EIS.

The mitigation measures from the EIR/EIS addressing historic resources will be refined to more specifically address the Folsom Heights project area. Implementation of these modified mitigation measures (3A.5-1a and 3A.5-1b) will further reduce the potential for the Folsom Heights project to affect historic resources; however, because these detailed evaluations have not yet been performed, this impact would remain significant and unavoidable. No new significant impacts or substantially more severe impacts would occur. Therefore, the findings of the certified EIR/EIS remain valid.

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?

The EIR/EIS analyzed potential destruction or damage to known (Impact 3A.5-1) or unknown (Impact 3A.5-2) archeological resources and concluded that there was would be potentially significant impacts because of the potential destruction and removal of these resources. The EIR/EIS recommended Mitigation Measures 3A.5-1a, 3A.5-1b, and 3A.5-2 which would reduce the impact to archaeological resources by requiring a PA, an inventory and evaluation of cultural resources and methods to avoid or minimize damage to resources, construction personnel education, and on-site monitoring during construction activities. However, the EIR/EIS concluded that this impact would remain potentially significant and unavoidable because some of the affected resources would not be within the City's jurisdiction and the City would not have control over their protection and preservation and because not all resources would be avoided under the approved FPASP.

As described previously, the applicant will enter into a PA and subsequent review of cultural resources. As described under a), the applicant will make changes, as needed, to the project to avoid impacts to known resources. Implementation of these modified mitigation measures (3A.5-1a, 3A.5-1b, and 3A.5-2) will further reduce the potential for the Folsom Heights project to affect archaeological resources; however, because these detailed evaluations have not yet been performed, this impact would remain significant and unavoidable. No new significant impacts or substantially more severe impacts would occur. Therefore, the findings of the certified EIR/EIS remain valid.

c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Impact 3A.7-10 of the EIR/EIS analyzed the potential for damage to unique paleontological resources during earthmoving activities in the FPASP area. The EIR/EIS concluded that most of the SPA, including the Folsom Heights project area, are underlain by the Salt Springs Slate, Copper Hill Volcanics, and Gopher Canyon Volcanics. Because of the way in which these rocks formed, they would not contain vertebrate fossils or fossil plant assemblages. Therefore, construction activities that occur in these rock formations would have no impact on unique paleontological resources.

Because the development under the project would result in a similar footprint for ground disturbance as the approved FPASP, the impact conclusions pertaining to paleontological resources remain unchanged. As described in Impact 3A.7-10 of the Draft EIR/EIS, construction activities that occur in the project area would have no impact on unique paleontological resources. No new significant impacts or substantially more severe impacts would occur. Therefore, the findings of the certified EIR/EIS remain valid and no further analysis is required.

d) Disturb any human remains, including those interred outside of formal cemeteries?

The EIR/EIS analyzed potential destruction or damage to human remains in Impact 3A.5-3 and concluded that the impact was potentially significant because ground-disturbing activities may inadvertently disinter or destroy interred human remains. The EIR/EIS recommended Mitigation Measure 3A.5-3, which would reduce the potential impact to a less-than-significant level because it would require the applicant to halt ground-disturbing activities if remains are uncovered and follow the requirements of the California Health and Safety Code.

Mitigation Measure 3A.5-3 has been updated to include a statement requiring the applicant to submit to the City proof of compliance and this updated version is presented below and replaces Mitigation Measure 3A.5-3 in the EIR/EIS. No new information regarding human remains has been identified requiring new analysis or verification. No new significant impacts or substantially more severe impacts would occur. Therefore, the findings of the certified EIR/EIS remain valid and no further analysis is required.

Mitigation Measures

The following mitigation measure was adopted with the FPASP and would continue to remain applicable if the project was approved.

- Mitigation Measure 3A.7-10: Conduct construction personnel education, stop work if paleontological resources are discovered, assess the significance of the find, and prepare and implement a recovery plan as required.

In addition to the mitigation measure in the EIR/EIS (listed above), the following mitigation measures replace what was in the EIR/EIS for this project and were revised to include the more specific requirements found in the HPTP and FAPA.

Mitigation Measure 3A.5-1a: Comply with the Programmatic Agreement.

The PA will provide a management framework for identifying historic properties, determining adverse effects, and resolving those adverse effects as required under Section 106 of the NHPA.

The project and all of its earlier components, including backbone and non-backbone portions of the property, will be subjected to cultural resources studies prepared under the PA and subsequent FAPA. If historical resources are identified, mitigation of significant impacts will be proposed through HPTPs all with concurrence by SHPO. The applicable mitigation measures from the HPTPs are provided below, relative to Mitigation Measure 3A.5-1b, 3A.5-2, and 3A.5-3.

Mitigation Measure 3A.5-1b: Cultural resource inventory, treatment, and evaluation mitigation.

These steps may be combined with deliverables and management steps performed for Section 106 provided that management documents prepared for the PA also clearly reference the California Register of Historical Resources (CRHR) listing criteria and significance thresholds that apply under CEQA. Before ground disturbing work for each individual development phase or off-site element, the applicable oversight agency (City of Folsom, El Dorado County, Sacramento County, or Caltrans), or the project applicant(s) of all project phases, with applicable agency oversight, shall perform the following actions:

- The project applicant shall retain the services of a qualified archaeologist to perform an inventory of cultural resources within each individual development phase or off-site element subject to approval under CEQA. Identified resources shall be evaluated for listing on the CRHR. The inventory report shall also identify locations that are sensitive for undiscovered cultural resources based upon the location of known resources, geomorphology, and topography. The inventory report shall specify the location of monitoring of ground-disturbing work in these areas by a qualified archaeologist, and monitoring in the vicinity of identified resources that may be damaged by construction, 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 PA to minimize the potential for conflicting requirements.

- For each resource that is determined eligible for the CRHR, the applicable agency or the project applicant(s) for any particular discretionary development (under the agency's direction) shall obtain the services of a qualified archaeologist who shall determine if implementation of the individual project development would result in damage or destruction of "significant" (under CEQA) cultural resources. These findings shall be reviewed by the applicable agency for consistency with the significance thresholds and treatment measures provided in this EIR/EIS.

- Where possible, the project shall be configured or redesigned to avoid impacts on eligible or listed resources. Alternatively, these resources may be preserved in place if possible, as suggested under California Public Resources Code Section 21083.2. Avoidance of historic properties is required under certain circumstances under the Public Resource Code and 36 CFR Part 800.

- Where impacts cannot be avoided, the applicable agency or the project applicant(s) of all project phases (under the applicable agency's direction) shall prepare and implement treatment measures that are determined to be necessary by a qualified archaeologist. These measures may consist of data recovery excavations for resources that are eligible for listing because of the data they contain (which may contribute to research). Alternatively, for historical architectural, engineered, or landscape features, treatment measures may consist of a preparation of interpretive, narrative, or photographic documentation. These measures shall be reviewed by the applicable oversight agency for consistency with the significance thresholds and standards provided in this EIR/EIS.

- To support the evaluation and treatment required under this mitigation measure, the archaeologist retained by either the applicable oversight agency or the project applicant(s) of all project phases shall prepare an appropriate prehistoric and historic context that identifies relevant prehistoric, ethnographic, and historic themes and research questions against which to determine the significance of identified resources and appropriate treatment.

- These steps and documents may be combined with the phasing of management and documents prepared pursuant to the PA to minimize the potential for inconsistency and duplicative management efforts.

- Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries shall be coordinated by the project applicant(s) of each applicable project phase with the affected oversight agency(ies) (i.e., El Dorado and/or Sacramento Counties, or Caltrans).

Mitigation Measure 3A.5-2: Cultural resource construction training and stop work mitigation.

To reduce potential impacts to previously undiscovered cultural resources, the project applicant(s) of all project phases shall do the following:

- Before the start of ground-disturbing activities, the project applicant(s) of all project phases shall retain a qualified archaeologist to conduct training for construction workers as necessary based upon the sensitivity of the project APE, to educate them about the possibility of encountering buried cultural resources, and inform them of the proper procedures should cultural resources be encountered.

- As a result of the work conducted for Mitigation Measures 3A.5-1a and 3A.5-1b, if the archaeologist determines that any portion of the SPA or the off-site elements should be monitored for potential discovery of as-yet-unknown cultural resources, the project applicant(s) of all project phases shall implement such monitoring in the locations specified by the archaeologist. USACE should review and approve any recommendations by archaeologists with respect to monitoring.

- Should any cultural resources, such as structural features, unusual amounts of bone or shell, artifacts, or architectural remains be encountered during any construction activities, work shall be suspended in the vicinity of the find and the appropriate oversight agency(ies) (identified below) shall be notified immediately. The appropriate oversight agency(ies) shall retain a qualified archaeologist who shall conduct a field investigation of the specific site and shall assess 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 actions required in Mitigation Measures 3A.5-1a and 3A.5-1b shall be implemented. The oversight agency 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 before resuming construction activities at the archaeological site.

Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries must be coordinated by the project applicant(s) of each applicable project phase with the affected oversight agency(ies) (i.e., El Dorado and/or Sacramento Counties, or Caltrans).

The project applicant in coordination with USACE shall ensure that an archaeological sensitivity training program is developed and implemented during a pre-construction meeting for construction supervisors. The sensitivity training program shall provide information about notification procedures when potential archaeological material is discovered, procedures for coordination between construction personnel and monitoring personnel, and information about other treatment or issues that may arise if cultural resources (including human remains) are discovered during project construction. This protocol shall be communicated to all new construction personnel during orientation and on a poster that is placed in a visible location inside the construction job trailer. The phone number of the USACE cultural resources staff member shall also be included.

The on-site sensitivity training shall be carried out each time a new contractor will begin work in the APE and at the beginning of each construction season by each contractor.

In the event that unanticipated discoveries of additional Historic Properties, defined in 36 CFR 800.16 (l), are made during the construction of the project, the USACE shall ensure that they will be protected by implementing the following measures:

- The construction manager, or archaeological monitor, if given the authority to halt construction activities, shall ensure that work in that area is immediately halted within a 100-foot radius of the unanticipated discovery until the find is examined by a person meeting the professional qualifications standards specified in Section 2.2 of Attachment G of the HPMP (Westwood et al. 2013). The Construction Manager, or archaeological monitor, if present, shall notify the USACE within 24 hours of the discovery.

- The USACE shall notify the SHPO within one working day of an unanticipated discovery, and may initiate interim treatment measures in accordance with this HPTP. Once the USACE makes a formal determination of eligibility for the resource, the USACE will notify the SHPO within 48 hours of the determination and afford the SHPO an opportunity to comment on appropriate treatment. The SHPO shall respond within 72 hours of the request to consult. Failure of the SHPO to respond within 72 hours shall not prohibit the USACE from implementing the treatment measures.

Mitigation Measure 3A.5-3: Human remains mitigation.

In accordance with the California Health and Safety Code, if human remains are uncovered during ground-disturbing activities, including those associated with off-site elements, the project applicant(s) of all project phases shall immediately halt all ground-disturbing activities in the area of the find and notify the applicable county coroner and a professional archaeologist skilled in osteological analysis to determine the nature of the remains. The coroner is required to examine all discoveries of human remains within 48 hours of receiving notice of a discovery on private or public lands (California Health and Safety Code Section 7050.5[b]). If the coroner determines that the remains are those of a Native American, he or she must contact the California Native American Heritage Commission (NAHC) by phone within 24 hours of making that determination (California Health and Safety Code Section 7050[c]).

After the coroner's findings are complete, the project applicant(s), an archaeologist, and the NAHC-designated Most Likely Descendant (MLD) shall determine the ultimate treatment and disposition of the remains and take appropriate steps to ensure that additional human interments are not disturbed. The responsibilities for acting on notification of a discovery of Native American human remains are identified in Section 5097.9 of the California Public Resources Code.

Upon the discovery of Native American remains, the procedures above regarding involvement of the applicable county coroner, notification of the NAHC, and identification of an MLD shall be followed. The project applicant(s) of all project phases shall ensure that the immediate vicinity (according to generally accepted cultural or archaeological standards and practices) is not damaged or disturbed by further development activity until consultation with the MLD has taken place. The MLD shall have at least 48 hours after being granted access to the site to inspect the site and make recommendations. A range of possible treatments for the remains may be discussed: nondestructive removal and analysis, preservation in place, relinquishment of the remains and associated items to the descendants, or other culturally appropriate treatment. As suggested by Assembly Bill (AB) 2641 (Chapter 863, Statutes of 2006), the concerned parties may extend discussions beyond the initial 48 hours to allow for the discovery of additional remains. AB 2641(e) includes a list of site protection measures and states that the project applicant(s) shall comply with one or more of the following requirements:

- record the site with the NAHC or the appropriate Information Center,
- use an open-space or conservation zoning designation or easement, or
- record a document with the county in which the property is located.

The project applicant(s) or its authorized representative of all project phases shall rebury the Native American human remains and associated grave goods with appropriate dignity on the property in a location not subject to further subsurface disturbance if the NAHC is unable to identify an MLD or if the MLD fails to make a recommendation within 48 hours after being granted access to the site. The project applicant(s) or its authorized representative may also reinter the remains in a location not subject to further disturbance if it rejects the recommendation of the MLD and mediation by the NAHC fails to provide measures acceptable to the landowner. Ground disturbance in the zone of suspended activity shall not recommence without authorization from the archaeologist.

Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries must be coordinated by the project applicant(s) of each applicable project phase with the affected oversight agency(ies) (i.e., El Dorado and/or Sacramento Counties, or Caltrans).

CONCLUSION

While consultation with regulatory agencies regarding cultural resources mitigation has not yet occurred for the Folsom Heights project, this mitigation program is consistent with the activities recommended in the mitigation adopted for the FPASP. No new significant or substantially more severe cultural resources impacts would occur with the project. Therefore, the findings of the certified EIR/EIS remain valid and no further analysis is required.

4.6 GEOLOGY AND SOILS

Environmental Issue Area	Where Impact Was Analyzed in the EIR/EIS.	Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	Any New Information Requiring New Analysis or Verification?	Do Prior Environmental Documents Mitigations Address/Resolve Impacts?
6. Geology and Soils. Would the project:				
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 or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42. ii. Strong seismic ground shaking? iii. Seismic-related ground failure, including liquefaction? iv. Landslides?	Setting pp. 3A.7-3 to 3A.7-5, 3A.7-18, 3A.7-19 Impacts 3A.7-1, 3A.7-2	No	No	Yes
b. Result in substantial soil erosion or the loss of topsoil?	Setting pp. 3A.7-5 to 3A.7-6 Impact 3A.7-3	No	No	Yes
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?	Setting p. 3A.7-6 Impacts 3A.7-4, 3A.7-5	No	No	Yes
d. Be located on expansive soil, as defined in Table 18- 1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	Setting p. 3A.7-11 Impact 3A.7-6	No	No	Yes
e. Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	Setting p. 3A.7-11 Impact 3A.7-7	No	No	Yes

4.6.1 Discussion

No substantial change in the environmental and regulatory settings related to geology and soils, described in the EIR/EIS Section 3A.7 Geology, Soils, Mineral, and Paleontological Resources – Land, has occurred since certification of the EIR/EIS. The regional and local settings remain the same as stated Section 3A.7.

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 or based on other substantial evidence of a known fault? (Refer to California Geological Survey Special Publication 42.)

The project would not change the land development pattern or types of built structures in the Folsom Heights project area and would result in substantially the same footprint of ground disturbance as was evaluated under the adopted FPASP. As described on page 3A.7-3 of the EIR/EIS, the project is located approximately 50 miles from the northern segment of the Cleveland Hills Fault, located near Lake Oroville, the nearest Alquist-Priolo Earthquake Fault Zone. The project area 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 certified EIR/EIS found that there was no need to discuss this issue any further. No new information regarding earthquake faults been identified requiring new analysis or verification. Because there are no new significant impacts or substantially more severe impacts, the findings of the certified EIR/EIS remain valid and no further analysis is required.

ii) Strong seismic ground shaking?

The EIR/EIS provides analysis of the potential for ground shaking to occur that could damage structures during strong earthquakes generated along faults in the region (Impact 3A.7-1). As described in the EIR/EIS, the potential for damage from strong seismic ground shaking is considered a potentially significant impact. Implementation of Mitigation Measures 3A.7-1a and 3A.7-1b would reduce the potentially significant impact to a less-than-significant level. No new information regarding seismic ground shaking been identified requiring new analysis or verification. No new significant impacts or substantially more severe impacts would occur. Therefore, the findings of the certified EIR/EIS remain valid and no further analysis is required.

iii) Seismic-related ground failure, including liquefaction?

The EIR/EIS analyzed the potential for seismic-related ground failure (Impact 3A.7-2), and found that it is unlikely that on- or off-site soils would be subject to liquefaction in the event of an earthquake. Therefore, direct impacts related to potential damage to structures from seismically-induced liquefaction are considered less than significant. No new information regarding seismic-related ground failure or liquefaction have been identified requiring new analysis or verification. Because there are no new significant impacts or substantially more severe impacts, the findings of the certified EIR/EIS remain valid and no further analysis is required.

iv) Landslides?

The area in which the project is located is made of rolling hills with low to no potential for landslides. As described on page 3A.7-6 of the EIR/EIS, no landslides have been recorded in the vicinity of the project. As discussed on page 3B.7-5, the landslide potential for native and engineered slopes depends on the gradient, localized geology and soils, amount of rainfall, amount of excavation, and seismic activity. Only a narrow strip along the County’s eastern boundary, from the Placer County line to the Cosumnes River, is considered to have landslide potential at specific locations. Because the project area is not within the area for landslide potential, this topic was not addressed in an impact discussion. Even so, implementation of Mitigation Measures 3A.7-1a and 3A.7-1b would reduce any potential impact related to landslides and other soil instability by requiring site-specific geotechnical reports and earthwork monitoring. All project facilities would be designed in accordance with the latest California Building Codes that include soil stability requirements and protections from landslides. No new information regarding landslides has been identified requiring new analysis or verification. Because the project would not substantially change the type of development that would occur at the site, no new significant impacts or substantially more severe impacts would occur. Therefore, the findings of the certified EIR/EIS remain valid and no further analysis is required.

b) Result in substantial soil erosion or the loss of topsoil?

The EIR/EIS analyzed the potential for construction activities to result in substantial soil erosion or the loss of topsoil (Impact 3A.7-3). As described in the EIR/EIS, project implementation would involve intensive grading and construction activities. The impacts from these activities would be potentially significant. Implementation of Mitigation Measure 3A.7-3 along with Mitigation Measure 3A.9-1 would reduce potentially significant construction-related erosion to a less-than-significant level. The project would result in the same types and intensity of construction activities as those evaluated in the FPASP EIR/EIS. No new information regarding on- or off-site erosion has been identified requiring new analysis or verification. No new significant impacts or substantially more severe impacts would occur. Therefore, the findings of the certified EIR/EIS remain valid and no further analysis is required.

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?

As described in Impacts 3A.7-4 and 3A.7-5 of the EIR/EIS, implementation of the FPASP would result in potentially significant impacts regarding potential geologic hazards from construction in bedrock/rock outcroppings and seasonal subsurface water flows from surface infiltration. By implementing Mitigation Measures 3A.7-1a, 3A.7-4, and 3A.7-5, the impact would be reduced to a less-than-significant level. No changes in soils at the site have occurred since the EIR/EIS was certified; therefore, no new significant impacts or substantially more severe impacts would occur. The findings of the certified EIR/EIS remain valid and no further analysis is required.

d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994, as updated), creating substantial risks to life or property?

As described in Impact 3A.7-6 of the EIR/EIS, the project area does contain soils with moderate to high shrink-swell potential, indicating the soils are expansive. The EIR/EIS found that this impact would be potentially significant. However, with the implementation of Mitigation Measures 3A.7-1a and 3A.7-1b, the impact would be reduced to a less-than-significant level. No changes in soils at the site have occurred since the EIR/EIS was certified. No new significant impacts or substantially more severe impacts would occur. Therefore, the findings of the certified EIR/EIS remain valid and no further analysis is required.

e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?

As described in the EIR/EIS, the FPASP, as well as the project, would use piped sewer service from Sacramento Regional County Sanitation District and/or El Dorado Irrigation District. Septic systems would not be required and there would be no impact. This condition has not changed. No new significant impacts or substantially more severe impacts would occur. Therefore, the findings of the certified EIR/EIS remain valid and no further analysis is required.

Mitigation Measures

The following mitigation measures were referenced in the EIR/EIS analysis and would continue to remain applicable if the project were approved.

- Mitigation Measure 3A.7-1a: Prepare site-specific geotechnical report per CBC requirements and implement appropriate recommendations.
- Mitigation Measure 3A.7-1b: Monitor earthwork during earthmoving activities.
- Mitigation Measure 3A.7-3: Prepare and implement the appropriate grading and erosion control plan.
- Mitigation Measure 3A.7-4: Prepare a seismic refraction survey and obtain appropriate permits for all onsite and offsite elements East of Old Placerville Road.

- Mitigation Measure 3A.7-5: Divert seasonal water flows away from building foundations.

The EIR/EIS concluded that mitigation measures were adequate to reduce the risk regarding geology and soils to a less-than-significant level.

CONCLUSION

No new circumstances or project changes have occurred nor has any new information been identified requiring new analysis or verification. Therefore, the conclusions of the EIR/EIS remain valid and approval of the project would not result in new or substantially more severe significant impacts to geology and soils.

4.7 GREENHOUSE GAS EMISSIONS

Environmental Issue Area	Where Impact Was Analyzed in the EIR/EIS.	Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	Any New Information Requiring New Analysis or Verification?	Do Prior Environmental Documents' Mitigations Address/Resolve Impacts?
7. Greenhouse Gas Emissions. Would the project:				
a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	Environmental Setting p. 3A.4-1 to 3A.4-4 and updated below; Regulatory Setting p. 3A.4-4 to 3A.4-9 and updated below; Impact 3A.4-1 and Impact 3A.4-2.	No	No	Yes
b. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	Same as above.	No	No	Yes

4.7.1 Discussion

Since the Draft FPASP EIR/EIS was certified in 2011, new information about the science of climate change has become available and the relationship between greenhouse gas (GHG) emissions and land use planning has become better understood. For these reasons, updated and comprehensive environmental and regulatory settings are provided in this document.

ENVIRONMENTAL SETTING

The Physical Scientific Basis

Certain gases in the earth's atmosphere, classified as GHG emissions, play a critical role in determining the earth's surface temperature. Solar radiation enters the earth's atmosphere from space. A portion of the radiation is absorbed by the earth's surface and a smaller portion of this radiation is reflected back toward space. This absorbed radiation is then emitted from the earth as low-frequency infrared radiation.
The frequencies at which bodies emit radiation are proportional to temperature. The earth has a much lower temperature than the sun; therefore, the earth emits lower frequency radiation. Most solar radiation passes through GHGs; however, infrared radiation is absorbed by these gases. As a result, radiation that otherwise would have escaped back into space is instead "trapped," resulting in a warming of the atmosphere. This phenomenon, known as the greenhouse effect, is responsible for maintaining a habitable climate on Earth. Without the greenhouse effect, Earth would not be able to support life as we know it.

Prominent GHGs contributing to the greenhouse effect are carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). Human-caused emissions of these GHGs in excess of natural ambient concentrations are believed responsible for intensifying the greenhouse effect and leading to a trend of unnatural warming of the earth's climate, known as global climate change or global warming. It is "extremely likely" that more than half of the observed increase in global average surface temperature from 1951 to 2010 was caused by the anthropogenic increase in GHG concentrations and other anthropogenic forces together (Intergovernmental Panel on Climate Change [IPCC] 2014:3, 5).

Climate change is a global problem. GHGs are global pollutants, unlike criteria air pollutants and toxic air contaminants, which are pollutants of regional and local concern. Whereas pollutants with localized air quality effects have relatively short atmospheric lifetimes (about one day), GHGs have long atmospheric lifetimes (one to several thousand years). GHGs persist in the atmosphere for long enough time periods to be dispersed around the globe. Although the exact lifetime of any particular GHG molecule is dependent on multiple variables and cannot be pinpointed, it is understood that more CO_2 is emitted into the atmosphere than is sequestered by ocean uptake, vegetation, and other forms of sequestration. CO_2 sinks, or reservoirs, include vegetation and the ocean, which absorb CO_2 through sequestration and dissolution, respectively, two of the most common processes of CO_2 sequestration. Of the total annual human-caused CO_2 emissions, approximately 55 percent is sequestered through ocean and land uptakes every year, averaged over the last 50 years, whereas the remaining 45 percent of human-caused CO_2 emissions remains stored in the atmosphere (IPCC 2013:467).

The quantity of GHGs that it takes to ultimately result in climate change is not precisely known; suffice it to say, the quantity is enormous, and no single project alone would measurably contribute to a noticeable incremental change in the global average temperature, or to global, local, or micro climates. From the standpoint of CEQA, GHG impacts to global climate change are inherently cumulative.

Greenhouse Gas Emission Sources

Emissions of GHGs contributing to global climate change are attributable in large part to human activities associated with the transportation, industrial/manufacturing, utility, residential, commercial, and agricultural emissions sectors (ARB 2014a). In California, the transportation sector is the largest emitter of GHGs, followed by electricity generation (ARB 2014a). Emissions of CO_2 are, largely, byproducts of fossil fuel combustion. CH_4, a highly potent GHG, primarily results from off-gassing (the release of chemicals from nonmetallic substances under ambient or greater pressure conditions) and is largely associated with agricultural practices and landfills. N_2O is also largely attributable to agricultural practices and soil management. Additionally, high-GWP gases have atmospheric insulative properties that are hundred to tens of thousands of times greater than that of CO_2. HFCs, PFCs, and SF_6 are some of the most common types of high-global warming potential (GWP) gases and result from a variety of industrial processes. HFCs and PFCs are used as refrigerants and can be emitted through evaporation and leakage. SF_6 is a powerful electrical insulator used in power transmission and semiconductor manufacturing and is emitted through evaporation and leakage into the atmosphere.

Effects of Climate Change on the Environment

IPCC was established in 1988 by the World Meteorological Organization and the United Nations Environment Programme to provide the world with a scientific view on climate change and its potential effects. According to the IPCC global average temperature is expected to increase relative to the 1986-2005 period by 0.3–4.8°C (0.5-8.6 °F) by the end of the 21st century (2081-2100), depending on future GHG emission scenarios (IPCC 2014:SPM-8). This temperature range represents the lower and higher bounds of five mitigation scenarios analyzed by the IPCC – two stringent scenarios, two intermediate scenarios, and a worst-case scenario. Temperatures in California are projected to increase 2.7°F above 2000 averages by 2050 and, depending on global emission levels, 4.1–8.6°F by 2100 (California Energy Commission [CEC] 2012:2).

Physical conditions beyond average temperatures could be indirectly affected by the accumulation of GHG emissions. For example, changes in weather patterns resulting from increases in global average temperature are expected to result in a decreased volume of precipitation falling as snow in California and an overall reduction in snowpack in the Sierra Nevada. Based upon historical data and modeling, California Department of Water Resources (DWR) projects that the Sierra snowpack will experience a 25 to 40 percent reduction from its historic average by 2050 (DWR 2008:4). An increase in precipitation falling as rain rather than snow also could lead to increased potential for floods because water that would normally be held in the Sierra Nevada until spring could flow into the Central Valley concurrently with winter storm events (CEC 2012:5). This scenario would place more pressure on California's levee/flood control system.

Another outcome of global climate change is sea level rise. Sea level rose approximately seven inches during the last century. The National Research Council (NRC), in their 2012 report on *Sea-Level Rise for the Coasts of California, Oregon, and Washington* projects that the sea level along the California coastline will change between -1 inch (fall) to 24 inches (rise) between 2000 and 2050 and 4 to 66 inches (rise) between 2000 and the end of this century. This projection is based on projected future ice loss at the poles, steric and ocean dynamics, seismic trends affecting land subsidence, and other numerical models and extrapolations, accounting for increasing levels of uncertainty in future years (NRC 2012:6).

As the existing climate throughout California changes over time, the ranges of various plant and wildlife species could shift or be reduced, depending on the favored temperature and moisture regimes of each species. In the worst cases, some species would become extinct or be extirpated from the state if suitable conditions are no longer available (CEC 2012:11 and 12).

Changes in precipitation patterns and increased temperatures are expected to alter the distribution and character of natural vegetation and associated moisture content of plants and soils. An increase in frequency of extreme heat events and drought are also expected. These changes are expected to lead to increased frequency and intensity of large wildfires (CEC 2012:11).

Regulatory Setting

Greenhouse gas emissions and responses to global climate change are regulated by a variety of federal, state, and local laws and policies. Key regulatory and conservation planning issues applicable to the proposed project are discussed below.

Federal

Supreme Court Ruling of CO_2 as a Pollutant

EPA is the federal agency responsible for implementing the federal Clean Air Act (CAA) and its amendments. The Supreme Court of the United States ruled on April 2, 2007 that CO_2 is an air pollutant as defined under the CAA, and that EPA has the authority to regulate emissions of GHGs. The ruling in this case resulted in EPA taking steps to regulate GHG emissions and lent support for state and local agencies' efforts to reduce GHG emissions.

National Program to Cut Greenhouse Gas Emissions and Improve Fuel Economy for Cars and Trucks

On August 28, 2014, EPA and the California Department of Transportation's National Highway Traffic Safety Administration (NHTSA) finalized a new national program that would reduce GHG emissions and improve fuel economy for all new cars and trucks sold in the United States (NHTSA 2012). EPA proposed the first-ever national GHG emissions standards under the CAA, and NHTSA proposed Corporate Average Fuel Economy standards under the Energy Policy and Conservation Act. This proposed national program allows automobile manufacturers to build a single light-duty national fleet that satisfies all requirements under both Federal programs and the standards of California and other states. While this program will increase fuel economy to the equivalent of 54.5 mpg for cars and light-duty trucks by Model Year 2025, additional phases are being developed by NHTS and EPA that address GHG emission standards for new medium- and heavy-duty trucks (NHTSA 2014).

State

Executive Order B-30-15

On April 20, 2015 Governor Edmund G. Brown Jr. signed Executive Order B-30-15 to establish a California GHG reduction target of 40 percent below 1990 levels by 2030. The Governor's executive order aligns California's GHG reduction targets with those of leading international governments such as the 28-nation European Union which adopted the same target in October 2014. California is on track to meet or exceed the current target of reducing GHG emissions to 1990 levels by 2020, as established in the California Global Warming Solutions Act of 2006 (Assembly Bill 32, discussed below). California's new emission reduction target of 40 percent below 1990 levels by 2030 will make it possible to reach the ultimate goal of reducing emissions 80 percent under 1990 levels by 2050. This is in line with the scientifically established levels needed in the U.S. to limit global warming below 2 degrees Celsius (°C)—the warming threshold at which there will likely be major climate disruptions such as super droughts and rising sea levels according to scientific consensus.

Executive Order S-3-05

Executive Order S-3-05, signed by Governor Arnold Schwarzenegger in 2005, proclaims that California is vulnerable to the impacts of climate change. It declares that increased temperatures could reduce the Sierra Nevada snowpack, further exacerbate California's air quality problems, and potentially cause a rise in sea levels. To combat those concerns, the Executive Order established total GHG emission targets for the State. Specifically, emissions are to be reduced to the 2000 level by 2010, the 1990 level by 2020, and to 80 percent below the 1990 level by 2050.

As described below, legislation was passed in 2006 to limit GHG emissions to 1990 levels by 2020, but no additional reductions were specifically enumerated in the legislation.

Assembly Bill 32, the California Global Warming Solutions Act of 2006

In September 2006, Governor Schwarzenegger signed the California Global Warming Solutions Act of 2006 (AB 32). AB 32 establishes regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and a cap on statewide GHG emissions. AB 32 requires that statewide GHG emissions be reduced to 1990 levels by 2020. AB 32 also requires that these reductions "…shall remain in effect unless otherwise amended or repealed. (b) It is the intent of the Legislature that the statewide greenhouse gas emissions limit continue in existence and be used to maintain and continue reductions in emissions of greenhouse gases beyond 2020. (c) The (Air Resources Board) shall make recommendations to the Governor and the Legislature on how to continue reductions of greenhouse gas emissions beyond 2020." [California Health and Safety Code, Division 25.5, Part 3, Section 38551]

AB 32 Climate Change Scoping Plan and Update

In December 2008, ARB adopted its Climate Change Scoping Plan, which contains the main strategies California will implement to achieve reduction of approximately 118 million metric tons (MMT) of CO_2-equivalent (CO_2e) emissions, or approximately 21.7 percent from the state's projected 2020 emission level of 545 MMT of CO_2e under a business-as-usual scenario (this is a reduction of 47 MMT CO_2e, or almost 10 percent, from 2008 emissions). ARB's original 2020 projection was 596 MMT CO_2e, but this revised 2020 projection takes into account the economic downturn that occurred in 2008 (ARB 2011a). The Scoping Plan reapproved by ARB in August 2011 includes the Final Supplement to the Scoping Plan Functional Equivalent Document, which further examined various alternatives to Scoping Plan measures. The Scoping Plan also includes ARB-recommended GHG reductions for each emissions sector of the state's GHG inventory. ARB estimates the largest reductions in GHG emissions to be achieved by 2020 will be by implementing the following measures and standards (ARB 2011a):

- improved emissions standards for light-duty vehicles (estimated reductions of 26.1 MMT CO_2e),
- the Low-Carbon Fuel Standard (15.0 MMT CO_2e),
- energy efficiency measures in buildings and appliances (11.9 MMT CO_2e),
- a renewable portfolio and electricity standards for electricity production (23.4 MMT CO_2e), and
- the Cap-and-Trade Regulation for certain types of stationary emission sources (e.g., power plants).

In May 2014, ARB released and has since adopted the *First Update to the Climate Change Scoping Plan* to identify the next steps in reaching AB 32 goals and evaluate the progress that has been made between 2000 and 2012 (ARB 2014b:4 and 5). According to the update, California is on track to meet the near-term 2020 GHG limit and is well positioned to maintain and continue reductions beyond 2020 (ARB 2014b:ES-2). The update also reports the trends in GHG emissions from various emission sectors.

The update also elaborates on potential GHG reduction goals beyond 2020:

> California will develop a mid-term target to frame the next suite of emission reduction measures and ensure continued progress toward scientifically based targets. This target should be consistent with the level of reduction needed [by 2050] in the developed world to stabilize warming at 2°C (3.6°F)

> [above pre-industrial levels] and align with targets and commitments elsewhere. The European Union has adopted an emissions reduction target of 40 percent below 1990 levels by 2030. The United Kingdom has committed to reduce its emissions by 50 percent below 1990 levels within the 2022–2027 timeframe, and Germany has set its own 2030 emissions target of 55 percent below 1990 levels. The United States, in support of the Copenhagen Accord, pledged emission reductions of 42 percent below 2005 levels in 2030 (which, for California, translates to 35 percent below 1990 levels).
>
> This level of reduction is achievable in California. In fact, if California realizes the expected benefits of existing policy goals (such as 12,000 megawatts [MW] of renewable distributed generation by 2020, net zero energy homes after 2020, existing building retrofits under AB 758, and others) it could reduce emissions by 2030 to levels squarely in line with those needed in the developed world and to stay on track to reduce emissions to 80 percent below 1990 levels by 2050. Additional measures, including locally driven measures and those necessary to meet federal air quality standards in 2032, could lead to even greater emission reductions (ARB 2014b:34).
>
> As supported by many of California's climate scientists and economists, a key next step needed to build on California's framework for climate action is to establish a mid-term statewide emission reduction target. Cumulative emissions drive climate change, and a continuum of action is needed to reduce emissions not just to stated limits in 2020 or 2050, but also every year in between (ARB 2014b:ES6).

The update summarizes sector-specific actions needed to stay on the path toward the 2050 target. While the update acknowledges certain reduction targets by others (such as in the Copenhagen Accord), it stops short of recommending a specific target for California, instead acknowledging that mid-term targets need to be set "consistent with the level of reduction needed [by 2050] in the developed world to stabilize warming at 2°C (3.6°F) [above pre-industrial levels]."

Actions are recommended for the energy sector, transportation (clean cars, expanded zero-emission vehicle program, fuels policies, etc.), land use (compliance with regional sustainability planning targets), agriculture, water use (more stringent efficiency and conservation standards, runoff capture, etc.), waste (elimination of organic material disposal, expanded recycling, use of Cap and Trade program, etc.), green building (strengthen Green Building Standards), and other sectors. Many of the actions that result in meeting targets will need to be driven by new or modified regulations.

At the time of writing of this document, however, no specific reduction goal beyond 2020 has been recommended or formally adopted by ARB or the California State Legislature other than the 2050 goal included in Executive Order S-3-05 (discussed above). As noted in the discussion of AB 32, above, the ARB is tasked with making a recommendation for targets beyond 2020 as part of the legislation.

Senate Bill 375

SB 375, signed by the Governor in September 2008, aligns regional transportation planning efforts, regional GHG emission reduction targets for cars and light duty trucks, and land use and housing allocation. SB 375 requires Metropolitan Planning Organizations (MPOs) to adopt a Sustainable Communities Strategy (SCS) or Alternative Planning Strategy, showing prescribed land use allocation in each MPO's Regional Transportation Plan. ARB, in consultation with the MPOs, is to provide each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in their respective regions for 2020 and 2035.

The applicable MPO in the project region is the Sacramento Area Council of Governments (SACOG), which includes Placer County except for of the Lake Tahoe Basin. SACOG adopted its SCS in 2012. SACOG was tasked by ARB to achieve a 9 percent per capita reduction by 2020 and a 16 percent per capita reduction by 2035, which ARB confirmed the region would achieve by implementing its Sustainable Communities Strategy (ARB 2013).

Advanced Clean Cars Program

In January 2012, ARB approved the Advanced Clean Cars program which combines the control of GHG emissions and criteria air pollutants, as well as requirements for greater numbers of zero-emission vehicles, into a single package of standards for vehicle model years 2017 through 2025. The new rules strengthen the GHG standard for 2017 models and beyond. This will be achieved through existing technologies, the use of stronger and lighter materials, and more efficient drivetrains and engines. The program's zero-emission vehicle regulation requires battery, fuel cell, and/or plug-in hybrid electric vehicles to account for up to 15 percent of California's new vehicle sales by 2025. The program also includes a clean fuels outlet regulation designed to support the commercialization of zero-emission hydrogen fuel cell vehicles planned by vehicle manufacturers by 2015 by requiring increased numbers of hydrogen fueling stations throughout the state. The number of stations will grow as vehicle manufacturers sell more fuel cell vehicles. By 2025, when the rules will be fully implemented, the statewide fleet of new cars and light trucks will emit 34 percent fewer GHG emissions and 75 percent fewer smog-forming emissions than the statewide fleet in 2016 (ARB 2011b).

Senate Bill 97 of 2007

SB 97 directed the California Natural Resources Agency to adopt amendments to the CEQA Guidelines to specifically address GHG emissions. The Amendments became effective on March 18, 2010. This EIR complies with these Amendments and the CEQA checklist questions added to Appendix G of the CEQA Guidelines in response to SB 97 are discussed under the Significance Criteria heading below.

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Construction-Generated Greenhouse Gas Emissions

Construction-related GHG emissions were analyzed under Impact 3A.4-1 of the FPASP EIR/EIS. Modeling was conducted using the Urban Emissions Model (URBEMIS 2007) and estimated that approximately 50,456 MT CO_2e would be generated by construction activity during the multiple-decade buildout period of the FPASP, including the adopted Folsom Heights plan. Because of the intensity and duration of construction activities associated with all development under the FPASP, including the project, and presuming that this level of construction-generated GHG emissions would be substantial compared to other construction projects in the region and in the State, the analysis determined that construction-generated GHG emission levels would have a substantial contribution to GHGs that cause climate change. Therefore, the analysis concluded, GHG emissions associated with construction under the FPASP would result in a cumulatively considerable incremental contribution to this significant and unavoidable cumulative impact.

SMAQMD did not have a recommended threshold for evaluating construction-related GHGs at the time of the FPASP EIR/EIS was prepared. Since that time, however, SMAQMD has developed a mass emission threshold of 1,100 MT CO_2e/year for determining whether construction-generated GHG emissions are significant (SMAQMD 2014a:6-12). Based on 50,456 MT CO_2e provided in the FPASP EIR/EIS for construction of the entire FPASP, GHG emissions generated by construction of the FPASP (including the Folsom Heights plan) would exceed SMAQMD's threshold.

The types of emissions-generating construction activity would generally be the same under the project as the adopted Folsom Heights plan, as well as the quantity of land that would be developed and the intensity and pace of construction. Overall, development within the Folsom Heights site under the amended plan would be similar in area, size, and intensity to what was approved under the FPASP. For these reasons it is not anticipated that the project would result in any new circumstances involving new significant impacts or substantially more severe impacts pertaining to construction-generated GHG emissions then were identified in the FPASP EIR/EIS.

Implementation of Mitigation Measures 3A.4-1a, which focuses on reducing construction-generated emissions of criteria air pollutants and precursors, would also result in reductions in construction-generated GHGs. Similarly, implementation of Mitigation Measures 3A.4-1b, which requires applicants to pay an off-site mitigation fee to SMAQMD to offset construction-generated emissions of NOx would also result in reductions in construction-generated GHGs. Furthermore, Mitigation Measure 3A.4-1 requires implementation of additional measures to minimize construction-generated GHG emissions. These mitigation measures would generally result in the same reductions in GHG emissions under the project as the adopted FPASP. Therefore, the conclusions of the EIR/EIS remain valid and no additional analysis would be required.

Operational Greenhouse Gas Emissions

GHG emissions and associated climate change impacts of the approved FPASP were evaluated in Section 4.7 of the 2010 Draft FPASP EIR/EIS. The methods of analysis for GHG estimation have evolved since the FPASP EIR/EIS was prepared. Since that time, the Urban Emissions model (URBEMIS) that was used in the FPASP EIR/EIS analysis was replaced with the California Emissions Estimator Model (CalEEMod). CalEEMod is now the widely-recognized modeling tool by air districts in California for estimating GHG emissions for development projects, including SMAQMD (SMAQMD 2014a:6-7). Also, SMAQMD now recommends a specific threshold of significance for evaluating GHG emissions from land use development projects, as discussed above. The replacement of URBEMIS with CalEEMod, as well as the new threshold and guidance recommended by SMAQMD, do not constitute "new information" as defined in CEQA Guidelines Section 15162, because information was known about GHGs at the time the FPASP was prepared and modeling methodologies similar to what is now used were available to estimate emissions. In this environmental review, an analysis is conducted to evaluate the project's impacts in the context of the current regulatory environment, to apply SMAQMD's threshold and methodology and, more specifically, to evaluate whether the project would have substantially more severe impacts with respect to climate change than the approved plan. As part of this analysis, mass GHG emissions were estimated for two separate scenarios, listed in Table 4.7-1, and discussed in further detail below.

Table 4.7-1 Greenhouse Gas Emissions Comparison Summary

	Approved Specific Plan for Folsom Heights Site, 2018	Amended Folsom Heights Plan, 2018
Greenhouse Gas Emissions (MT CO_2e/year)[1]		
Area Sources[2]	1,226	1,420
Energy Consumption[3]	3,377	2,359
Mobile Sources (vehicle trips)[4]	10,213	8,250
Solid Waste[5]	343	270
Water[3]	333	186
Total Mass GHG Emissions	15,492	12,485
Net Change		-3,007

Notes: See Appendix A for detail on model inputs, assumptions, and modeling parameters.

1 Emission estimates shown in this table do not account for the emission reductions that would be achieved by implementation of the *Folsom Plan Area Specific Plan Air Quality Mitigation Plan*, which is required by Mitigation Measure 3A.2-2 of the FPASP EIR/EIS.

2 Area sources of emissions include landscaping equipment and off-road equipment.

3 Emissions associated with electricity consumption, including electricity consumption associated with water consumption, would be greater under the No-Action-Taken Scenario because no reductions would be realized from the implementation of renewable requirements in the electric power generation industry and new efficiency standards for the heating and cooling of building interiors and water heating.

4 Emissions from vehicle trips would be greater under the No-Action-Taken Scenario because no reductions would result from regulations governing vehicle emission standards for GHGs, including the vehicle emission standards from Advanced Clean Cars and the Low-Carbon Fuel Standard. These regulations provide increasingly stringent emission standards over time.

5 No substantial difference would be expected in emissions associated with wastewater treatment, the generation of solid waste, landscaping.

MT = metric tons
CO_2e = carbon dioxide-equivalent
SP = service population (i.e., residents + jobs)

Source: Modeling and calculations conducted by Ascent Environmental 2016.

Emission levels were estimated using CalEEMod Version 2013.2. Detailed assumptions and input parameters are provided in Appendix A.

As shown above, the mass emission level generated by operation of the approved FPASP for the Folsom Heights plan and project would exceed the threshold of 1,100 MT CO_2e/year. However, the project would generate less GHGs annually than the approved Folsom Heights plan.

Therefore, GHG emissions associated with operation of the project would not result in any new circumstances involving new significant impacts or substantially more severe impacts related to GHG emissions than were identified in the FPASP EIR/EIS. Furthermore, the emissions estimates summarized in Table 4.7-1 in combination with this analysis fulfill the requirement of Mitigation Measure 3A.4-2a to complete a project-specific analysis of the amended Folsom Heights plan.

The analysis under Impact 3A.4-2 of the FPASP EIR/EIS determined that the FPASP would result in the loss of blue oak woodland and individual oak trees, which are a form of carbon storage and sequester carbon from the atmosphere. Therefore, the applicant still must fulfill the requirements of Mitigation Measure 3A.4-2b in the FPASP EIR/EIS. Mitigation Measure 3A.4-2b requires the applicant to participate in and implement an urban and community forestry program and/or off-site tree program to off-set loss in carbon sequestration associated with any removal of onsite trees.

b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Construction-Generated Greenhouse Gas Emissions

As discussed in (a), above, the types and amount of GHG-generating construction activity, as well as the reductions resulting from required mitigation, would generally be the same under the project as the approved FPASP for the Folsom Heights site. Also, construction-generated GHG emissions would exceed SMAQMD's mass emission threshold of 1,100 MT CO_2e/year under both the approved plan and the project. Therefore, construction-generated emissions under the approved plan and the project would be a substantial contribution to global climate change and would conflict with the AB 32 Scoping Plan However, because construction activity would generally be the same under the project as the approved plan, the project would not result in any new circumstances involving new significant impacts or substantially more severe impacts pertaining to construction-generated GHG emissions then were identified in the FPASP EIR/EIS.

Operational Greenhouse Gas Emissions

As discussed in (a), above, the project would have less GHG emissions than under the adopted Folsom Heights plan. Therefore, operational GHG emissions under the project would not be considered a cumulative contribution to climate change. Therefore, the conclusions of the EIR/EIS remain valid and approval of the project would not result in new or substantially more severe significant impacts.

Impacts of Climate Change on the Project

Section 3A.4.2 of the FPASP EIR/EIS discusses impacts on the FPASP related to global climate change. This section discusses ways in which global climate change could alter the physical environment in California including increased average temperatures; modifications to the timing, amount, and form (rain versus snow) of precipitation; changes in the timing and amount of runoff; reduced water supply; deterioration of water quality; elevated sea level; and effects on agriculture. The analysis in the FPASP EIR/EIS concluded that (1) either the climate change effect from these changes would not have the potential to substantially affect the FPASP area, or (2) because of significant uncertainty in projecting future conditions related to the climate change effect, it would be too speculative to reach a meaningful conclusion regarding the significance of any reasonably foreseeable direct impact on physical conditions in the project vicinity and, therefore, impacts are too speculative for meaningful consideration. No substantial changes in the understanding of climate change science have occurred since the FPASP was approved. Therefore, the conclusions of the EIR/EIS remain valid and no additional analysis is required.

Mitigation Measures

The following mitigation measures were referenced in the EIR/EIS analysis and would continue to remain applicable if the project were approved.

- Mitigation Measure 3A.4-1: Implement Additional Measures to Control Construction-Generated GHG Emissions.
- Mitigation Measure 3A.4-2a: Implement Additional Measures to Reduce Operational GHG Emissions.
- Mitigation Measure 3A.4-2b: Participate in and Implement an Urban and Community Forestry Program and/or Off-Site Tree Program to Off-Set Loss of On-Site Trees.

CONCLUSION

This report updates the environmental setting addressing GHG's and provides additional project-level GHG analysis. While the updated information and the project-specific analyses provide additional detail for the project site, the proposed amendment to the FPASP would not result in new or substantially more severe significant impacts to greenhouse gases. Therefore, no additional analysis is required.

4.8 HAZARDS AND HAZARDOUS MATERIALS

Environmental Issue Area		Where Impact Was Analyzed in the EIR	Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	Any New Information Requiring New Analysis or Verification?	Do Prior Environmental Documents Mitigations Address/Resolve Impacts?
8.	**Hazards and Hazardous Materials. Would the project:**				
a.	Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	Setting pp. 3A.8-11, 3A.8-12 Impact 3A.8-1	No	No	NA
b.	Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	Setting p. 3A.8-13 Impact 3A.8-2	No	No	Yes
c.	Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	Setting p. 3A.8-13 Impact 3A.8-2	No	No	Yes
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?	Setting p. 3A.8-2 to 3A.8-9 Impact 3A.8-3	No	No	Yes
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?	Setting p. 3A.8-18 No Impact	No	No	NA
f.	For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working on the project area?	Setting pp. 3A.8-18, 3A.8-19 No Impact	No	No	NA
g.	Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	Setting p. 3A.8-14 Impact 3A.8-4	No	No	Yes
h.	Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	Setting pp. 3A.8-18, 3A.8-19 No Impact	No	No	NA
i.	Create a significant hazard to the public through use of explosive materials in grading or earth-moving activities?	Setting pp.3A.8-13, 3A.8-14 Impact 3A.8-5	No	No	Yes
j.	Expose project residents to excessive electrical or magnetic fields?	Setting pp. 3A.8-7, 3A.8-11, 3A.8-12, 3A.8-13, 3A.8-15 Impact 3A.8-6	No	No	Yes
k.	Create public health hazards from increased exposure to mosquitoes by providing substantial new habitat for mosquitoes or other vectors?	Setting pp. 3A.8-10, 3A.8-15 Impact 3A.8-7	No	No	Yes

4.8.1 Discussion

No substantial change in the environmental and regulatory settings related to hazards and hazardous materials, described in EIR/EIS Section 3A.8 Hazards and Hazardous Materials – Land, has occurred since certification of the EIR/EIS in 2011. The EIR/EIS included three criteria that are not included in the current Appendix G of the CEQA guidelines.

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

The EIR/EIS analysis of the adopted FPASP (Impact 3A.8-1) considered the potential for the public to be exposed to hazardous materials through the increased use, storage, and disposal of household hazardous materials and for commercial and industrial development to result in increased use, storage, and/or disposal of hazardous materials during routine operations. The EIR/EIS analysis concluded that the impacts would be less than significant and no mitigation measures are required. The project would not change the overall pattern of development of the types of hazardous materials that would be used, handled, or transported to the site. No new significant impacts or substantially more severe impacts would occur. Therefore, the findings of the certified EIR/EIS remain valid and no further analysis is required.

b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and/or accident conditions involving the release of hazardous materials into the environment?

As discussed in the EIR/EIS, potential sources of hazards and hazardous materials on the FPASP include structures that may contain asbestos-containing materials and lead paint, polychlorinated biphenyls, abandoned mine shafts, and chemicals from mining activities. However, as described on page 3A.8-7 of the Draft EIR/EIS, a review of agency databases, including the Cortese List, did not identify any recognized environmental conditions (RECs) associated with the Folsom Heights property. As there was no evidence of RECs for this site, no further investigation was recommended. No changes to the conditions of the site or the presence of hazardous materials has occurred since approval of the FPASP. No new significant impacts or substantially more severe impacts would occur. Therefore, the findings of the certified EIR/EIS remain valid and no further analysis is required.

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

As discussed above, there are no known hazardous material sites present in the Folsom Heights area. No changes to the conditions of the site or the presence of hazardous materials has occurred since approval of the FPASP. No new significant impacts or substantially more severe impacts would occur. Therefore, the findings of the certified EIR/EIS remain valid and no further analysis is required.

d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code §65962.5 and, as a result, would it create a significant hazard to the public or the environment?

As discussed in Impact 3A.8-3, 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. The EIR/EIS concluded that there would be a potentially significant impact because Area 40 is in the area which is planned for development and it has the potential to create a public health hazard. With the implementation of Mitigation Measures 3A.8-3a, 3A.8-3b, and 3A.8-3c, which would require that remediation activities are fully disclosed, coordinated with development to ensure construction doesn't affect remediation, and the applicants provide notice to the City that they have fulfilled DTSC requirements, the impact would be reduced to less than significant. However, Area 40 is outside of the Folsom Heights project area and the project would have no impact to this site; therefore, adopted mitigation would not be applicable to the project. As described under b), the Folsom Heights project area is not located on a list of hazardous materials sites compiled pursuant to Government Code §65962.5. No new significant impacts or substantially more severe impacts would occur and the findings of the certified EIR/EIS remain valid and no further analysis is required.

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?

As described on page 3A.8-18 of the EIR/EIS, the project area is not located within two miles of a public, public-use, or private airport, nor is it within and airport land use plan area. The nearest airport, Sacramento Mather Airport, is located approximately seven miles southwest of the SPA. Therefore, impacts related to airport or private airfield safety were not discussed in the EIR/EIS. No new airports have been developed near the project area. No new significant impacts or substantially more severe impacts would occur. Therefore, the findings of the certified EIR/EIS remain valid and no further analysis is required.

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?

As described on page 3A.8-19 of the EIR/EIS, the project is not located within the vicinity of a private airstrip. Impacts related to private airfield safety were not discussed in the EIR/EIS. No new airports have been developed near the project area. No new significant impacts or substantially more severe impacts would occur. Therefore, the findings of the certified EIR/EIS remain valid and no further analysis is required.

g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

As described in Impact 3A.8-4, implementation of the project would require permits from the City of Folsom to ensure that the project provides sufficient hydrant locations, street width, circulation, and project access for fire and emergency response units. Implementation of the project would not conflict with any adopted emergency response or evacuation plans. The impact was determined to be less than significant and no mitigation was required. No changes to these circumstances have occurred. No new significant impacts or substantially more severe impacts would occur. Therefore, the findings of the certified EIR/EIS remain valid and no further analysis is required.

h) Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

As described on page 3A.8-18 of the EIR/EIS, the FPASP was not located in an area with significant risk related to wildland fires and no detailed analysis related to this topic was evaluated. No changes to the location of the project have occurred and no changes to the risks from wildfires has occurred since approval of the FPASP. No new significant impacts or substantially more severe impacts would occur. Therefore, the findings of the certified EIR/EIS remain valid and no further analysis is required.

i) Create a significant hazard to the public through use of explosive materials in grading or earth-moving activities?

As described in Impact 3A.8-5, implementation of the project may require blasting as a part of excavation and removal of rock from the eastern slopes of the FPASP within the Folsom Heights plan area. The EIS/EIR concluded that the potential for accidents resulting in injuries or fatalities was a potentially significant impact. Mitigation Measure Mitigation Measure 3A.8-5 would require the applicant to prepare and implement a blasting safety plan in consultation with a qualified blasting contractor. With implementation of this mitigation measure that would also include securing permits from the appropriate agencies, the impact would be reduced to less than significant. No changes to the risks from the use of explosive materials has occurred since approval of the FPASP. No new significant impacts or substantially more severe impacts would occur. Therefore, the findings of the certified EIR/EIS remain valid and no further analysis is required.

j) Expose project residents to excessive electrical or magnetic fields?

As described in Impact 3A.8-6, The FPASP is traversed by two 230- kilovolt (kV), one 115-kV, and one 69-kV electrical transmission lines on steel lattice towers within a single 400-foot-wide right-of-way, with lines spread throughout the easement to approximately 50 feet from the edges of the right-of-way. These lines are located on the far west of the FPASP area and over 2 miles from the Folsom Heights boundary, and the signals would dissipate and not expose persons within the Folsom Heights area to excessive electrical or magnetic fields. Therefore, there is no impact. No new significant impacts or substantially more severe impacts would occur. Therefore, the findings of the certified EIR/EIS remain valid and no further analysis is required.

k) Create public health hazards from increased exposure to mosquitoes by providing substantial new habitat for mosquitoes or other vectors?

As described in Impact 3A.8-7, implementation of the FPASP includes a variety of features that are considered to be mosquito attractants, including 16 detention basins, storm drains, and roadside ditches. Typical stormwater facilities create habitat for mosquitoes that are attracted to above-ground, clean water sources, and underground, polluted (nutrient rich) sources. Because stormwater infrastructure would be located in close proximity to proposed development, diseases, such as West Nile Virus, could be easily spread within the population through mosquito vectors. The EIR/EIS found that there would be a potentially significant impact because the FPASP did not include mosquito prevention BMPs. Mitigation Measure 3A.8-7 required the applicants to prepare and implement a vector control plan in consultation with the Sacramento-Yolo Mosquito and Vector Control District. With this mitigation, the risk to human health because of mosquito-borne disease would be reduced to less than significant.

The project would be subject to the requirements of Mitigation Measure 3A.8-7. No changes related to possible exposure to mosquito- or other vector-borne disease have occurred since approval of the FPASP. No new significant impacts or substantially more severe impacts would occur. Therefore, the findings of the certified EIR/EIS remain valid and no further analysis is required.

Mitigation Measures

The following mitigation measures were referenced in the EIR/EIS analysis and would continue to remain applicable if the project was approved.

- Mitigation Measure 3A.8-5: Prepare and implement a blasting safety plan in consultation with a qualified blaster.
- Mitigation Measure 3A.8-7: Prepare and implement a vector control plan in consultation with the Sacramento-Yolo Mosquito and Vector Control District.

CONCLUSION

No new circumstances or project changes related to hazards and hazardous materials have occurred nor has any new information been identified requiring new analysis or verification. Therefore, the conclusions of the EIR/EIS remain valid and approval of the project would not result in new or substantially more severe significant impacts. No additional analysis is required.

4.9 HYDROLOGY AND WATER QUALITY

Environmental Issue Area		Where Impact Was Analyzed in the EIR/EIS.	Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	Any New Information Requiring New Analysis or Verification?	Do Prior Environmental Documents Mitigations Address/Resolve Impacts?
9.	**Hydrology and Water Quality. Would the project:**				
a.	Violate any water quality standards or waste discharge requirements?	Setting pp. A.9-10 to 3A.9-23 Impacts 3A.9-1 and 3A.9-3	No	No	Yes
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 (e.g., 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?	Setting pp. 3A.9-5 to 3A.9-6 Impact 3A.9-6	No	No	Yes
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?	Setting pp. 3A.9-1 to 3A.9-5 Impacts 3A.9-1 and 3A.9-3	No	No	Yes
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?	Setting pp. 3A.9-1 to 3A.9-5 Impacts 3A.9-2	No	No	Yes
e.	Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?	Setting pp. 3A.9-1 to 3A.9-5 Impacts 3A.9-1 and 3A.9-3	No	No	Yes
f.	Otherwise substantially degrade water quality?	Setting pp. 3A.9-6 to 3A.9-9 Impacts 3A.9-1 and 3A.9-3	No	No	Yes
g.	Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	Setting pp. 3A.9-5 to 3A.9.1-7 Impact 3A.9-5	No	No	Yes
h.	Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	Setting pp. 3A.9-5 to 3A.9.1-7 Impact 3A.9-5	No	No	Yes
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?	Setting p. 3A.9-20 Impact 3A.9-4	No	No	Yes
j.	Inundation by seiche, tsunami, or mudflow?	Setting pp. 3A.7-5 No Impact	No	No	NA

4.9.1 Discussion

No substantial change in the environmental and regulatory settings related to hydrology and water quality, described in EIR/EIS Section 3A.9 Hydrology and Water Quality – Land, has occurred since certification of the EIR/EIS in 2011.

a) Violate any water quality standards or waste discharge requirements?

The EIR/EIS addressed water quality impacts related to the approved FPASP in Section 3A.9, Hydrology and Water Quality. As described in Impacts 3A.9-1 and 3A.9-3, the FPASP could result in significant impacts to water quality because of soil disturbance during construction and alteration of water flows over the site. Implementation of Mitigation Measures 3A.9-1 and 3A.9-3 would reduce the impacts to a less-than-significant level by requiring a project-specific stormwater water quality maintenance plan. No substantial changes to the development plans for the Folsom Heights project area would occur with the project. The project would continue to comply with mitigation requirements outlined in the adopted mitigation for the FPASP. With implementation of this mitigation, no new significant impacts or substantially more severe impacts would occur. Therefore, the findings of the certified EIR/EIS remain valid and no further analysis is required.

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 (e.g., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted)?

The EIR/EIS addressed the FPASP's effect on groundwater recharge in Impact 3A.9-6. As described in this impact, the FPASP would introduce new impervious surfaces and there is poor natural groundwater recharge in the area. Most substantial recharge would occur along active stream channels. Impact 3A.9-6 concluded that the impact on groundwater recharge would be less-than-significant because those areas within the FPASP that are most conducive to groundwater recharge (e.g., the Carson Creek stream and tributary corridors) would generally be maintained in open space and as retention basins. No mitigation was required. The project would not substantially change development patterns and the amount of impermeable surfaces from that approved in the FPASP. Therefore, no new significant impacts or substantially more severe impacts would occur. The findings of the certified EIR/EIS remain valid and no further analysis is required.

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 on- or off-site erosion or siltation?

As discussed in Impact 3A.9-1 and Impact 3A.9-3, construction activities associated with development of the FPASP would create the potential for soil erosion and sedimentation both within and downstream of the FPASP and this was determined to be a significant impact. However, with the implementation of Mitigation Measures 3A.9-1 and 3A.9-3, which require a project-specific storm water pollution prevention plan and water quality maintenance plan, impacts would be reduced to a less-than-significant level. The project would not substantially change development patterns and the amount of impermeable surfaces from that approved in the FPASP. In addition, a project-specific storm water pollution prevention plan would be prepared consistent with Mitigation Measures 3A.9-1 and 3A.9-3. Therefore, no new significant impacts or substantially more severe impacts would occur. The findings of the certified EIR/EIS remain valid and no further analysis is required.

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 on- or off-site flooding?

The certified EIR/EIS addresses impacts resulting from alteration of drainage patterns and drainage capacity under the approved FPASP in Impact 3A.9-2. As described in this impact, urbanization of the FPASP area would increase runoff volume and peak flows, which could contribute to downstream flooding and erosion. Increased runoff to existing and proposed culverts within and downstream of the FPASP area could result in overtopping and flooding because of inadequate capacity for urbanized flow-rates, and could lead to bank erosion, elevated flood levels and increased runoff. The EIR/EIS concluded that there was a potentially significant impact related to stormwater runoff and the subsequent risk of flooding. Implementation of Mitigation Measure 3A.9-2 would reduce the potentially significant impact associated with the potential increased risk of flooding from increased stormwater runoff to a less-than-significant level because it requires the applicant to prepare, submit, and implement a final drainage plan. The project would not substantially change development or drainage patterns from that approved in the FPASP. Further, the project would continue to comply with mitigation requirements outlined in the adopted mitigation for the FPASP. With implementation of this mitigation, no new significant impacts or substantially more severe impacts would occur. Therefore, the findings of the certified EIR/EIS remain valid and no further analysis is required.

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?

As described in Impacts 3A.9-1 and 3A.9-3, the conversion of undeveloped land to urban land uses would have both short- and long-term effects on stormwater runoff. The project would not substantially change development or drainage patterns from that approved in the FPASP. Nonetheless, the impacts on drainage were found to be significant because the conversion of undeveloped land to urban land uses would have both short- and long-term effects on stormwater runoff. However, with the implementation of Mitigation Measures 3A.9-1 and 3A.9-3 which requires a project-specific storm water pollution prevention plan and water quality maintenance plan, the impact would be reduced to a less-than-significant level. Therefore, there would be no new significant impacts or substantially more severe impacts. The findings of the certified EIR/EIS remain valid and no further analysis is required.

f) Otherwise substantially degrade water quality?

The potential for the project to substantially degrade water quality is addressed in a) and e). There are no other unaddressed water quality impacts.

g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?

The EIR/EIS addressed impacts related to flood hazards in Impact 3A.9-5. A delineation of the proposed 200-year floodplain was developed for the FPASP. Development under the FPASP including the Folsom Heights project area would be subject to the requirements of SB 5 which disallow development in a flood hazard zone unless 200-year flood protection is provided. Because of this protection, the impact related to building in a floodplain would be less than significant. Floodplain designations for the site have not changed since approval of the FPASP. Further, the project would continue to be required to comply with the requirements of SB 5. Therefore, no new significant impacts or substantially more severe impacts would occur. The findings of the certified EIR/EIS remain valid and no further analysis is required.

h) Place within a 100-year flood hazard area structures that would impede or redirect flood flows?

This is addressed under g), above.

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?

As described in Impact 3A.9-4, there is a potentially significant risk of flooding because of the failure of a dam upstream of the FPASP. Mitigation Measure 3A.9-4 would reduce this risk to a less-than-significant level by requiring the applicant to inspect and evaluate existing dams within and upstream of the project site and make improvements if necessary. This mitigation would continue to apply to the project. Therefore, no new significant impacts or substantially more severe impacts would occur. The findings of the certified EIR/EIS remain valid and no further analysis is required.

j) Result in inundation by seiche, tsunami, or mudflow?

The FPASP, including the Folsom Heights project area, is not located in an area prone to seiches, tsunamis, or mudflows. No impact would occur. The findings of the certified EIR/EIS remain valid and no further analysis is required.

Mitigation Measures

The following mitigation measures were referenced in the EIR/EIS analysis and would continue to remain applicable if project were approved.

- Mitigation Measure 3A.9-1: Acquire appropriate regulatory permits and prepare and implement SWPPP and BMPs.
- Mitigation Measure 3A.9-2: Prepare and submit final drainage plans and implement requirements contained in those plans.
- Mitigation Measure 3A.9-3: Develop and implement a BMP and water quality maintenance plan.
- Mitigation Measure 3A.9-4: Inspect and evaluate existing dams within and upstream of the project site and make improvements if necessary.

CONCLUSION

No new circumstances or project changes have occurred nor has any new information been found requiring new analysis or verification. Therefore, the conclusions of the EIR/EIS remain valid and approval of the proposed amendment to the FPASP would not result in new or substantially more severe significant impacts to hydrology and water quality.

4.10 LAND USE AND PLANNING

Environmental Issue Area	Where Impact Was Analyzed in the EIR/EIS.	Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	Any New Information Requiring New Analysis or Verification?	Do Prior Environmental Documents Mitigations Address/Resolve Impacts?
10. Land Use and Planning. Would the project:				
a. Physically divide an established community?	Setting p. 3A.10-1 No Impact	No	No	NA
b. Conflict with any applicable land use plan, policy, or regulation 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 an environmental effect?	Setting pp. 3A.10-4 to 3A.10-28 Impacts 3A.10-1 and 3A.10-2	No	No	NA
c. Conflict with any applicable habitat conservation plan or natural community conservation plan?	Impact 3A.3-7	No	No	NA

4.10.1 Discussion

No substantial change in the environmental and regulatory settings related to land use and planning, described in EIR/EIS Section 3A.10 under Land Use and Agricultural Resources – Land and Section 3A.3 under Biological Resources – Land, has occurred since certification of the EIR/EIS in 2011.

a) Physically divide an established community?

As discussed in the certified EIR/EIS on page 3A.10-29, the project is located in an area which consists of livestock grazing lands. The only existing single-family residence and associated agricultural outbuildings are located on the western side of the SPA and would be outside of the Folsom Heights project area. Therefore, project implementation would not physically divide an established community and this issue was not evaluated in the EIR/EIS. No changes in development at the site have occurred since approval of the FPASP. No new significant impacts or substantially more severe impacts would occur. Therefore, the findings of the certified EIR/EIS remain valid and no further analysis is required.

b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, a general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

Impacts 3A.10-1 and 3A.10-2 in the EIR/EIS address consistency of the then-proposed FPASP with Sacramento Local Agency Formation Commission (LAFCo) Guidelines and the SACOG Sacramento Region Blueprint. The LAFCo Guidelines were relevant because the FPASP area was required to be annexed into the City of Folsom. Since the adoption of the FPASP, the area was annexed into the City and this impact discussion is no longer relevant.

As discussed on page 3A.10-39 of the Draft EIR/EIS, the FPASP was found to be consistent with the SACOG Sacramento Region Preferred Blueprint Scenario. As stated in Impact 3A.10-2, the FPASP provides fewer dwelling units than what is identified in the Blueprint. The Folsom Heights project would not change the number of dwelling units proposed under the FPASP. In addition, the project would continue to be consistent with the smart growth principles within the SACOG Sacramento Region Blueprint.

This project includes an amendment to the adopted FPASP. This project will remain consistent with the community vision, design framework, and planning principles. The changes to the land uses and backbone infrastructure will be evaluated and, if approved, the FPASP will be amended to include the changes. Because the project includes amending the FPASP, and the project remains consistent with other applicable plans and policies, impacts would be less than significant. No new significant impacts or substantially more severe impacts would occur. Therefore, the findings of the certified EIR/EIS remain valid and no further analysis is required.

c) Conflict with any applicable habitat conservation plan or natural community conservation plan?

As stated in Impact 3A.3-7, there is no adopted habitat conservation plan or natural community conservation plan that covers the area in which project is located and no new plans have been adopted since approval of the FPASP. Therefore, no new significant impacts or substantially more severe impacts would occur. The findings of the certified EIR/EIS remain valid and no further analysis is required.

Mitigation Measures

No mitigation measures were needed for the certified EIR/EIS regarding land use and planning. No additional mitigation measures are required for project for this topic.

CONCLUSION

No new circumstances or project changes have occurred nor has any new information been identified requiring new analysis or verification. Therefore, the conclusions of the EIR/EIS remain valid and approval of the project would not result in new or substantially more severe significant impacts to land use and planning.

4.11 MINERAL RESOURCES

Environmental Issue Area	Where Impact Was Analyzed in the EIR/EIS.	Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	Any New Information Requiring New Analysis or Verification?	Do Prior Environmental Documents Mitigations Address/Resolve Impacts?
11. Mineral Resources. Would the Project:				
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?	Setting pp. 3A.7-12 and 3A.7-13 Impacts 3A.7-8, 3A.7-9	No	No	Yes
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?	Setting pp. 3A.7-12 and 3A.7-13 Impacts 3A.7-8, 3A.7-9	No	No	NA

4.11.1 Discussion

No substantial change in the environmental and regulatory settings related to mineral resources, described in EIR/EIS Section 3A.7 Geology, Soils, Minerals, and Paleontological Resources – Land has occurred since certification of the EIR in 2011.

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? Or 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?

As described in Impacts 3A.7-8 and 3A.7-9, the FPASP area contains mineral resource zones for construction aggregate and kaolin clay. While the EIR/EIS found that the possible loss of the construction aggregate would be a less-than-significant impact, the possible loss of kaolin clay was determined to be potentially significant because it is unknown whether there could be an economically valuable deposit of kaolin clay that would be lost with development of the FPASP. While Mitigation Measure 3A.7-9 was included to determine if economically valuable mineral resources are present, they would still be lost because of the development. The impact was concluded to remain potentially significant and unavoidable. The Folsom Heights plan area is not located in the area with potential mineral resources including the kaolin clay resources. Therefore, the project would have no impact related to impacts to mineral resources. Because there are no new significant impacts or substantially more severe impacts and the findings of the certified EIR/EIS remain valid and no further analysis is required.

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?

This topic is addressed above, under a).

Mitigation Measures

None required for the project.

CONCLUSION

No new circumstances or project changes have occurred nor has any new information been identified requiring new analysis or verification. Therefore, the conclusions of the EIR/EIS remain valid and approval of the project would not result in new or substantially more severe significant impacts to mineral resources.

4.12 NOISE

Environmental Issue Area	Where Impact Was Analyzed in the DEIR/DEIS.	Any New Circumstances Involving New or Substantially More Severe Significant Impacts?	Any Substantially Important New Information Requiring New Analysis or Verification?	Do Prior Environmental Documents' Mitigations Address/Resolve Impacts?
12. Noise. Would the project result in:				
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?	Setting p. 3A.11-12 to 3A.11-17 Impacts 3A.11-4, 3A.11-5, and 3A.11-7	No	No	Yes, but remains significant and unavoidable
b. Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	Setting p. 3A.11-4 Impact 3A.11-3	No	No	NA
c. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	Setting pp. 3A.11-5 to 3A.11-11 Impacts 3A.11-4, 3A.11-5, and 3A.11-7	No	No	Yes, but remains significant and unavoidable
d. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	Setting pp. 3A.11-5 to 3A.11-11 Impact	No	No	NA
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?	Setting pp. 3A.11-5, 3A.11-10, 3A.11-11 Impact 3A.11-6 overflight	No	No	NA
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?	Setting pp. 3A.11-5, 3A.11-10, 3A.11-11 No Impact	No	No	NA

4.12.1 Discussion

No substantial change in the environmental and regulatory settings related to noise and vibration, described in FPASP EIR/EIS Sections 3A.11 Noise – Land, has occurred since certification of the EIR in. No new noise sources have been introduced near the planning area since the FPASP EIR/EIS was prepared.

a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or in other applicable local, state, or federal standards?

<u>**Long-Term Exposure of Sensitive Receptors to Increased Traffic Noise Levels from Project Operation**</u>

Long-term exposure of sensitive receptors to increased stationary-source noise levels from operation of the FPASP were analyzed under Impact 3A.11-5 of the FPASP EIR/EIS. Traffic noise levels with and without buildout of the FPASP, under both existing and future baseline conditions, were modeled using the Federal Highway Administration's Highway Noise Prediction Model for all the roadway segments in the traffic study area, including roadways in the City of Folsom, unincorporated areas of Sacramento County, the City of Rancho Cordova, El Dorado County, and nearby segments of U.S. 50. The modeling estimates showed that buildout of the FPASP would result in net increases in community noise equivalent levels (CNELs) along affected roadway segments in comparison to existing no project conditions that range from 6.7 to 10.0 decibels (dB). Traffic noise level increases along many roadway segments were considered substantial because they exceed 3.0 dB CNEL where existing or projected future traffic noise levels range between 60 and 65 dB CNEL, or 1.5 dB CNEL where existing or projected future traffic noise levels are greater than 65 dB day-night average noise level (L_{dn})/CNEL. Because there were numerous roadway segments for which project buildout of the FPASP would result in a substantial permanent increase in ambient noise levels at nearby sensitive receptors this analysis determined this impact would be significant. Mitigation Measure 3A.11-4 of the FPASP EIR/EIS required individual project applicants to ensure that specific Sound Transmission Class ratings are achieved by all noise-sensitive buildings built in the FPASP. Mitigation Measure 3A.11-4 also requires project applicants to conduct a site-specific analysis to determine predicted roadway noise impacts attributable to the project in accordance with adopted City noise standards and implement measures to reduce these impacts. Because the feasibility and effectiveness of mitigation is uncertain at this time the FPASP EIR/EIS determined this impact to be significant and unavoidable.

The project generally consists of the same types of collector roads that connect to area arterials as the approved FPASP. Overall, the project would generate less VMT than was approved. Thus, the size of the traffic noise increases resulting from trips generated by the project would not be substantially greater than determined under Impact 3A.11-5 of the FPASP EIR/EIS. As with the approved FPASP, additional detail about the severity and locations of receptors affected by these impacts will be understood when site-specific noise analyses are conducted to fulfill the requirements of Mitigation Measure 3A.11-4.

Long-Term Exposure of Sensitive Receptors to Increased Stationary-Source Noise Levels from Project Operation

Impact 3A.11-5 in the FPASP EIR/EIS discussed the potential impacts of long-term exposure of sensitive receptors, both existing and future, to increased stationary-source noise levels from project operation. The FPASP EIR/EIS addressed this impact area as it relates to a variety of stationary sources, including rooftop heating, ventilation, and air conditioning (HVAC) equipment; mechanical equipment; emergency electrical generators; parking lot activities; and loading dock operations. The respective noise impacts from these and other stationary sources were discussed and had significance determinations individually by source type.

The FPASP EIR/EIS determined that noises from mechanical HVAC could be primary noise sources associated with proposed residential, commercial, and industrial uses with the potential for significant impacts on nearby receptors. The FPASP EIR/EIS also determined that emergency generator, parking lot, and loading dock and delivery activities could have potentially significant impacts on sensitive receptors for long-term exposure due to the potential for the receptors to be located within range of noise levels exceeding applicable noise standards. For noise impacts from emergency facilities and outdoor recreational and educational activities, it was assumed that the normal operation of these facilities would be exempt from the Folsom City Noise Ordinance. Thus, the FPASP EIR/EIS determined that long-term noise impacts from emergency facilities and outdoor recreational and educational activities would be less than significant. Whether or not the project would change the significance determinations made by the FPASP EIR/EIS is discussed in more detail for each of the other stationary noise sources below.

Mechanical HVAC Equipment

Although the FPASP EIR/EIS did not anticipate noise from mechanical HVAC systems to exceed stationary-source noise standards at noise-sensitive land uses, the potential for impacts still exists. None of the changes to the layout of land uses in the project would result in substantial changes to this impact or an increase in its severity. Residential mechanical HVAC equipment could still impact adjacent residences; and, the commercial land uses would still be adjacent to residential land uses under the proposed amended specific plan. Thus, no new or substantially more severe impacts would occur from mechanical HVAC noise levels as a result of the project. The conclusions of the FPASP EIR/EIS regarding this noise impact remain valid and no further analysis is required.

Emergency Generators, Parking Lot, and Loading Dock and Delivery Activities

As discussed in the FPASP EIR/EIS, emergency generators, parking lot activity, and loading dock and delivery activities would most likely occur at industrial/office park and commercial land uses. These noise sources could result in significant impacts on sensitive receptors as far as 1,200 feet. As discussed in the project description, in general, the proposed application is largely consistent with the land uses proposed and approved for this portion of the FPASP. Therefore, no new or substantially more severe impacts would occur from noise associated with emergency generators, parking lot activity, and loading dock and delivery activities as a result of the project. The conclusions of the FPASP EIR/EIS remain valid and no further analysis is required.

Emergency Facilities and Outdoor Recreational and Educational Activities

The FPASP EIR/EIS stated that the Folsom City Municipal Code exempts noise associated with the operation of emergency facilities and from unlighted public parks, public playgrounds, and public or private schools from the hours of 7 a.m. to dusk, and from 7 a.m. to 11 p.m. for such facilities that are lighted. As discussed in the project description, in general, the proposed application is largely consistent with the land uses proposed and approved for this portion of the FPASP. Thus, no new or substantially more severe impacts would occur from noise generated by emergency facilities and outdoor recreational and educational activities as a result of the project. The conclusions of the FPASP EIR/EIS remain valid and no further analysis is required.

Compatibility of Proposed On-Site Land Uses with the Ambient Noise Environment

Under Impact 3A.11-7, the FPASP EIR/EIS analyzed whether noise-sensitive land use developed under the FPASP would be exposed to excessive noise levels from off-site noise sources, including activity at the Prairie City State Vehicular Recreation Area and activities at the Aerojet General Corporation site located several miles to the west of the Folsom Heights site, and roadway traffic.

The analysis determined that no portions of the FPASP, including the Folsom Heights site, would be exposed to noise levels generated at the Prairie City State Vehicular Recreation Area that exceed applicable standards. This would also be the case for the land uses developed under the project. Therefore, no new or substantially more severe impacts would occur from noise generated at the Prairie City State Vehicular Recreation Area as a result of the project. The conclusions of the FPASP EIR/EIS regarding noise generated at the Prairie City State Vehicular Recreation Area remain valid and no further analysis is required.

Land owned by the Aerojet General Corporation is located just west of the Folsom Heights. The FPASP EIR/EIS determined that activities at the Aerojet facility, including testing of rocket and aircraft engines, would not exceed the City's nontransportation noise standards because these noise-generating activities would be located a sufficient distance from any noise-sensitive land uses, would occur during less noise-sensitive daytime hours, and their duration would be relatively short. This would also be the case for the land uses developed under the project. Therefore, no new or substantially more severe impacts would occur from noise generated at the Aerojet General Corporation site as a result of the project. The conclusions of the FPASP EIR/EIS regarding noise generated at the Aerojet General Corporation site remain valid and no further analysis is required.

Regarding traffic noise; however, the analysis under Impact 3A.11-7 of the FPASP EIR/EIS determined that some of the noise-sensitive land uses developed on the Folsom Heights site could be exposed to traffic noise levels under future traffic conditions that exceed the City's land-use compatibility standard of 60 dB CNEL. As discussed in the project description, in general, the proposed application is largely consistent with the land uses proposed and approved for this portion of the FPASP. Mitigation Measure 3A.11-4 of the FPASP EIR/EIS requires individual project applicants to ensure that specific Sound Transmission Class ratings are achieved by all noise-sensitive buildings built in the FPASP. Mitigation Measure 3A.11-4 also requires project applicants to conduct a site-specific analysis to determine predicted roadway noise impacts attributable to the project in accordance with adopted City noise standards and implement measures to reduce these impacts, including but not limited to sound barriers. The FPASP EIR/EIS determined that this mitigation would reduce on-site traffic noise levels at proposed noise-sensitive land uses to levels conditionally acceptable with mitigation (i.e., 65 dB L_{dn}/CNEL). This would also be the case for the land uses under the project. Therefore, no new or substantially more severe impacts would occur from traffic noise generated on area roadways as a result of the project. The conclusions of the FPASP EIR/EIS regarding land use compatibility with traffic corridors remain valid. As with the approved FPASP, additional detail about the severity and locations of receptors affected by these impacts will be understood when site-specific noise analyses are conducted to fulfill the requirements of Mitigation Measure 3A.11-4.

Overall, no new or substantially severe significant effects would occur with implementation of the project; therefore, the conclusions of the FPASP EIR/EIS remain valid and no further analysis is required.

b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

Temporary, Short-Term Exposure of Sensitive Receptors to Potential Groundborne Noise and Vibration from Project Construction

Impacts from potential construction-related short-term groundborne noise and vibration on sensitive receptors were analyzed under Impact 3A.11-3 of the FPASP EIR/EIS. The FPASP EIR/EIS identified bulldozing and blasting activities as the source of maximum groundborne noise and vibration levels that would result from the construction of the FPASP. According to the Federal Transit Administration (FTA), levels associated with the use of a large bulldozer and blasting are 0.089 and 1.13 in/sec peak particle velocity (PPV) (87 and 109 vibration decibels [VdB]) at 25 feet, respectively, as shown in Table 3A.11-17 in the FPASP EIR/EIS. The FPASP EIR/EIS adopted Caltrans-recommended vibration exposure thresholds of 0.2 in/sec PPV for the protection of normal residential buildings and 0.08 in/sec PPV for the protection of old or historically significant structures (Caltrans 2004:17). In addition, with respect to prevention of human disturbance, bulldozing and blasting could exceed the FTA-recommended level of 78 VdB within 50 and 275 feet, respectively.

The analysis determined that, although bulldozing activities would not exceed the Caltrans-recommended thresholds for residential buildings, any blasting performed within 80 feet of a receptor could exceed the vibration threshold. Existing off-site residences along the eastern border of the FPASP area in El Dorado County, the closest sensitive receptors to the FPASP border (and Folsom Heights), could be located within 80 feet of FPASP blasting activities. Thus, the FPASP EIR/EIS concluded that short-term construction could result in the exposure of persons to or generation of excessive groundborne noise or vibration levels and determined a direct significant impact with no indirect impacts. Implementation of Mitigation Measure 3A.11-3 would reduce project-generated groundborne noise and vibration levels and the exposure thereof by setting standards for blasting and bulldozing activities. Even with the mitigation measure, the impact was found to be significant and unavoidable. No additional measures are available to reduce the impact beyond what was provided for in the EIR/EIS.

The sensitive receptors would not be exposed to noise and vibration levels substantially greater than those determined in the FPASP EIR/EIS. Therefore, no new or substantially more severe impacts would occur from construction-generated groundborne vibration or groundborne noise as a result of the project. The conclusions of the FPASP EIR/EIS remain valid and no further analysis is required.

c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

Refer to a) for discussion about whether the project would result in a more substantial permanent increase in ambient noise levels relative to the approved FPASP.

d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

Temporary, Short-Term Exposure of Sensitive Receptors to Increased Equipment Noise from Project Construction

The FPASP EIR/EIS provides a program-level analysis of short-term exposure of sensitive receptors to increased equipment noise from project construction under Impact 3A.11-1. Based on the modeling conducted for the FPASP EIR/EIS, construction noise levels could exceed 55 dB L_{eq} within 850 feet of an activity center (e.g., the acoustical center of areas where construction activities are focused). During nighttime hours, the modeling also estimated construction noise levels could exceed 50 and 45 dB L_{eq} within 1,300, and 2,000 feet of the activity centers, respectively. These noise level limits were based on noise standards and thresholds discussed in Section 3A.11.2 in the FPASP EIR/EIS. Because existing and future sensitive receptors located in both the City of Folsom and El Dorado County are located within these project-generated noise contours, the FPASP EIR/EIS determined that exposure of sensitive receptors to equipment noise levels would exceed applicable noise standards and result in a direct, significant impact.

As discussed in Section 4.3.1 a) regarding air pollutant emissions, construction activities under the project would be expected to be similar to those characterized in the FPASP EIR/EIS. Construction activities under the project would require similar types and numbers of equipment operating at similar levels of intensity. In addition, as discussed in b) above, the closest existing sensitive receptors to the Folsom Heights site are located adjacent to the eastern Folsom Heights boundary, within 80 feet of the proposed area of construction. Future sensitive receptors may also be present on-site as remaining portions of plan area undergo construction. Thus, construction activity under the project would expose sensitive receptors to equipment noise levels that would exceed applicable noise standards. However, noise-sensitive receptors would not be exposed to construction noise levels that are new or substantially more severe than would occur from under the approved FPASP. The conclusions of the FPASP EIR/EIS remain valid and no further analysis is required.

<u>Temporary, Short-Term Exposure of Sensitive Receptors to Increased Traffic Noise Levels from Project Construction</u>

Impact 3A. 11-2 of the FPASP EIR/EIS explained that construction of the FPASP would result in additional vehicle trips on the local roadway network from worker commute and the transport of equipment and materials. This analysis determined that additional construction-related vehicles trips would not result in noise level increases greater than 3 dB CNEL and; therefore, the FPASP EIR/EIS concluded that the short-term increase traffic noise levels due to construction-generated vehicle trips would be a less-than-significant impact.

The number of additional vehicle trips associated with construction activity under the project would not anticipated to be substantially more severe because the same types of land uses would be developed. Thus, this impact would be within the scope of the impact already evaluated in the FPASP EIR/EIS and would also be less than significant. The conclusions of the FPASP EIR/EIS remain valid and no further analysis is required.

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?

As explained in the FPASP EIR/EIS Mather Airport is located approximately seven miles southwest of the FPASP area, including the Folsom Heights site. The runways at this airport are oriented southwest to northeast. The Mather Airport Master Plan has been updated since the time the FPASP EIR/EIS was prepared. The update largely accounts for projected increases in future aircraft operations at Mather Airport. It is anticipated that most, if not all, regional air cargo demand will be handled by Mather Airport instead of Sacramento International Airport and that general aviation use at Mather Airport will also increase. These changes will result in more take offs and landings during both daytime and nighttime hours. The noise analysis in the EIR for the 2013 Mather Airport Master Plan indicates that the future projected 65 dB CNEL contour for Mather Airport extends across a portion of White Rock Road that is approximately 3,000 feet of Nimbus Road (County of Sacramento 2014: 9-64). The eastern end of this 65 dB CNEL contour is more than three miles west of the southwest corner of the Folsom Heights site. The noise contour maps presented in the EIR do not show the extent of the 60 dB CNEL contour, but because the extent of the maps do not even include the Folsom Heights site and because the future projected 65 dB CNEL contour would be more than three miles away, it is anticipated that land uses developed in the Folsom Heights site would not be subject to aircraft noise levels that exceed the 60 dB CNEL standard stated in City of Folsom General Plan Policy 30.4 (City of Folsom 1988:26-12). Also, as explained in the FPASP EIR/EIS, the nearest 60 dB CNEL noise contour developed in 2005 is approximately 5,000 feet to the west of the FPASP area. Please note, aviation easements exist on property within the FPASP

The CNEL is not the only metric for analyzing the potential noise effects of aircraft operations around airports. As stated in Policy 30.4 of the City of Folsom General Plan noise element, noise from single occurrences such as the passage of aircraft should also be evaluated in terms of single event noise levels (SENLs). The maximum noise level created by such an event may have the potential to result in activity interference even though the cumulative noise exposure in terms of CNEL is within acceptable limits. The potential for sleep disturbance is usually of primary concern, and should be evaluated on a case-by-case basis (City of Folsom 1988:26-12).

In this fashion, the EIR for the 2013 Mather Airport Master Plan also provides detailed discussion about aircraft-generated SENLs and their effect on sleep at residential land uses. The analysis uses a methodology developed by the American National Standards Institute and the Acoustical Society of America to predict sleep disturbance, which is measured by the resultant percent of the population potentially awakened at least once during the night.

The analysis mapped eastern Sacramento County, including portions of Folsom north of U.S. 50, and western El Dorado County to show the level of sleep disturbance at existing residential areas under 2012 conditions, 2018 conditions, and 2035 conditions. This mapping shows percent ranges including 0 to 1 percent, 1.1 to 4.0 percent, 4.1 to 7.0 percent, 7.1 to 10.0 percent, and additional, higher ranges. While the analysis did not map the Folsom Heights area, some understanding about the level of sleep disturbance at this location can be interpolated based on the mapped results for nearby areas. This analysis assumes that the level of sleep disturbance in the portions of Folsom south of U.S. 50, including the Folsom Heights plan area, would be comparable to areas of Folsom north of U.S. 50 because these two areas are approximately the same distance from the flight tracks that approach and depart the airport. The mapping for 2012 show the 1.1-to-4.0 and, 4.1-to-7.0 percent ranges in Folsom. Increases in aircraft activity at Mather Airport would expose some portions of Folsom to the 7.1-to-10.0 percent range in 2018, and even more areas of Folsom to the 7.1-to-10.0 percent range in 2035 (County of Sacramento 2014: 9-75, 9-76, 9-78).

One key consideration about this analysis is that the estimates of the percent of population potentially awakened assume that the residential dwelling units have their windows open. Please note that closed windows typically result in a 25-30 dB reduction in interior noise levels.

The awakenings analysis in the EIR for the 2013 Mather Airport Master Plan does not reach an impact conclusion (County of Sacramento 2014: 9-72). It states the following:

This “information only” discussion of single event noise provides data on the potential for awakenings and/or classroom disruption, applying the latest technical guidance for quantifying these issues. This approach allows the decision makers and public evaluating the [2013 Mather Airport Master Plan] to draw their own conclusions regarding the significance of the analysis in the context of the larger project. City of Folsom staff also regard this as an “information only” analysis in this environmental review because even though aircraft SENLs have been the subject of various CEQA court cases no government agency has identified a consistently used threshold for determining what level of sleep disturbance is significant. The existence of Mather Airport and the fact it is expected to host increasing levels of aircraft activity was known at the time the FPASP EIR/EIS was written. The level of expected growth in operations at Mather Airport is not considered a new circumstance involving new or substantially more severe impacts than existed at the time FPASP EIR/EIS was written. Therefore, the conclusions of the FPASP EIR/EIS remain valid and no further analysis is required.

In addition, Bollard Acoustical Consultants (BAC), Inc. prepared an analysis of aircraft single-event noise at the Hillsborough project area (located 2 miles west of the project site and closer to Mather Airport) property (October 2015). The analysis was conducted to evaluate the potential for sleep disturbance associated with single-event aircraft operations at Mather Airport. This study concluded that the probability of awakening associated with nighttime aircraft operations would be very low at the Hillsborough property and stated that the presence of existing and projected increases in future nighttime aircraft operations at Mather Airport would be fully disclosed to prospective residents of this development, Also, interior noise levels would be well below the City of Folsom 45 dB L_{dn} interior noise level standard applicable to new residential developments. The study recognized that individual sensitivities to noise can vary, and that aircraft single-event noise exposure would vary with changing aircraft types and atmospheric conditions, it was nonetheless BAC's professional opinion that adequate mitigation measures are in place and that the Hillsborough project site would not be adversely impacted by aircraft noise relative to the sleep disturbance issue. The Folsom Heights project site is located even further from Mather Airport and; thus, would be expected to have the same conclusion or even less of an impact.

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?

As stated in the FPASP EIR/EIS the FPASP area is not located within two miles of a public, public-use, or private airport. The nearest airport, Sacramento Mather Airport, is located approximately seven miles southwest of the project site. No new private airstrips have been developed within the FPASP area since that time. Therefore, there are no new circumstances or new information requiring new analysis or verification. Therefore, the conclusions of the FPASP EIR/EIS remain valid and no further analysis is required.

Mitigation Measures

The following mitigation measures were referenced in the FPASP EIR/EIS analysis and would continue to remain applicable if the project were approved.

- Mitigation Measure 3A.1-1: Construct and Maintain a Landscape Corridor Adjacent to U.S. 50.
- Mitigation Measure 3A.1-4: Screen Construction Staging Areas.
- Mitigation Measure 3A.1-5: Establish and Require Conformance to Lighting Standards and Prepare and Implement a Lighting Plan.

The EIR/EIS concluded that the impacts of roadway noise would remain significant and unavoidable even with implementation of recommended mitigation. No additional mitigation measures are available to reduce or eliminate the impacts.

CONCLUSION

No new circumstances or project changes have occurred nor has any substantially important new information been found requiring new analysis or verification. Therefore, the conclusions of the FPASP EIR/EIS remain valid and approval project would not result in new or substantially more severe significant noise impacts. No further analysis is required.

4.13 POPULATION AND HOUSING

	Environmental Issue Area	Where Impact Was Analyzed in the EIR/EIS.	Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	Any New Information Requiring New Analysis or Verification?	Do Prior Environmental Documents Mitigations Address/Resolve Impacts?
13.	**Population and Housing. Would the project:**				
a.	Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	Setting pp. 3A.13-1 to 3A.13-6 Impacts 3A.13-1, 3A.13-2	No	No	NA
b.	Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	Impact 3A.13-3	No	No	NA
c.	Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	Impact 3A.13-3	No	No	NA

4.13.1 Discussion

No substantial change in the regulatory settings related to population and housing, described in EIR/EIS Section 3A.13 under Population, Employment and Housing – Land, has occurred since certification of the EIR in 2011. As described in the project description, there would be no change to the number of proposed dwelling units, but there would be an estimated increase of 125 additional residents in the approved FPASP for this area.

a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

As described in the EIR/EIS under Impacts 3A.13-1 and 3A.13-2, the FPASP would directly induce population growth through construction of new homes and businesses over the buildout period. Because population growth is not considered in and of itself to be a significant environmental impact, this was concluded to be a less-than-significant impact. While there would be a greater population within the Folsom Heights project area than anticipated in the certified EIR/EIS, this additional population would not be substantial by itself and would not lead to new indirect impacts associated with the expansion of roads or other public services. This would be a less-than-significant impact.

Other potentially new significant or substantially more severe impacts related to the development of homes, jobs, and infrastructure to accommodate additional population growth are evaluated in all topic areas throughout this environmental checklist.

b) Displace substantial numbers of existing homes, necessitating the construction of replacement housing elsewhere?

As described in Impact 3A.13-3, the FPASP would result in the removal of a single housing unit. This was determined to be a less-than-significant impact. No changes to this condition would occur with implementation of the project, and this housing unit is not within the Folsom Heights project area. No new significant impacts or substantially more severe impacts would occur. Therefore, the findings of the certified EIR/EIS remain valid and no further analysis is required.

c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

This topic is discussed under b).

Mitigation Measures

No mitigation measures were needed for the certified EIR/EIS regarding population and housing. No additional mitigation measures are required for the project for this issue.

CONCLUSION

No new circumstances or project changes have occurred nor has any new information been found requiring new analysis or verification. Therefore, the conclusions of the EIR/EIS remain valid and approval of the project would not result in new or substantially more severe significant impacts to population and housing.

4.14 PUBLIC SERVICES

Environmental Issue Area	Where Impact Was Analyzed in the EIR/EIS.	Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	Any New Information Requiring New Analysis or Verification?	Do Prior Environmental Documents Mitigations Address/Resolve Impacts?
14. Public Services.				
a. 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, to maintain acceptable service ratios, response times or other performance objectives for any public services:				
i. Fire protection?	Setting pp. 3A.14-1 to 3A.14-2 Impacts 3A.14-1, 3A.14-2, 3A.14-3	No	No	Yes
ii. Police protection?	Setting pp. 3A.14-2 to 3A.14-3 Impact 3A.14-4	No	No	NA
iii. Schools?	Setting pp. 3A.14-3 to 3A.14-5 Impacts 3A.14-5, 3A.14-6	No	No	Yes
iv. Parks?	See below in Section 4.15, Recreation			

4.14.1 Discussion

No substantial change in the environmental and regulatory settings related to public services, described in EIR/EIS Sections 3A.14 under Public Services – Land, has occurred since certification of the EIR/EIS in 2011.

a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the 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:

Fire protection?

Impacts 3A.14-1, 3A.14-2, and 3A.14-3 address how the construction of the project would affect emergency response services and create increased demand for fire protection and for fire flow. The EIR/EIS found that there would be a significant impact on emergency response. With implementation of Mitigation Measure 3A.14-1, this impact would be reduced to less than significant because the applicant would be required to prepare and implement traffic control plans during construction activities to ensure that emergency access is not impeded. Further, the potentially significant impacts to fire protection and fire flow would be mitigated to a less-than-significant level through implementation of Mitigation Measure 3A.14-2, which would require the applicant to incorporate fire code requirements into all plans and submit these plans for approval to the fire department. The project would not substantially change development densities from that approved in the FPASP. Further, the project would continue to comply with mitigation requirements outlined in the adopted mitigation for the FPASP. With implementation of this mitigation, no new significant impacts or substantially more severe impacts would occur. Therefore, the findings of the certified EIR/EIS remain valid and no further analysis is required.

Police protection?

As described in Impact 3A.14-4, applicants would be required to fund and construct sufficient police facilities and personnel to serve the planned development. Per the City of Folsom Municipal Code Chapter 3, Title 3.80, "Capital Improvement New Construction Fee," new development is responsible for the full cost of additional facilities and equipment necessary as a result of that development through payment of the City's capital improvement new construction fees. The impact was determined to be less than significant and no mitigation was required. The project would not substantially change development densities from that approved in the FPASP. Further, the project would subject to the same funding requirements for police services. No new significant impacts or substantially more severe impacts would occur. Therefore, the findings of the certified EIR/EIS remain valid and no further analysis is required.

Schools?

As discussed in Impacts 3A.14-5 and 3A.14-6, the applicants would be required to pay school impact fees and would fund all costs associated with school facilities. Because of this, the EIR/EIS concluded that the FPASP's impact to schools would be less than significant and no mitigation is required. The project would not substantially change development densities from that approved in the FPASP and the same number of housing units would be developed. Further, the project would subject to the same school impact fees and funding requirements for school services. No new significant impacts or substantially more severe impacts would occur. Therefore, the findings of the certified EIR/EIS remain valid and no further analysis is required.

Mitigation Measures

The following mitigation measures were adopted with the FPASP and would continue to remain applicable if the project was approved.

- Mitigation Measure 3A.14-1: Prepare and implement a construction traffic control plan.
- Mitigation Measure 3A.14-2: Incorporate California Fire Code; City of Folsom Fire Code Requirements; and EDHFD Requirements, if necessary, into project design and submit project design to the City of Folsom Fire Department for review and approval.
- Mitigation Measure 3A.14-3: Incorporate fire flow requirements into project designs.

CONCLUSION

No new circumstances or project changes have occurred nor has any new information been found requiring new analysis or verification. Therefore, the conclusions of the EIR/EIS remain valid and approval of the project would not result in new or substantially more severe significant impacts to public services.

4.15 RECREATION

Environmental Issue Area		Where Impact Was Analyzed in the EIR/EIS.	Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	Any New Information Requiring New Analysis or Verification?	Do Prior Environmental Documents Mitigations Address/Resolve Impacts?
15.	**Recreation.**				
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?	Setting pp. 3A.12-1 to 3A.12-11 Impacts 3A.12-1, 3A.12-2	No	No	NA
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?	Setting pp. 3A.12-1 to 3A.12-11 Impact 3A.12-1	No	No	NA

4.15.1 Discussion

No substantial change in the regulatory settings related to recreation, described in EIR/EIS Section 3A.12 under Parks and Recreation – Land, has occurred since certification of the EIR/EIS in 2011.

a) 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?

The EIR/EIS addresses impacts associated with parks and recreation under Impacts 3A.12-1 and 3A.12-2. Under the project, the population of the Folsom Heights site would be 125 more persons than what was identified for this area in the approved FPASP. However, the project includes 4.1 additional acres of open space than what was approved in the FPASP. Using the City's standard of 5 acres of parkland for every 1,000 residents, the project must provide at least five acres of parkland on-site. The proposed site plan would provide 47.2 acres of open space, which exceeds the City's parkland requirements. The EIR/EIS concluded that the impact to existing parks and facilities would be less than significant and no mitigation was required. The proposed project would not change this conclusion and would improve the parkland amenities at the site. Because there are no new significant impacts or substantially more severe impacts, the findings of the certified EIR/EIS remain valid and no further analysis is required.

b) Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?

As described in Impact 3A.12-1 of the Draft EIR/EIS, the potential for new or expanded recreational facilities to have an adverse physical effect on the environment was analyzed in all topic areas throughout the EIR/EIS as part of the project. Those impacts have been described throughout this environmental checklist.

Mitigation Measures

No mitigation measures were identified in for the certified EIR/EIS regarding recreation, nor are any additional mitigation measures required the project.

CONCLUSION

No new circumstances or project changes have occurred nor has any new information been identified requiring new analysis or verification. Therefore, the conclusions of the EIR/EIS remain valid and approval of project would not result in new or substantially more severe significant impacts to recreation.

4.16 TRANSPORTATION/TRAFFIC

Environmental Issue Area	Where Impact Was Analyzed in the EIR/EIS.	Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	Any New Information Requiring New Analysis or Verification?	Do Prior Environmental Documents Mitigations Address/Resolve Impacts?
16. Transportation/Traffic. Would the project:				
a. Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	Setting pp. 3A.15-8 to 3A.15-24 Impacts 3A.15-1, 3A.15-1a, 3A.15-1b, 3A.15-1c, 3A.15-1d, 3A.15-1e, 3A.15-1f, 3A.15-1g, 3A.15-1h, 3A.15-1i, 3A.15-1j, 3A.15-1k, 3A.15-1l, 3A.15-1m, 3A.15-1n, 3A.15-1o, 3A.15-1p, 3A.15-1q, 3A.15-1r, 3A.15-1s, 3A.15-1t, 3A.15-1u, 3A.15-1v, 3A.15-1w, 3A.15-1x, 3A.15-1y, 3A.15-1z, 3A.15-1aa, 3A.15-1bb, 3A.15-1cc, 3A.15-1dd, 3A.15-1ee, 3A.15-1ff, 3A.15-1gg, 3A.15-1hh, 3A.15-1ii, 3A.15-2, 3A.15-3, 3A.15-4, 3A.15-4a, 3A.15-4b, 3A.15-4c, 3A.15-4d, 3A.15-4e, 3A.15-4f, 3A.15-4g, 3A.15-4h, 3A.15-4i, 3A.15-4k, 3A.15-4l, 3A.15-4m, 3A.15-4n, 3A.15-4o, 3A.15-4p, 3A.15-4q, 3A.15-4r, 3A.15-4s, 3A.15-4t, 3A.15-4u, 3A.15-4v, 3A.15-4w, 3A.15-4x, 3A.15-4y,	No	No	Yes
b. Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	Setting pp. 3A.15-8 to 3A.15-24 Impacts 3A.15-1, 3A.15-1a, 3A.15-1b, 3A.15-1c, 3A.15-1d, 3A.15-1e, 3A.15-1f, 3A.15-1g, 3A.15-1h, 3A.15-1i, 3A.15-1j, 3A.15-1k, 3A.15-1l, 3A.15-1m, 3A.15-1n, 3A.15-1o, 3A.15-1p, 3A.15-1q, 3A.15-1r, 3A.15-1s, 3A.15-1t, 3A.15-1u, 3A.15-1v, 3A.15-1w, 3A.15-1x, 3A.15-1y, 3A.15-1z, 3A.15-1aa, 3A.15-1bb, 3A.15-1cc, 3A.15-1dd, 3A.15-1ee, 3A.15-1ff, 3A.15-1gg, 3A.15-1hh, 3A.15-1ii, 3A.15-2, 3A.15-3, 3A.15-4, 3A.15-4a, 3A.15-4b, 3A.15-4c, 3A.15-4d, 3A.15-4e, 3A.15-4f, 3A.15-4g, 3A.15-4h, 3A.15-4i, 3A.15-4k, 3A.15-4l, 3A.15-4m, 3A.15-4n, 3A.15-4o, 3A.15-4p, 3A.15-4q, 3A.15-4r, 3A.15-4s, 3A.15-4t, 3A.15-4u, 3A.15-4v, 3A.15-4w, 3A.15-4x, 3A.15-4y,	No	No	Yes

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?	Not addressed, no impact	No	No	NA
d.	Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	Not addressed, no impact	No	No	NA
e.	Result in inadequate emergency access?	Discussed under 4.14, Public Services	No	No	Yes
f.	Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	Setting pp. 3A.15-8 to 3A.15-24 No Impact	No	No	NA

4.16.1 Discussion

The following is an update to Section 3A.15 Traffic and Transportation and provides a comparison of the project to the adopted FPASP. The traffic analysis for the certified EIR/EIS was conducted by DKS Associates in 2009. Since the FPASP was approved, no infrastructure or development work has taken place on the site. The FPASP traffic analysis provided a gross assessment of traffic impacts in the FPASP area including the Folsom Heights project area. The impacts were determined based on the entire plan's effects on the roadway network. While certain development projects were known at the time the FPASP was prepared and land use data from these projects were used in the assumptions and analysis, the FPASP EIR/EIS analysis did not carve-out or assign specific impacts to each of the developments within the FPASP. The analysis recognized that subsequent individual traffic assessments may be prepared, if necessary, as developments were proposed.

Consistent with the assumptions of the FPASP and at the City's direction, MRO Engineers, Inc. prepared an updated traffic analysis, *Traffic Analysis for Folsom Heights Project – Folsom, California* (MRO Engineers, Inc. 2016), to determine if project-related traffic impacts of the proposed Folsom Heights project were adequately addressed in the Final EIR/EIS. This determination was based primarily upon a comparison of the relative trip generation values for the two land use plans. If the proposed land use plan was estimated to generate an equal (or lower) number of trips in the key analysis periods compared to the project approved under the FPASP, then the traffic impacts are expected to similarly be equal to or lower than the impacts documented in the Final EIR/EIS for the FPASP. In addition, the traffic analysis considered whether projected traffic conditions have changed in the vicinity of the Folsom Heights project since the Final EIR/EIS was certified.

While an evaluation of existing plus project conditions is a requirement of CEQA, it should be noted that for longer-term (i.e., 20 years) buildout projects such as the FPASP and Folsom Heights project, the impacts identified under the existing plus project condition would not actually occur. That is because it would be physically impossible for the entire project (i.e., all development proposed under the Folsom Heights site plan) to develop over a short time period such that the total project-related vehicle trips would be applied to the existing roadway network. Rather, the project would be developed over a 20-year time period with different and overlapping stages of construction and development. With each new development phase an increment of the projected trips would be added to the roadway network. Similarly, agencies such as the City, County, and Caltrans would continue to implement their planned transportation improvements over the same time period responding to the changed traffic volumes and patterns, thereby improving the roadway network to better handle additional traffic. Therefore, while this scenario would not be physically realized, the planning exercise of evaluating the impacts of the project on existing conditions is conducted to provide agency decision makers a picture of what traffic conditions would look like if the project were wholly applied to the existing roadway network and what improvements would be needed to meet those demands. However, because of the long-term nature and size of the project (and the FPASP), it is not realistic to expect that the physical condition where the entire project would be applied to the existing roadway network is feasible.

Transportation agencies such as the City, typically employ a longer-term view of transportation planning because of the substantial investment required to implement traffic infrastructure improvements. Agencies typically plan improvements in logical increments to prevent the installation and subsequent removal and reconstruction of traffic facilities as growth and development occurs in an area. Therefore, agencies typically look to cumulative growth and development projections to understand the long-term traffic infrastructure needs. Where demands for new infrastructure occur, the agencies would plan incremental improvements that would ultimately lead to the long-term buildout condition for the roadway or intersection. Then all projects that would contribute to the demands for that infrastructure would be required to contribute to its implementation.

Planning for facilities in this manner is beneficial because agencies recognize that an assessment of project impacts is a representation of conditions (either existing or projected) at the moment in time the analysis is prepared and does not necessarily account for the full build out condition. Therefore, the cumulative plus project scenario represents a project's true contribution to impacts on the roadway network especially where that project is a longer-term land use plan. The existing plus project scenario identifies potential impacts that could occur as the project is developed and the cumulative network improvements are being implemented over time. Therefore, the impacts identified under the existing plus project scenario are best used by agencies to determine the timing of when specific cumulative improvements need to be made or how to incrementally implement improvements to the roadway network as it builds out to the cumulative projection.

For longer-term projects, agencies plan for the cumulative traffic network because when large projects such as FPASP are proposed, there is very little predictability in the timing and location of where specific development projects would occur. The economic conditions and market demand for certain types of development (e.g., retail vs. commercial vs. residential) ultimately determine which projects are developed and when. Therefore, by taking a longer-term view (i.e., cumulative projection) of infrastructure needs, the agency can make individual adjustments to the roadway network where needed to respond to individual development demands. As it relates to the project, the cumulative plus project scenario provides the City the best assessment, most realistic of how the project would affect the transportation network in comparison to the projections included in the FPASP EIR/EIS. If the project's cumulative plus project impacts are substantially different from those projected in the FPASP EIR/EIS, then the City would understand that the changes proposed under the project could adversely affect the planned roadway network. However, if the results of the cumulative plus project scenario show that operation of the cumulative roadway network is the same or better that previous projections under the FPASP EIR/EIS, then no significant changes would occur.

Impacts to Intersection or Roadway Level of Service

MRO Engineers, Inc., evaluated existing and existing plus project traffic conditions on area intersections for the project (i.e., full development of the FPASP was not included). As shown in Table 4 of the transportation analysis (MRO Engineers, Inc. 2016), the proposed Folsom Heights project would generate approximately 5,100 fewer daily trips than the project as analyzed under the FPASP EIR/EIS. In the AM peak hour, the project would generate approximately 50 fewer trips, and in the PM peak hour it would generate approximately 470 fewer trips than assumed under the approved FPASP. This would be a less-than-significant impact and no additional mitigation is needed. Impacts 3A.15-1q, 3A.15-1r, 3A.15-1t, 3A.15-1u, 3A.15-1v, 3A.15-1w, 3A.15-1x, 3A.15-1y, 3A.15-1z, 3A.15-1aa, 3A.15-1bb, 3A.15-1cc, 3A.15-1dd, 3A.15-1ee, 3A.15-1ff, 3A.15-1gg, 3A.15-1hh, and 3A.15-1ii in the FPASP EIR/EIS analyzed the potential impacts caused by the adoption of the FPASP. While mitigation measures were included (listed below) to address these impacts, some remained significant and unavoidable. As described in the revised traffic study, the project does not result in any new significant or substantially more severe impacts to intersection or freeway facilities. The conclusions of the FPASP EIR/EIS remain valid.

Impacts to the Transit System

The project would not disrupt existing or planned transit services or facilities, or create inconsistencies with any adopted plans, guidelines, policies or standards related to transit. Therefore, this impact is considered less-than-significant and no mitigation is needed.

Impacts to Bicycle and Pedestrian Facilities

The project would construct curb, gutter, and sidewalks on all project roadways to facilitate any potential pedestrian demand. The curb, gutter, and sidewalks would be designed and constructed to meet City standards. The project would not disrupt existing or planned bicycle/pedestrian facilities or create inconsistencies with any adopted plans, guidelines, policies or standards related to bicycle or pedestrian systems. Therefore, this impact is considered less than significant and no mitigation is required.

Impacts because of Construction-Related Activities

Similar to that identified in the FPASP EIR/EIS in Impact 3A.14-1, construction of the project may include disruptions to the transportation network near the site, including the possibility of temporary lane closures, street closures, sidewalk closures, and bikeway closures; however, access to all nearby parcels would be maintained. Pedestrian and bicycle access in the vicinity of the project site may be disrupted. Heavy vehicles would access the site and may need to be staged for construction. These activities could result in degraded roadway operating conditions and degraded emergency access. Therefore, the impacts are considered significant for the FPASP and project. Mitigation Measure 3A.14-1 would require the applicant to implement a construction management plan that would ensure that adequate emergency response access would be maintained throughout development of the project. The project would be subject to this mitigation. With implementation of this mitigation, impacts would be reduced to a less-than-significant level. The conclusions of the EIR/EIS remain valid and no further analysis is required.

Impacts to Intersections in Cumulative Conditions

The traffic analysis also compared cumulative conditions level of service (LOS) results for selected key intersections. The Final EIR/EIS addressed traffic operations in the year 2030 at 26 intersections within the pre-existing Folsom city limits and an additional 30 intersections in the annexation area (including four existing intersections along White Rock Road). More recently, a detailed traffic analysis was completed for the Russell Ranch project, which is located adjacent to the Folsom Heights project area. The traffic study prepared for the Russell Ranch project reflects current traffic conditions in the Folsom Heights project vicinity because of the proximity of the Russell Ranch project to the Folsom Heights project area. That analysis, which was completed by Fehr & Peers, addressed traffic operations at 32 intersections in the year 2035 (MRO Engineers, Inc. 2016).

Table 4.16-1 illustrates the comparison of Cumulative Plus Project LOS results for those intersections for the AM and PM peak hours. The Cumulative Plus Project scenario includes buildout of the entire FPASP land use plan (including the approved Folsom Heights land use plan), as well as expected growth throughout the Sacramento region (MRO Engineers, Inc. 2016).

More variation is seen in the PM peak hour, although the differences are not substantial. At two locations (Empire Ranch Road/Broadstone Parkway and Empire Ranch Road/U.S. Highway 50 Westbound Ramps), the year 2035 LOS is projected to be better than the year 2030 values. Two additional locations (Empire Ranch Road/Iron Point Road and Empire Ranch Road/White Rock Road) are projected to have slightly worse LOS values (MRO Engineers, Inc. 2016). The FPASP EIR/EIS identified this intersection as having a significant impact and requires Mitigation Measure 3A.15-4f to address the projected impact. Therefore, this impact is addressed in the FPASP EIR/EIS and the proposed Folsom Heights project would generate few trips that could contribute to delay at this intersection. The conclusions of the FPASP EIR/EIS remain valid and no further analysis is required.

Table 4.16-1 LOS Comparison for Selected Intersections

Intersection	Cumulative Plus Project Conditions							
	FPASP (Year 2030)[1]				Russell Ranch (Year 2035)[2]			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	Delay[3]	LOS	Delay	LOS	Delay	LOS	Delay	LOS
Empire Ranch Rd./ Broadstone Pkwy.	19.9	B	24.4	C	16	B	11	B
Empire Ranch Rd./Iron Point Rd.	**82.2**	**F**	**79.9**	**E**	**122**	**F**	**89**	**F**
Empire Ranch Rd./U.S. Hwy. 50 WB Ramps	14.7	B	15.8	B	12	B	9	A
Empire Ranch Rd./U.S. Hwy. 50 EB Ramps	15.8	B	19.2	B	7	A	11	B
Empire Ranch Rd./White Rock Rd.	28.9	C	17.7	B	31	C	35	C

Notes:

[1] Reference: AECOM and RMC Water and Environment, *Final EIR/EIS – Folsom South of U.S. Highway 50 Specific Plan Project*, May 2011.

[2] Reference: Fehr & Peers, *Russell Ranch Final Transportation Impact Study*, December 2014.

[3] Average control delay in seconds per vehicle.

Source: MRO Engineers, Inc. 2016

Mitigation Measures

The following mitigation measures were adopted with the FPASP and would continue to remain applicable if the project were approved.

- Mitigation Measure 3A.15-1a: The applicant shall pay a fair share to fund the construction of improvements to the Folsom Boulevard/Blue Ravine Road intersection (Intersection 1).
- Mitigation Measure 3A.15-1b: The applicant shall pay a fair share to fund the construction of improvements at the Sibley Street/Blue Ravine Road intersection (Intersection 2).
- Mitigation Measure 3A.15-1c: The applicant shall fund and construct improvements to the Scott Road (West)/White Rock Road intersection (Intersection 28).
- Mitigation Measure 3A.15-1e: Fund and construct improvements to the Hillside Drive/Easton Valley Parkway intersection (Intersection 41).
- Mitigation Measure 3A.15-1f: Fund and construct improvements to the Oak Avenue Parkway/Middle Road intersection (Intersection 44).
- Mitigation Measure 3A.15-1h: Participate in fair share funding of improvements to reduce impacts to the Hazel Avenue/Folsom Boulevard intersection (Sacramento County Intersection 2).
- Mitigation Measure 3A.15-1i: Participate in fair share funding of improvements to reduce impacts on the Grant Line Road/White Rock Road intersection and to White Rock Road widening between the Rancho Cordova City limit to Prairie City Road (Sacramento County Intersection 3).
- Mitigation Measure 3A.15-1j: Participate in fair share funding of improvements to reduce impacts on Hazel Avenue between Madison Avenue and Curragh Downs Drive (Roadway Segment 10).
- Mitigation Measure 3A.15-1l: Participate in fair share funding of improvements to reduce impacts on the White Rock Road/Windfield Way intersection (El Dorado County Intersection 3).

- Mitigation Measure 3A.15-1o: Participate in fair share funding of improvements to reduce impacts on Eastbound U.S. 50 as an alternative to improvements at the Folsom Boulevard/U.S. 50 eastbound ramps intersection (Caltrans Intersection 4).
- Mitigation Measure 3A.15-1p: Participate in fair share funding of improvements to reduce impacts on the Grant Line Road/ State Route 16 intersection (Caltrans Intersection 12).
- Mitigation Measure 3A.15-1q: Participate in fair share funding of improvements to reduce impacts on eastbound U.S. 50 between Zinfandel Drive and Sunrise Boulevard (Freeway Segment 1).
- Mitigation Measure 3A.15-1r: Participate in fair share funding of improvements to reduce impacts on eastbound U.S. 50 between Hazel Avenue and Folsom Boulevard (Freeway Segment 3).
- Mitigation Measure 3A.15-1s: Participate in fair share funding of improvements to reduce impacts on eastbound U.S. 50 between Folsom Boulevard and Prairie City Road (Freeway Segment 4).
- Mitigation Measure 3A.15-1u: Participate in fair share funding of improvements to reduce impacts on westbound U.S. 50 between Prairie City Road and Folsom Boulevard (Freeway Segment 16).
- Mitigation Measure 3A.15-1v: Participate in fair share funding of improvements to reduce impacts on westbound U.S. 50 between Hazel Avenue and Sunrise Boulevard (Freeway Segment 18).
- Mitigation Measure 3A.15-1w: Participate in fair share funding of improvements to reduce impacts on U.S. 50 eastbound / Folsom Boulevard ramp merge (Freeway Merge 4).
- Mitigation Measure 3A.15-1x: Participate in fair share funding of improvements to reduce impacts on U.S. 50 eastbound / Prairie City Road diverge (Freeway Diverge 5).
- Mitigation Measure 3A.15-1y: Participate in fair share funding of improvements to reduce impacts on U.S. 50 eastbound / Prairie City Road direct merge (Freeway Merge 6).
- Mitigation Measure 3A.15-1z: Participate in fair share funding of improvements to reduce impacts on U.S. 50 eastbound / Prairie City Road flyover on-ramp to Oak Avenue Parkway off-ramp weave (Freeway Weave 8).
- Mitigation Measure 3A.15-1aa: Participate in fair share funding of improvements to reduce impacts on U.S. 50 eastbound / Oak Avenue Parkway loop merge (Freeway Merge 9).
- Mitigation Measure 3A.15-1dd: Participate in fair share funding of improvements to reduce impacts on U.S. 50 Westbound / Empire Ranch Road loop ramp merge (Freeway Merge 23).
- Mitigation Measure 3A.15-1ee: Participate in fair share funding of improvements to reduce impacts on U.S. 50 westbound / Oak Avenue Parkway loop ramp merge (Freeway Merge 29).
- Mitigation Measure 3A.15-1ff: Participate in fair share funding of improvements to reduce impacts on U.S. 50 westbound / Prairie City Road loop ramp merge (Freeway Merge 32).
- Mitigation Measure 3A.15-1gg: Participate in fair share funding of improvements to reduce impacts on U.S. 50 westbound / Prairie City Road direct ramp merge (Freeway Merge 33).
- Mitigation Measure 3A.15-1hh: Participate in fair share funding of improvements to reduce impacts on U.S. 50 eastbound / Folsom Boulevard diverge (Freeway Diverge 34).
- Mitigation Measure 3A.15-1ii: Participate in fair share funding of improvements to reduce impacts on U.S. 50 westbound / Hazel Avenue direct ramp merge (Freeway Merge 38).

- Mitigation Measure 3A.15-2a: Develop commercial support services and mixed-use development concurrent with housing development, and develop and provide options for alternative transportation modes.
- Mitigation Measure 3A.15-2b: Participate in the city's Transportation System Management Fee Program.
- Mitigation Measure 3A.15-2c: Participate with the U.S. 50 corridor transportation management association.
- Mitigation Measure 3A.15-3: Pay full cost of identified improvements that are not funded by the city's fee program.
- Mitigation Measure 3A.15-4a: The applicant shall pay a fair share to fund the construction of improvements to the Sibley Street/Blue Ravine Road intersection (Folsom Intersection 2).
- Mitigation Measure 3A.15-4b: The applicant shall pay a fair share to fund the construction of improvements to the Oak Avenue Parkway/East Bidwell Street intersection (Folsom Intersection 6).
- Mitigation Measure 3A.15-7c: The applicant shall pay a fair share to fund the construction of improvements to the East Bidwell Street/Nesmith Court intersection (Folsom Intersection 7).
- Mitigation Measure 3A.15-4d: The applicant shall pay a fair share to fund the construction of improvements to the East Bidwell Street/Iron Point Road intersection (Folsom Intersection 21).
- Mitigation Measure 3A.15-4e: The applicant shall pay a fair share to fund the construction of improvements to the Serpa Way/ Iron Point Road intersection (Folsom Intersection 23).
- Mitigation Measure 3A.15-4f: The applicant shall pay a fair share to fund the construction of improvements to the Empire Ranch Road / Iron Point Road intersection (Folsom Intersection 24).
- Mitigation Measure 3A.15-4g: The Applicant shall fund and construct improvements to the oak avenue Parkway / Easton Valley Parkway intersection (Folsom Intersection 33).
- Mitigation Measure 3A.15-4i: Participate in fair share funding of improvements to reduce impacts on the Grant Line Road/White Rock Road intersection (Sacramento County Intersection 3).
- Mitigation Measure 3A.15-4j: Participate in fair share funding of improvements to reduce impacts on Grant Line Road between White Rock Road and Kiefer Boulevard (Sacramento County Roadway Segments 5-7).
- Mitigation Measure 3A.15-4k: Participate in fair share funding of improvements to reduce impacts on Grant Line Road between Kiefer Boulevard and Jackson Highway (Sacramento County Roadway Segment 8).
- Mitigation Measure 3A.15-4l: Participate in fair share funding of improvements to reduce impacts on Hazel Avenue between Curragh Downs Drive and U.S. 50 westbound ramps (Sacramento County Roadway Segment s 12-13).
- Mitigation Measure 3A.15-4m: Participate in fair share funding of improvements to reduce impacts on White Rock Road between Grant Line Road and Prairie City Road (Sacramento County Roadway Segment 22).
- Mitigation Measure 3A.15-4n: Participate in fair share funding of improvements to reduce impacts on White Rock Road between Empire Ranch Road and Carson Crossing Road (Sacramento County Roadway Segment 28).
- Mitigation Measure 3A.15-4o: Participate in fair share funding of improvements to reduce impacts on the White Rock Road / Carson Crossing Road intersection (El Dorado County 1).

- Mitigation Measure 3A.15-4p: Participate in fair share funding of improvements to reduce impacts on the Hazel Avenue/U.S. 50 Westbound Ramps intersection (Caltrans Intersection 1).
- Mitigation Measure 3A.15-4q: Participate in fair share funding of improvements to reduce impacts on eastbound U.S. 50 between Zinfandel Drive and Sunrise Boulevard (Freeway Segment 1).
- Mitigation Measure 3A.15-4r: Participate in fair share funding of improvements to reduce impacts on eastbound U.S. 50 between Rancho Cordova Parkway and Hazel Avenue (Freeway Segment 3).
- Mitigation Measure 3A.15-4s: Participate in fair share funding of improvements to reduce impacts on eastbound U.S. 50 between Folsom Boulevard and Prairie City Road (Freeway Segment 5).
- Mitigation Measure 3A.15-4t: Participate in fair share funding of improvements to reduce impacts on eastbound U.S. 50 between Prairie City Road and Oak Avenue Parkway (Freeway Segment 6).
- Mitigation Measure 3A.15-4u: Participate in fair share funding of improvements to reduce impacts on the U.S. 50 eastbound / Prairie City Road slip ramp merge (Freeway Merge 6).
- Mitigation Measure 3A.15-4v: Participate in fair share funding of improvements to reduce impacts on the U.S. 50 eastbound / Prairie City Road flyover on ramp to Oak Avenue Parkway off ramp weave (Freeway Weave 7).
- Mitigation Measure 3A.15-4w: Participate in fair share funding of improvements to reduce impacts on U.S. 50 eastbound / Oak Avenue Parkway loop ramp merge (Freeway Merge 8).
- Mitigation Measure 3A.15-4x: Participate in fair share funding of improvements to reduce impacts on U.S. 50 westbound / Empire Ranch Road loop ramp merge (Freeway Merge 27).
- Mitigation Measure 3A.15-4y: Participate in fair share funding of improvements to reduce impacts on U.S. 50 westbound / Prairie City Road loop ramp merge (Freeway Merge 35).

CONCLUSION

The updated transportation impact analysis is consistent with the analysis done for the approved FPASP. While minor adjustments are necessary to accommodate changes since the EIR/EIS was certified, the project would not result in new or substantially more severe significant impacts to transportation. Therefore, the conclusions of the EIR/EIS remain valid.

4.17 UTILITIES AND SERVICE SYSTEMS

Environmental Issue Area	Where Impact Was Analyzed in the EIR/EIS.	Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	Any New Information Requiring New Analysis or Verification?	Do Prior Environmental Documents Mitigations Address/Resolve Impacts?
17. Utilities and Service Systems. Would the project:				
a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	Setting pp. 3A.16-1 to 3A.16-3 and 3A.18-1 to 3A.18-6 Impacts 3A.16-1, 3A.16-2, 3A.18-2, 3A.16-3, 3A.16-4, 3A.16-5	No	No	Yes
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?	Setting pp. 3A.16-1 to 3A.16-3 and 3A.18-1 to 3A.18-6 Impacts 3A.16-1, 3A.16-2, 3A.18-2, 3A.16-3, 3A.16-4, 3A.16-5	No	No	Yes
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?	Setting p. 4-68	No	No	Yes
d. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	Setting pp. 3A.18-1 to 3A.18-6 Impact 3A.18-1	No	No	Yes
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?	Setting pp. 3A.16-1 to 3A.16-3 Impacts 3A.16-2, 3A.16-3, 3A.16-4, 3A.16-5	No	No	Yes
f. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	Setting pp. 3A.16-3 to 3A.16-4 Impacts 3A.16-6, 3A.16-7	No	No	NA
g. Comply with federal, state, and local statutes and regulations related to solid waste?	Setting p. 3A.16-4 Impacts 3A.16-6, 3A.16-7	No	No	NA
h. Create demand for natural gas, electricity, telephone, and other utility services that cannot be met.	Setting pp. 3A.16-5 to 3A.16-7 Impacts 3A.16-8, 3A.16-9, 3A.16-10, 3A.16-11	No	No	NA
i. Result in inefficient, wasteful, and unnecessary consumption of energy.	Setting pp. 3A.16-5to 3A.16-6, 3A.16-8 Impact 3A.16-12	No	No	NA

4.17.1 Discussion

No substantial change in the environmental and regulatory settings related to utilities and service systems as described in EIR/EIS Section 3A.16 Utilities and Service Systems – Land has occurred since certification of the EIR in 2011.

a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

As described below under b), the project area is not currently served by a municipal wastewater collection system. However, the proposed wastewater infrastructure for the FPASP area is described on pages 2-26 to 2-31 of the EIR/EIS and as described therein, the system would be designed to meet RWQCB and City wastewater treatment requirements and wastewater would ultimately be conveyed to the Sacramento Regional County Sanitation District regional facility for treatment and disposal. The regional facility treats wastewater in compliance with its RWQCB Waste Discharge Requirement permit. While some infrastructure associated with the approved private school would be redesigned for residential development, the overall wastewater system would continue to comply with RWQCB requirements. No new significant impacts or substantially more severe impacts would occur. Therefore, the findings of the certified EIR/EIS remain valid and no further analysis is required.

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?

As described in the EIR/EIS under Impacts 3A.16-1, 3A.16-2, 3A.18-2, 3A.16-3, 3A.16-4, and 3A.16-5, the project area is not served by a municipal wastewater collection system and both on-site and off-site wastewater collection and conveyance infrastructure need to be designed. The EIR/EIS analyzed the potential demand on facilities for the Sacramento Regional Wastewater Treatment Plant (SRWTP), Sacramento Regional County Sanitation District (SRCSD), El Dorado Irrigation District (EID), and El Dorado Hills Wastewater Treatment Plant. The EIR/EIS concluded that the impacts to these facilities could be potentially significant.

In March 2016, MacKay & Somps compared the sanitary sewer demand of the Folsom Heights project under the approved FPASP to the demand under the currently proposed project (MacKay & Somps 2016a). The project would decrease demand on sanitary sewer by 0.004 million gallons per day compared to the adopted FPASP. With the implementation of Mitigation Measures 3A.16-1, 3A.18-2a, 3A.18-2b, 3A.16-3, 3A.16-4, and 3A.16-5, the impacts would be reduced to less than significant for all impacts except for the potentially significant and unavoidable impacts addressing environmental effects associated with improvements to treatment plant facilities. Because the project would decrease wastewater conveyance and treatment demand, no new significant impacts or substantially more severe impacts would occur. Therefore, the findings of the certified EIR/EIS remain valid and no further analysis is required.

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?

The approved FPASP would require new storm water drainage facilities. These were included in the approved FPASP and the potential significant environmental effects were analyzed throughout the EIR/EIS The project would not substantially change development patterns and the amount of drainage infrastructure required to serve the site from that approved in the FPASP and no new off-site infrastructure or changes to the approved backbone infrastructure would be required. Therefore, no new significant impacts or substantially more severe impacts would occur, and the findings of the certified EIR/EIS remain valid and no further analysis is required.

d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

As analyzed in the EIR/EIS under Impact 3A.18-1, the proposed water supply would be adequate to meet he projected water demand by the FPASP in both normal and critically dry years. However, the EIR/EIS concluded that the impact to water supplies was potentially significant because of the possibility that the water infrastructure to accommodate the FPASP may not be developed or coordinated fully with the development of houses and other water using land types. To reduce this potential impact to less than significant, Mitigation Measure 3A.18-1 required all applicants to submit proof of surface water supply availability. With implementation of this mitigation measure, the impact would be reduced to a less-than-significant level.

In March 2016, MacKay & Somps evaluated the water demand of the project in comparison to the approved FPASP for Folsom Heights. MacKay & Somps determined that, with the changes to land uses, the water demand would decrease by 14 acre-feet per normal year and 15 acre-feet per dry year compared to the approved plan (MacKay & Somps 2016b). Because the proposed project would result in a slight decrease in water demand, the conclusions are the same as that presented in the EIR/EIS. No new significant impacts or substantially more severe impacts would occur.

In November 2012, the City considered and adopted an addendum to the FPASP EIR/EIS that assessed the environmental impacts of changing the approved water supply for the FPASP to the Revised Proposed Off-Site Water Facility Alternative, which would use water obtained through the City's conservation activities and exchange of supplies with the City's east area (City of Folsom 2012). The addendum concluded that water supplies under the Off-Site Water Facility Alternative would be more secure than the originally considered water supply plan, and landowners in the FPASP would continue to be subject to the previously adopted mitigation measures, which require submittal of proof of surface water supply availability and adequate water service infrastructure prior to approval of new development (Water Addendum, pp. 3-18 to 3-19.) Thus, with these mitigation measures in place, it is reasonable to conclude that development in the FPASP, including this project, would not outpace the City's available water supplies. Water for the project would be provided by EID, and prior to approval of the project, EID will review the project and provide proof that there is adequate water supply to serve the project.

Therefore, no new significant impacts or substantially more severe impacts would occur. The findings of the certified EIR/EIS remain valid and no further analysis is required.

e) Result in a determination by the wastewater treatment provider that 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?

Under Impacts 3A.16-2, 3A.16-3, 3A.16-4, and 3A.16-5, the EIR/EIS analyzed the potential demand on wastewater facilities for the SRWTP, SRCSD, EID, and El Dorado Hills Wastewater Treatment Plant. The SRCSD facility was found to have adequate capacity to serve the FPASP while the SRWTP, EID, and El Dorado Hills facilities may need to be upgraded or it is unknown whether they would have capacity. For this reason, the EIR/EIS required Mitigation Measures 3A.16-3, 3A.16-4, and 3A.16-5 that required the project applicant to demonstrate that the appropriate facilities had capacity in the tentative map stage. With implementation of these measures, the impact would be less than significant.

In March 2016, MacKay & Somps compared the sanitary sewer demand of the Folsom Heights project under the approved FPASP to the demand under the project (MacKay & Somps 2016a). The project would decrease demand on sanitary sewer by 0.004 million gallons per day compared to the adopted FPASP. To reduce the potential impact regarding adequate capacity, the project would need to comply with Mitigation Measures 3A.16-3, 3A.16-4, and 3A.16-5 recommended in the FPASP. With implementation of these mitigation measures, the potential for inadequate capacity to serve the project would be reduced to a less-than-significant level because the applicant would be required to reach out to service providers to ensure adequate capacity is available and submit the proof of adequate capacity to the City before the City would issue building permits. Because no new significant impacts or substantially more severe impacts would occur, the findings of the certified EIR/EIS remain valid and no further analysis is required.

f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

Impact 3A.16-6 of the Draft EIR/EIS analyzed short-term generation of solid waste during project construction while Impact 3A.16-7 analyzed increased long-term generation of solid waste. The EIR/EIS found that the estimated waste generated both long- and short-term by the project could be accommodated within the existing landfills. For the project, there would be more solid waste generated by new residents and less solid waste from employees. The California Integrated Waste Management Board estimates solid waste generation rates for Sacramento County as 0.36 ton per resident per year and 1.8 tons of waste per employee per year, as found in the EIR/EIS (pages 3A.16-4 and 3A.16-31). Based on these generation rates, the project would generate less solid waste overall because there would be a significantly higher reduction in employees (approximately 987 based on 255 square feet per employee as calculated using the Draft EIR/EIS), which have a higher solid waste generation rate than residents. Overall, there would be a decrease in the estimated solid waste generated by the project as compared to the adopted FPASP. No new significant impacts or substantially more severe impacts would occur. Therefore, the findings of the certified EIR/EIS remain valid and no further analysis is required.

g) Comply with federal, state, and local statutes and regulations related to solid waste?

In Impacts 3A.16-6 and 3A.16-7, the EIR/EIS describes how the FPASP would comply with statutes and regulations related to solid waste. These impacts (Impact 3A.16-6 and 3A.16-7) were determined to be less than significant and no mitigation measures were required. The project would continue to comply with these statues and regulations. Because there are no new significant impacts or substantially more severe impacts, the findings of the certified EIR/EIS remain valid and no further analysis is required.

h) Create demand for natural gas, electricity, telephone, and other utility services that cannot be met.

In Impacts 3A.16-8, 3A.16-9, 3A.16-10, 3A.16-11, the EIR/EIS analyzed the demand for utilities and services not already covered in other discussions. The EIR/EIS found that the impacts to electricity service, natural gas, telecommunications service, and cable television and communications service would be less than significant and no mitigation measures were required. The project would not result in substantial land use changes that would substantially change estimated demands for these services. Therefore, no new significant impacts or substantially more severe impacts would occur. The findings of the certified EIR/EIS remain valid and no further analysis is required.

i) Result in inefficient, wasteful, and unnecessary consumption of energy.

As described in Impact 3A.16-12, the FPASP would increase the consumption of energy. However, the FPASP would need to comply with Building Energy Efficiency Standards included in Title 24 of the California Code of Regulations and implement an Air Quality Management Plan. This impact (Impact 3A.16-12) was determined to be less than significant and no mitigation was required. The project would continue to comply with Title 24 requirements. Therefore, no new significant impacts or substantially more severe impacts would occur. The findings of the certified EIR/EIS remain valid and no further analysis is required.

Mitigation Measures

The following mitigation measures were adopted with the FPASP and would continue to remain applicable if the project was approved.

- Mitigation Measure 3A.16-1: Submit proof of adequate on- and off-site wastewater conveyance facilities and implement on- and off-site infrastructure service systems or ensure that adequate financing is secured.

- Mitigation Measure 3A.16-3: Demonstrate adequate SRWTP wastewater treatment capacity.

- Mitigation Measure 3A.16-4: Submit proof of adequate EID off-site wastewater conveyance facilities and implement EID off-site infrastructure service systems or ensure that adequate financing is secured.
- Mitigation Measure 3A.16-5: Demonstrate adequate El Dorado Hills Wastewater Treatment Plant capacity.
- Mitigation Measure 3A.18-1: Submit proof of surface water supply availability.
- Mitigation Measure 3A.18-2a: Submit proof of adequate off-site water conveyance facilities and implement off-site infrastructure service system or ensure that adequate financing is secured.
- Mitigation Measure 3A.18-2b: Demonstrate adequate off-site water treatment capacity (if the off-site water treatment plant option is selected).

CONCLUSION

No changes in circumstances would result in new or substantially more severe significant environmental impacts related to utilities and service systems, compared to the analysis presented in the FPASP EIR/EIS. Therefore, the conclusions of the certified Final EIR/EIS remain valid and no additional analysis is required.

4.18 MANDATORY FINDINGS OF SIGNIFICANCE

Environmental Issue Area		Where Impact Was Analyzed in the EIR/EIS.	Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	Any New Information Requiring New Analysis or Verification?	Do Prior Environmental Documents Mitigations Address/Resolve Impacts?
18.	**Mandatory Findings of Significance.**				
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, substantially reduce the number or restrict the range of an endangered, rare or threatened species or eliminate important examples of the major periods of California history or prehistory?	Chapter 3, Affected Environment, Environmental Consequences, and Mitigation Measures	No	Yes, discussed throughout environmental checklist	Yes
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 view in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	Setting pp. 4-1 to 4-20 Impacts pp. 4-20 to 4-64	No	No	Yes
c.	Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	Chapter 3, Affected Environment, Environmental Consequences, and Mitigation Measures	No	Yes, discussed throughout environmental checklist	Yes

CONCLUSION

Since the EIR/EIS was certified, there have been regulatory changes with regards to agricultural resources, air quality, and GHGs. However, no new significant impacts or substantially more severe impacts to agricultural resources, air quality, or GHGs were identified.

All approved mitigation in the EIR/EIS or contained in this document would continue to be implemented with the proposed project. Therefore, no new significant impacts would occur with implementation of the proposed project.

5 LIST OF PREPARERS AND PERSONS CONSULTED

5.1 LIST OF PREPARERS

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Appendix A

Air Quality and Greenhouse Gas Modeling and Assumptions Data

FolsomHeights_Adopted(Original)

Sacramento Valley Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	376.79	1000sqft	34.50	376,794.00	0
Apartments Low Rise	253.00	Dwelling Unit	27.94	253,000.00	491
Single Family Housing	106.00	Dwelling Unit	35.03	190,800.00	310
Single Family Housing	171.00	Dwelling Unit	31.02	307,800.00	499

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	65
Climate Zone	6			**Operational Year**	2018
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	590.31	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Running defaults for operational modeling for 2018.

Land Use - Target DU, Lot Acreages, and Population Based on Table 2-1.

Table Name	Column Name	Default Value	New Value
tblLandUse	LotAcreage	8.65	34.50
tblLandUse	LotAcreage	15.81	27.94
tblLandUse	LotAcreage	34.42	35.03
tblLandUse	LotAcreage	55.52	31.02
tblLandUse	Population	724.00	491.00
tblLandUse	Population	303.00	310.00
tblLandUse	Population	489.00	499.00
tblProjectCharacteristics	OperationalYear	2014	2018
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.5576	5.8350				0.2953	1.4044		0.2742	0.8767						499.3668
2018	0.6686	7.3656				0.3514	2.8110		0.3233	1.4849						703.8298
2019	0.6143	5.2681				0.2458	2.0307		0.2281	0.9038						956.7984
2020	0.5327	3.5794				0.1639	0.9003		0.1538	0.3515						1,075.2572
2021	0.4841	3.1822				0.1413	0.8749		0.1326	0.3295						1,062.6445
2022	0.4460	2.8462				0.1212	0.8519		0.1137	0.3099						1,051.1428
2023	0.4150	2.6127				0.1062	0.8370		0.0997	0.2959						1,044.3632
2024	0.3967	2.4934				0.0958	0.8323		0.0899	0.2876						1,046.6676
2025	0.3749	2.3430				0.0844	0.8180		0.0791	0.2761						1,037.7397
2026	0.3693	2.3297				0.0844	0.8180		0.0791	0.2761						1,033.6671
2027	0.3646	2.3184				0.0844	0.8181		0.0791	0.2761						1,029.9664
2028	0.3587	2.2994				0.0841	0.8150		0.0789	0.2751						1,022.8532
2029	0.3556	2.2990				0.0845	0.8182		0.0792	0.2762						1,024.0589
2030	0.3443	1.7042				0.0353	0.7690		0.0340	0.2310						1,060.6847
2031	0.2280	1.1496				0.0403	0.2764		0.0399	0.1032						543.9004
2032	16.1770	0.2482				9.0100e-003	0.1205		8.9500e-003	0.0386						147.2420
Total	**22.6871**	**47.8739**				**2.0272**	**15.7955**		**1.8933**	**6.5922**						**14,340.1826**

2.1 Overall Construction

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.5576	5.8350				0.2953	1.4044		0.2742	0.8767						499.3662
2018	0.6686	7.3656				0.3514	2.8110		0.3233	1.4849						703.8289
2019	0.6143	5.2681				0.2458	2.0307		0.2281	0.9038						956.7978
2020	0.5327	3.5794				0.1639	0.9003		0.1538	0.3515						1,075.2569
2021	0.4841	3.1822				0.1413	0.8749		0.1326	0.3295						1,062.6441
2022	0.4460	2.8462				0.1212	0.8519		0.1137	0.3099						1,051.1424
2023	0.4150	2.6127				0.1062	0.8370		0.0997	0.2959						1,044.3629
2024	0.3967	2.4934				0.0958	0.8323		0.0899	0.2876						1,046.6672
2025	0.3749	2.3430				0.0844	0.8180		0.0791	0.2761						1,037.7393
2026	0.3693	2.3297				0.0844	0.8180		0.0791	0.2761						1,033.6668
2027	0.3646	2.3184				0.0844	0.8181		0.0791	0.2761						1,029.9660
2028	0.3587	2.2994				0.0841	0.8150		0.0789	0.2751						1,022.8529
2029	0.3556	2.2990				0.0845	0.8182		0.0792	0.2762						1,024.0585
2030	0.3443	1.7042				0.0353	0.7690		0.0340	0.2310						1,060.6843
2031	0.2280	1.1496				0.0403	0.2764		0.0399	0.1032						543.9000
2032	16.1770	0.2482				9.0100e-003	0.1205		8.9500e-003	0.0386						147.2419
Total	**22.6870**	**47.8739**				**2.0272**	**15.7955**		**1.8933**	**6.5922**						**14,340.1761**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**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**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	56.7780	0.7330				8.7854	8.7854		8.7852	8.7852						1,226.2454
Energy	0.0945	0.8225				0.0653	0.0653		0.0653	0.0653						3,377.3983
Mobile	5.2260	15.9809				0.2208	8.9932		0.2033	2.5573						10,212.6584
Waste						0.0000	0.0000		0.0000	0.0000						343.1658
Water						0.0000	0.0000		0.0000	0.0000						332.6526
Total	**62.0984**	**17.5364**				**9.0715**	**17.8439**		**9.0537**	**11.4078**						**15,492.1205**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	56.7780	0.7330				8.7854	8.7854		8.7852	8.7852						1,226.2454
Energy	0.0945	0.8225				0.0653	0.0653		0.0653	0.0653						3,377.3983
Mobile	5.2260	15.9809				0.2208	8.9932		0.2033	2.5573						10,212.6584
Waste						0.0000	0.0000		0.0000	0.0000						343.1658
Water						0.0000	0.0000		0.0000	0.0000						332.6013
Total	**62.0984**	**17.5364**				**9.0715**	**17.8439**		**9.0537**	**11.4078**						**15,492.0691**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**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**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2017	10/6/2017	5	200	
2	Site Preparation	Site Preparation	10/7/2017	3/23/2018	5	120	
3	Grading	Grading	3/24/2018	5/31/2019	5	310	
4	Building Construction	Building Construction	6/1/2019	4/18/2031	5	3100	
5	Paving	Paving	4/19/2031	2/20/2032	5	220	
6	Architectural Coating	Architectural Coating	2/21/2032	12/24/2032	5	220	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 775

Acres of Paving: 0

Residential Indoor: 1,521,990; Residential Outdoor: 507,330; Non-Residential Indoor: 565,191; Non-Residential Outdoor: 188,397 (Architectural Coating – sqft)

<u>OffRoad Equipment</u>

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	162	0.38
Demolition	Rubber Tired Dozers	2	8.00	255	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	402.00	118.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	80.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.4048	4.2697				0.2125	0.2125		0.1980	0.1980						368.2917
Total	**0.4048**	**4.2697**				**0.2125**	**0.2125**		**0.1980**	**0.1980**						**368.2917**

3.2 Demolition - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	5.5800e-003	9.3500e-003				1.3000e-004	0.0186		1.2000e-004	5.0200e-003						15.7558
Total	**5.5800e-003**	**9.3500e-003**				**1.3000e-004**	**0.0186**		**1.2000e-004**	**5.0200e-003**						**15.7558**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.4048	4.2697				0.2125	0.2125		0.1980	0.1980						368.2913
Total	**0.4048**	**4.2697**				**0.2125**	**0.2125**		**0.1980**	**0.1980**						**368.2913**

3.2 Demolition - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	5.5800e-003	9.3500e-003				1.3000e-004	0.0186		1.2000e-004	5.0200e-003						15.7558
Total	**5.5800e-003**	**9.3500e-003**				**1.3000e-004**	**0.0186**		**1.2000e-004**	**5.0200e-003**						**15.7558**

3.3 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust						0.0000	1.0840		0.0000	0.5958						0.0000
Off-Road	0.1452	1.5526				0.0826	0.0826		0.0760	0.0760						109.6472
Total	**0.1452**	**1.5526**				**0.0826**	**1.1666**		**0.0760**	**0.6719**						**109.6472**

3.3 Site Preparation - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	2.0100e-003	3.3700e-003				5.0000e-005	6.6800e-003		4.0000e-005	1.8100e-003						5.6721
Total	**2.0100e-003**	**3.3700e-003**				**5.0000e-005**	**6.6800e-003**		**4.0000e-005**	**1.8100e-003**						**5.6721**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust						0.0000	1.0840		0.0000	0.5958						0.0000
Off-Road	0.1452	1.5526				0.0826	0.0826		0.0760	0.0760						109.6470
Total	**0.1452**	**1.5526**				**0.0826**	**1.1666**		**0.0760**	**0.6719**						**109.6470**

3.3 Site Preparation - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	2.0100e-003	3.3700e-003				5.0000e-005	6.6800e-003		4.0000e-005	1.8100e-003						5.6721
Total	**2.0100e-003**	**3.3700e-003**				**5.0000e-005**	**6.6800e-003**		**4.0000e-005**	**1.8100e-003**						**5.6721**

3.3 Site Preparation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust						0.0000	1.0840		0.0000	0.5958						0.0000
Off-Road	0.1288	1.3683				0.0710	0.0710		0.0653	0.0653						107.9240
Total	**0.1288**	**1.3683**				**0.0710**	**1.1549**		**0.0653**	**0.6611**						**107.9240**

3.3 Site Preparation - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	1.7400e-003	3.0100e-003				5.0000e-005	6.6800e-003		4.0000e-005	1.8100e-003						5.4568
Total	**1.7400e-003**	**3.0100e-003**				**5.0000e-005**	**6.6800e-003**		**4.0000e-005**	**1.8100e-003**						**5.4568**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust						0.0000	1.0840		0.0000	0.5958						0.0000
Off-Road	0.1288	1.3683				0.0710	0.0710		0.0653	0.0653						107.9239
Total	**0.1288**	**1.3683**				**0.0710**	**1.1549**		**0.0653**	**0.6611**						**107.9239**

3.3 Site Preparation - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	1.7400e-003	3.0100e-003				5.0000e-005	6.6800e-003		4.0000e-005	1.8100e-003						5.4568
Total	**1.7400e-003**	**3.0100e-003**				**5.0000e-005**	**6.6800e-003**		**4.0000e-005**	**1.8100e-003**						**5.4568**

3.4 Grading - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust						0.0000	1.3444		0.0000	0.5575						0.0000
Off-Road	0.5316	5.9832				0.2802	0.2802		0.2578	0.2578						570.1373
Total	**0.5316**	**5.9832**				**0.2802**	**1.6246**		**0.2578**	**0.8152**						**570.1373**

3.4 Grading - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	6.4800e-003	0.0112				1.7000e-004	0.0249		1.6000e-004	6.7200e-003						20.3116
Total	**6.4800e-003**	**0.0112**				**1.7000e-004**	**0.0249**		**1.6000e-004**	**6.7200e-003**						**20.3116**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust						0.0000	1.3444		0.0000	0.5575						0.0000
Off-Road	0.5316	5.9831				0.2802	0.2802		0.2578	0.2578						570.1366
Total	**0.5316**	**5.9831**				**0.2802**	**1.6246**		**0.2578**	**0.8152**						**570.1366**

3.4 Grading - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	6.4800e-003	0.0112				1.7000e-004	0.0249		1.6000e-004	6.7200e-003						20.3116
Total	**6.4800e-003**	**0.0112**				**1.7000e-004**	**0.0249**		**1.6000e-004**	**6.7200e-003**						**20.3116**

3.4 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust						0.0000	1.3444		0.0000	0.5575						0.0000
Off-Road	0.2666	2.9538				0.1365	0.1365		0.1256	0.1256						304.1604
Total	**0.2666**	**2.9538**				**0.1365**	**1.4809**		**0.1256**	**0.6831**						**304.1604**

3.4 Grading - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	3.1500e-003	5.5200e-003				9.0000e-005	0.0135		8.0000e-005	3.6400e-003						10.5854
Total	**3.1500e-003**	**5.5200e-003**				**9.0000e-005**	**0.0135**		**8.0000e-005**	**3.6400e-003**						**10.5854**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust						0.0000	1.3444		0.0000	0.5575						0.0000
Off-Road	0.2666	2.9538				0.1365	0.1365		0.1256	0.1256						304.1601
Total	**0.2666**	**2.9538**				**0.1365**	**1.4809**		**0.1256**	**0.6831**						**304.1601**

3.4 Grading - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	3.1500e-003	5.5200e-003				9.0000e-005	0.0135		8.0000e-005	3.6400e-003						10.5854
Total	**3.1500e-003**	**5.5200e-003**				**9.0000e-005**	**0.0135**		**8.0000e-005**	**3.6400e-003**						**10.5854**

3.5 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1787	1.5933				0.0977	0.0977		0.0918	0.0918						178.8424
Total	**0.1787**	**1.5933**				**0.0977**	**0.0977**		**0.0918**	**0.0918**						**178.8424**

3.5 Building Construction - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0775	0.5607				8.9500e-003	0.0610		8.2300e-003	0.0232						166.5071
Worker	0.0884	0.1547				2.5300e-003	0.3777		2.3500e-003	0.1021						296.7030
Total	**0.1659**	**0.7155**				**0.0115**	**0.4387**		**0.0106**	**0.1253**						**463.2101**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1787	1.5933				0.0977	0.0977		0.0918	0.0918						178.8422
Total	**0.1787**	**1.5933**				**0.0977**	**0.0977**		**0.0918**	**0.0918**						**178.8422**

3.5 Building Construction - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0775	0.5607				8.9500e-003	0.0610		8.2300e-003	0.0232						166.5071
Worker	0.0884	0.1547				2.5300e-003	0.3777		2.3500e-003	0.1021						296.7030
Total	**0.1659**	**0.7155**				**0.0115**	**0.4387**		**0.0106**	**0.1253**						**463.2101**

3.5 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2766	2.5000				0.1458	0.1458		0.1371	0.1371						303.6973
Total	**0.2766**	**2.5000**				**0.1458**	**0.1458**		**0.1371**	**0.1371**						**303.6973**

3.5 Building Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.1160	0.8335				0.0138	0.1035		0.0127	0.0384						280.4226
Worker	0.1401	0.2459				4.3400e-003	0.6510		4.0200e-003	0.1760						491.1374
Total	**0.2561**	**1.0794**				**0.0181**	**0.7545**		**0.0167**	**0.2144**						**771.5600**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2766	2.5000				0.1458	0.1458		0.1371	0.1371						303.6969
Total	**0.2766**	**2.5000**				**0.1458**	**0.1458**		**0.1371**	**0.1371**						**303.6969**

3.5 Building Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.1160	0.8335				0.0138	0.1035		0.0127	0.0384						280.4226
Worker	0.1401	0.2459				4.3400e-003	0.6510		4.0200e-003	0.1760						491.1374
Total	**0.2561**	**1.0794**				**0.0181**	**0.7545**		**0.0167**	**0.2144**						**771.5600**

3.5 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2471	2.2629				0.1246	0.1246		0.1172	0.1172						302.5568
Total	**0.2471**	**2.2629**				**0.1246**	**0.1246**		**0.1172**	**0.1172**						**302.5568**

3.5 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.1060	0.6907				0.0124	0.1018		0.0114	0.0370						279.0070
Worker	0.1311	0.2286				4.3300e-003	0.6485		4.0100e-003	0.1754						481.0807
Total	**0.2371**	**0.9193**				**0.0167**	**0.7503**		**0.0154**	**0.2124**						**760.0876**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2471	2.2629				0.1246	0.1246		0.1172	0.1172						302.5565
Total	**0.2471**	**2.2629**				**0.1246**	**0.1246**		**0.1172**	**0.1172**						**302.5565**

3.5 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.1060	0.6907				0.0124	0.1018		0.0114	0.0370						279.0070
Worker	0.1311	0.2286				4.3300e-003	0.6485		4.0100e-003	0.1754						481.0807
Total	**0.2371**	**0.9193**				**0.0167**	**0.7503**		**0.0154**	**0.2124**						**760.0876**

3.5 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2209	2.0197				0.1047	0.1047		0.0986	0.0986						301.5017
Total	**0.2209**	**2.0197**				**0.1047**	**0.1047**		**0.0986**	**0.0986**						**301.5017**

3.5 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.1020	0.6128				0.0121	0.1012		0.0111	0.0367						277.7921
Worker	0.1231	0.2136				4.3200e-003	0.6460		4.0100e-003	0.1747						471.8490
Total	**0.2251**	**0.8264**				**0.0164**	**0.7472**		**0.0151**	**0.2113**						**749.6411**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2209	2.0197				0.1047	0.1047		0.0986	0.0986						301.5013
Total	**0.2209**	**2.0197**				**0.1047**	**0.1047**		**0.0986**	**0.0986**						**301.5013**

3.5 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.1020	0.6128				0.0121	0.1012		0.0111	0.0367						277.7921
Worker	0.1231	0.2136				4.3200e-003	0.6460		4.0100e-003	0.1747						471.8490
Total	**0.2251**	**0.8264**				**0.0164**	**0.7472**		**0.0151**	**0.2113**						**749.6411**

3.5 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2036	1.8606				0.0906	0.0906		0.0852	0.0852						301.5949
Total	**0.2036**	**1.8606**				**0.0906**	**0.0906**		**0.0852**	**0.0852**						**301.5949**

3.5 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0951	0.5508				0.0113	0.1004		0.0104	0.0360						277.5349
Worker	0.1163	0.2013				4.3400e-003	0.6460		4.0200e-003	0.1747						465.2334
Total	**0.2114**	**0.7521**				**0.0157**	**0.7465**		**0.0145**	**0.2107**						**742.7683**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2036	1.8606				0.0906	0.0906		0.0852	0.0852						301.5946
Total	**0.2036**	**1.8606**				**0.0906**	**0.0906**		**0.0852**	**0.0852**						**301.5946**

3.5 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0951	0.5508				0.0113	0.1004		0.0104	0.0360						277.5349
Worker	0.1163	0.2013				4.3400e-003	0.6460		4.0200e-003	0.1747						465.2334
Total	**0.2114**	**0.7521**				**0.0157**	**0.7465**		**0.0145**	**0.2107**						**742.7683**

3.5 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1920	1.7524				0.0800	0.0800		0.0752	0.0752						303.9643
Total	**0.1920**	**1.7524**				**0.0800**	**0.0800**		**0.0752**	**0.0752**						**303.9643**

3.5 Building Construction - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0936	0.5486				0.0115	0.1013		0.0105	0.0363						279.7837
Worker	0.1112	0.1923				4.3900e-003	0.6510		4.0700e-003	0.1761						462.9196
Total	**0.2047**	**0.7409**				**0.0159**	**0.7523**		**0.0146**	**0.2124**						**742.7033**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1920	1.7524				0.0800	0.0800		0.0752	0.0752						303.9639
Total	**0.1920**	**1.7524**				**0.0800**	**0.0800**		**0.0752**	**0.0752**						**303.9639**

3.5 Building Construction - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0936	0.5486				0.0115	0.1013		0.0105	0.0363						279.7837
Worker	0.1112	0.1923				4.3900e-003	0.6510		4.0700e-003	0.1761						462.9196
Total	**0.2047**	**0.7409**				**0.0159**	**0.7523**		**0.0146**	**0.2124**						**742.7033**

3.5 Building Construction - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1777	1.6195				0.0685	0.0685		0.0645	0.0645						302.8874
Total	**0.1777**	**1.6195**				**0.0685**	**0.0685**		**0.0645**	**0.0645**						**302.8874**

3.5 Building Construction - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0913	0.5407				0.0114	0.1009		0.0105	0.0362						278.8112
Worker	0.1059	0.1829				4.4000e-003	0.6486		4.0900e-003	0.1754						456.0411
Total	**0.1972**	**0.7236**				**0.0158**	**0.7495**		**0.0146**	**0.2116**						**734.8523**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1777	1.6195				0.0685	0.0685		0.0645	0.0645						302.8871
Total	**0.1777**	**1.6195**				**0.0685**	**0.0685**		**0.0645**	**0.0645**						**302.8871**

3.5 Building Construction - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0913	0.5407				0.0114	0.1009		0.0105	0.0362						278.8112
Worker	0.1059	0.1829				4.4000e-003	0.6486		4.0900e-003	0.1754						456.0411
Total	**0.1972**	**0.7236**				**0.0158**	**0.7495**		**0.0146**	**0.2116**						**734.8523**

3.5 Building Construction - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1777	1.6195				0.0685	0.0685		0.0645	0.0645						302.8874
Total	**0.1777**	**1.6195**				**0.0685**	**0.0685**		**0.0645**	**0.0645**						**302.8874**

3.5 Building Construction - 2026

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0899	0.5345				0.0114	0.1009		0.0105	0.0362						278.8986
Worker	0.1017	0.1757				4.4500e-003	0.6486		4.1300e-003	0.1755						451.8811
Total	**0.1916**	**0.7102**				**0.0159**	**0.7495**		**0.0147**	**0.2116**						**730.7797**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1777	1.6195				0.0685	0.0685		0.0645	0.0645						302.8871
Total	**0.1777**	**1.6195**				**0.0685**	**0.0685**		**0.0645**	**0.0645**						**302.8871**

3.5 Building Construction - 2026

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0899	0.5345				0.0114	0.1009		0.0105	0.0362						278.8986
Worker	0.1017	0.1757				4.4500e-003	0.6486		4.1300e-003	0.1755						451.8811
Total	**0.1916**	**0.7102**				**0.0159**	**0.7495**		**0.0147**	**0.2116**						**730.7797**

3.5 Building Construction - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1777	1.6195				0.0685	0.0685		0.0645	0.0645						302.8874
Total	**0.1777**	**1.6195**				**0.0685**	**0.0685**		**0.0645**	**0.0645**						**302.8874**

3.5 Building Construction - 2027

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0891	0.5297				0.0115	0.1010		0.0105	0.0362						278.9865
Worker	0.0978	0.1692				4.4800e-003	0.6486		4.1600e-003	0.1755						448.0924
Total	**0.1869**	**0.6989**				**0.0159**	**0.7496**		**0.0147**	**0.2117**						**727.0790**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1777	1.6195				0.0685	0.0685		0.0645	0.0645						302.8871
Total	**0.1777**	**1.6195**				**0.0685**	**0.0685**		**0.0645**	**0.0645**						**302.8871**

3.5 Building Construction - 2027

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0891	0.5297				0.0115	0.1010		0.0105	0.0362						278.9865
Worker	0.0978	0.1692				4.4800e-003	0.6486		4.1600e-003	0.1755						448.0924
Total	**0.1869**	**0.6989**				**0.0159**	**0.7496**		**0.0147**	**0.2117**						**727.0790**

3.5 Building Construction - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1770	1.6133				0.0683	0.0683		0.0642	0.0642						301.7269
Total	**0.1770**	**1.6133**				**0.0683**	**0.0683**		**0.0642**	**0.0642**						**301.7269**

3.5 Building Construction - 2028

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0878	0.5235				0.0114	0.1006		0.0105	0.0361						277.9877
Worker	0.0939	0.1627				4.4900e-003	0.6462		4.1700e-003	0.1749						443.1386
Total	**0.1817**	**0.6862**				**0.0159**	**0.7468**		**0.0147**	**0.2109**						**721.1263**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1770	1.6133				0.0683	0.0683		0.0642	0.0642						301.7266
Total	**0.1770**	**1.6133**				**0.0683**	**0.0683**		**0.0642**	**0.0642**						**301.7266**

3.5 Building Construction - 2028

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0878	0.5235				0.0114	0.1006		0.0105	0.0361						277.9877
Worker	0.0939	0.1627				4.4900e-003	0.6462		4.1700e-003	0.1749						443.1386
Total	**0.1817**	**0.6862**				**0.0159**	**0.7468**		**0.0147**	**0.2109**						**721.1263**

3.5 Building Construction - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1777	1.6195				0.0685	0.0685		0.0645	0.0645						302.8874
Total	**0.1777**	**1.6195**				**0.0685**	**0.0685**		**0.0645**	**0.0645**						**302.8874**

3.5 Building Construction - 2029

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0873	0.5218				0.0114	0.1010		0.0105	0.0362						279.1176
Worker	0.0906	0.1577				4.5300e-003	0.6487		4.2100e-003	0.1755						442.0539
Total	**0.1779**	**0.6795**				**0.0160**	**0.7497**		**0.0147**	**0.2117**						**721.1715**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1777	1.6195				0.0685	0.0685		0.0645	0.0645						302.8871
Total	**0.1777**	**1.6195**				**0.0685**	**0.0685**		**0.0645**	**0.0645**						**302.8871**

3.5 Building Construction - 2029

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0873	0.5218				0.0114	0.1010		0.0105	0.0362						279.1176
Worker	0.0906	0.1577				4.5300e-003	0.6487		4.2100e-003	0.1755						442.0539
Total	**0.1779**	**0.6795**				**0.0160**	**0.7497**		**0.0147**	**0.2117**						**721.1715**

3.5 Building Construction - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1702	1.0333				0.0193	0.0193		0.0193	0.0193						341.8160
Total	**0.1702**	**1.0333**				**0.0193**	**0.0193**		**0.0193**	**0.0193**						**341.8160**

3.5 Building Construction - 2030

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0868	0.5184				0.0114	0.1010		0.0105	0.0362						279.1765
Worker	0.0873	0.1526				4.5500e-003	0.6487		4.2200e-003	0.1756						439.6921
Total	**0.1741**	**0.6709**				**0.0160**	**0.7497**		**0.0148**	**0.2118**						**718.8687**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1702	1.0333				0.0193	0.0193		0.0193	0.0193						341.8156
Total	**0.1702**	**1.0333**				**0.0193**	**0.0193**		**0.0193**	**0.0193**						**341.8156**

3.5 Building Construction - 2030

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0868	0.5184				0.0114	0.1010		0.0105	0.0362						279.1765
Worker	0.0873	0.1526				4.5500e-003	0.6487		4.2200e-003	0.1756						439.6921
Total	**0.1741**	**0.6709**				**0.0160**	**0.7497**		**0.0148**	**0.2118**						**718.8687**

3.5 Building Construction - 2031

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0509	0.3088				5.7600e-003	5.7600e-003		5.7600e-003	5.7600e-003						102.1519
Total	**0.0509**	**0.3088**				**5.7600e-003**	**5.7600e-003**		**5.7600e-003**	**5.7600e-003**						**102.1519**

3.5 Building Construction - 2031

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0258	0.1541				3.4200e-003	0.0302		3.1500e-003	0.0108						83.4557
Worker	0.0251	0.0441				1.3600e-003	0.1939		1.2600e-003	0.0525						130.8107
Total	**0.0510**	**0.1983**				**4.7800e-003**	**0.2241**		**4.4100e-003**	**0.0633**						**214.2664**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0509	0.3088				5.7600e-003	5.7600e-003		5.7600e-003	5.7600e-003						102.1518
Total	**0.0509**	**0.3088**				**5.7600e-003**	**5.7600e-003**		**5.7600e-003**	**5.7600e-003**						**102.1518**

3.5 Building Construction - 2031

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0258	0.1541				3.4200e-003	0.0302		3.1500e-003	0.0108						83.4557
Worker	0.0251	0.0441				1.3600e-003	0.1939		1.2600e-003	0.0525						130.8107
Total	**0.0510**	**0.1983**				**4.7800e-003**	**0.2241**		**4.4100e-003**	**0.0633**						**214.2664**

3.6 Paving - 2031

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1240	0.6387				0.0296	0.0296		0.0296	0.0296						216.0306
Paving	0.0000					0.0000	0.0000		0.0000	0.0000						0.0000
Total	**0.1240**	**0.6387**				**0.0296**	**0.0296**		**0.0296**	**0.0296**						**216.0306**

3.6 Paving - 2031

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	2.2000e-003	3.8600e-003				1.2000e-004	0.0170		1.1000e-004	4.5900e-003						11.4516
Total	**2.2000e-003**	**3.8600e-003**				**1.2000e-004**	**0.0170**		**1.1000e-004**	**4.5900e-003**						**11.4516**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1240	0.6387				0.0296	0.0296		0.0296	0.0296						216.0303
Paving	0.0000					0.0000	0.0000		0.0000	0.0000						0.0000
Total	**0.1240**	**0.6387**				**0.0296**	**0.0296**		**0.0296**	**0.0296**						**216.0303**

3.6 Paving - 2031

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	2.2000e-003	3.8600e-003				1.2000e-004	0.0170		1.1000e-004	4.5900e-003						11.4516
Total	**2.2000e-003**	**3.8600e-003**				**1.2000e-004**	**0.0170**		**1.1000e-004**	**4.5900e-003**						**11.4516**

3.6 Paving - 2032

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0251	0.1291				5.9800e-003	5.9800e-003		5.9800e-003	5.9800e-003						43.6783
Paving	0.0000					0.0000	0.0000		0.0000	0.0000						0.0000
Total	**0.0251**	**0.1291**				**5.9800e-003**	**5.9800e-003**		**5.9800e-003**	**5.9800e-003**						**43.6783**

3.6 Paving - 2032

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	4.3000e-004	7.6000e-004				2.0000e-005	3.4300e-003		2.0000e-005	9.3000e-004						2.3066
Total	**4.3000e-004**	**7.6000e-004**				**2.0000e-005**	**3.4300e-003**		**2.0000e-005**	**9.3000e-004**						**2.3066**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0251	0.1291				5.9800e-003	5.9800e-003		5.9800e-003	5.9800e-003						43.6783
Paving	0.0000					0.0000	0.0000		0.0000	0.0000						0.0000
Total	**0.0251**	**0.1291**				**5.9800e-003**	**5.9800e-003**		**5.9800e-003**	**5.9800e-003**						**43.6783**

3.6 Paving - 2032

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	4.3000e-004	7.6000e-004				2.0000e-005	3.4300e-003		2.0000e-005	9.3000e-004						2.3066
Total	**4.3000e-004**	**7.6000e-004**				**2.0000e-005**	**3.4300e-003**		**2.0000e-005**	**9.3000e-004**						**2.3066**

3.7 Architectural Coating - 2032

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	16.1235					0.0000	0.0000		0.0000	0.0000						0.0000
Off-Road	0.0144	0.0942				2.2300e-003	2.2300e-003		2.2300e-003	2.2300e-003						28.1097
Total	**16.1379**	**0.0942**				**2.2300e-003**	**2.2300e-003**		**2.2300e-003**	**2.2300e-003**						**28.1097**

3.7 Architectural Coating - 2032

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	0.0136	0.0241				7.7000e-004	0.1088		7.1000e-004	0.0295						73.1474
Total	**0.0136**	**0.0241**				**7.7000e-004**	**0.1088**		**7.1000e-004**	**0.0295**						**73.1474**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	16.1235					0.0000	0.0000		0.0000	0.0000						0.0000
Off-Road	0.0144	0.0942				2.2300e-003	2.2300e-003		2.2300e-003	2.2300e-003						28.1096
Total	**16.1379**	**0.0942**				**2.2300e-003**	**2.2300e-003**		**2.2300e-003**	**2.2300e-003**						**28.1096**

3.7 Architectural Coating - 2032

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	0.0136	0.0241				7.7000e-004	0.1088		7.1000e-004	0.0295						73.1474
Total	**0.0136**	**0.0241**				**7.7000e-004**	**0.1088**		**7.1000e-004**	**0.0295**						**73.1474**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	5.2260	15.9809				0.2208	8.9932		0.2033	2.5573						10,212.6584
Unmitigated	5.2260	15.9809				0.2208	8.9932		0.2033	2.5573						10,212.6584

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	1,667.27	1,811.48	1535.71	5,762,640	5,762,640
General Office Building	4,148.50	893.00	369.26	8,678,752	8,678,752
Single Family Housing	1,014.42	1,068.48	929.62	3,487,215	3,487,215
Single Family Housing	1,636.47	1,723.68	1499.67	5,625,602	5,625,602
Total	8,466.66	5,496.64	4,334.26	23,554,209	23,554,209

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	16.80	7.10	7.90	32.90	18.00	49.10	86	11	3
General Office Building	14.70	6.60	6.60	33.00	48.00	19.00	77	19	4
Single Family Housing	16.80	7.10	7.90	32.90	18.00	49.10	86	11	3
Single Family Housing	16.80	7.10	7.90	32.90	18.00	49.10	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.462115	0.061823	0.181510	0.153742	0.057112	0.007288	0.019722	0.042680	0.001823	0.001665	0.006988	0.000686	0.002845

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000						2,436.8190
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000						2,436.8190
NaturalGas Mitigated	0.0945	0.8225				0.0653	0.0653		0.0653	0.0653						940.5793
NaturalGas Unmitigated	0.0945	0.8225				0.0653	0.0653		0.0653	0.0653						940.5793

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Low Rise	3.43221e +006	0.0185	0.1582				0.0128	0.0128		0.0128	0.0128						184.2706
General Office Building	5.18092e +006	0.0279	0.2540				0.0193	0.0193		0.0193	0.0193						278.1561
Single Family Housing	3.40809e +006	0.0184	0.1570				0.0127	0.0127		0.0127	0.0127						182.9754
Single Family Housing	5.49795e +006	0.0297	0.2533				0.0205	0.0205		0.0205	0.0205						295.1772
Total		**0.0945**	**0.8225**				**0.0653**	**0.0653**		**0.0653**	**0.0653**						**940.5793**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Office Building	5.18092e+006	0.0279	0.2540				0.0193	0.0193		0.0193	0.0193						278.1561
Single Family Housing	3.40809e+006	0.0184	0.1570				0.0127	0.0127		0.0127	0.0127						182.9754
Single Family Housing	5.49795e+006	0.0297	0.2533				0.0205	0.0205		0.0205	0.0205						295.1772
Apartments Low Rise	3.43221e+006	0.0185	0.1582				0.0128	0.0128		0.0128	0.0128						184.2706
Total		**0.0945**	**0.8225**				**0.0653**	**0.0653**		**0.0653**	**0.0653**						**940.5793**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	958941				257.8400
General Office Building	6.04378e +006				1,625.050 6
Single Family Housing	1.27178e +006				341.9558
Single Family Housing	788354				211.9726
Total					**2,436.819 0**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	958941				257.8400
General Office Building	6.04378e +006				1,625.050 6
Single Family Housing	1.27178e +006				341.9558
Single Family Housing	788354				211.9726
Total					**2,436.819 0**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	56.7780	0.7330				8.7854	8.7854		8.7852	8.7852						1,226.245 4
Unmitigated	56.7780	0.7330				8.7854	8.7854		8.7852	8.7852						1,226.245 4

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.6124					0.0000	0.0000		0.0000	0.0000						0.0000
Consumer Products	4.4069					0.0000	0.0000		0.0000	0.0000						0.0000
Hearth	50.6362	0.6870				8.7638	8.7638		8.7635	8.7635						1,219.676 2
Landscaping	0.1225	0.0460				0.0216	0.0216		0.0216	0.0216						6.5692
Total	**56.7780**	**0.7330**				**8.7854**	**8.7854**		**8.7852**	**8.7852**						**1,226.245 4**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.6124					0.0000	0.0000		0.0000	0.0000						0.0000
Consumer Products	4.4069					0.0000	0.0000		0.0000	0.0000						0.0000
Hearth	50.6362	0.6870				8.7638	8.7638		8.7635	8.7635						1,219.676 2
Landscaping	0.1225	0.0460				0.0216	0.0216		0.0216	0.0216						6.5692
Total	**56.7780**	**0.7330**				**8.7854**	**8.7854**		**8.7852**	**8.7852**						**1,226.245 4**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated				332.6013
Unmitigated				332.6526

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	16.484 / 10.3921				54.2035
General Office Building	66.9683 / 41.0451				219.1039
Single Family Housing	18.0477 / 11.3779				59.3453
Total					**332.6526**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	16.484 / 10.3921				54.1951
General Office Building	66.9683 / 41.0451				219.0700
Single Family Housing	18.0477 / 11.3779				59.3362
Total					**332.6013**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated				343.1658
Unmitigated				343.1658

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	116.38				52.9431
General Office Building	350.41				159.4071
Single Family Housing	287.56				130.8156
Total					**343.1658**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	116.38				52.9431
General Office Building	350.41				159.4071
Single Family Housing	287.56				130.8156
Total					**343.1658**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

FolsomHeights_Adopted(Original)

Sacramento Valley Air Basin, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	376.79	1000sqft	34.50	376,794.00	0
Apartments Low Rise	253.00	Dwelling Unit	27.94	253,000.00	491
Single Family Housing	106.00	Dwelling Unit	35.03	190,800.00	310
Single Family Housing	171.00	Dwelling Unit	31.02	307,800.00	499

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	65
Climate Zone	6			**Operational Year**	2018
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	590.31	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Running defaults for operational modeling for 2018.

Land Use - Target DU, Lot Acreages, and Population Based on Table 2-1.

Table Name	Column Name	Default Value	New Value
tblLandUse	LotAcreage	8.65	34.50
tblLandUse	LotAcreage	15.81	27.94
tblLandUse	LotAcreage	34.42	35.03
tblLandUse	LotAcreage	55.52	31.02
tblLandUse	Population	724.00	491.00
tblLandUse	Population	303.00	310.00
tblLandUse	Population	489.00	499.00
tblProjectCharacteristics	OperationalYear	2014	2018
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	4.9180	51.8542				2.7558	21.0520		2.5353	12.5270						4,259.1089
2018	5.3671	59.6340				2.7897	20.6631		2.5665	12.1692						6,499.5931
2019	4.9611	54.2890				2.5066	11.4354		2.3061	5.9703						9,796.0751
2020	4.2189	26.8539				1.2506	7.0933		1.1734	2.7370						9,490.7537
2021	3.8576	23.9811				1.0824	6.9251		1.0154	2.5790						9,411.9797
2022	3.5720	21.5302				0.9315	6.7744		0.8741	2.4378						9,342.8028
2023	3.3292	19.7709				0.8169	6.6600		0.7665	2.3303						9,279.9014
2024	3.1583	18.7181				0.7312	6.5744		0.6856	2.2494						9,226.9310
2025	2.9977	17.6490				0.6461	6.4895		0.6056	2.1694						9,181.1459
2026	2.9498	17.5553				0.6464	6.4898		0.6058	2.1697						9,143.3791
2027	2.9086	17.4762				0.6467	6.4903		0.6061	2.1701						9,109.1378
2028	2.8694	17.4055				0.6469	6.4906		0.6063	2.1704						9,079.7920
2029	2.8298	17.3402				0.6471	6.4909		0.6065	2.1705						9,054.6899
2030	2.7364	12.7883				0.2698	6.1137		0.2603	1.8244						9,362.3641
2031	2.7025	12.7358				0.3247	6.1139		0.3246	1.8245						9,344.8843
2032	146.8553	7.0174				0.3247	1.0491		0.3246	0.3754						2,754.6062
Total	**200.2315**	**396.5991**				**17.0168**	**132.9055**		**15.8627**	**57.8745**						**134,337.1449**

2.1 Overall Construction (Maximum Daily Emission)

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	4.9180	51.8542				2.7558	21.0520		2.5353	12.5270						4,259.1089
2018	5.3671	59.6340				2.7897	20.6631		2.5665	12.1692						6,499.5931
2019	4.9611	54.2890				2.5066	11.4354		2.3061	5.9703						9,796.0751
2020	4.2189	26.8539				1.2506	7.0933		1.1734	2.7370						9,490.7537
2021	3.8576	23.9811				1.0824	6.9251		1.0154	2.5790						9,411.9797
2022	3.5720	21.5302				0.9315	6.7744		0.8741	2.4378						9,342.8028
2023	3.3292	19.7709				0.8169	6.6600		0.7665	2.3303						9,279.9014
2024	3.1583	18.7181				0.7312	6.5744		0.6856	2.2494						9,226.9310
2025	2.9977	17.6490				0.6461	6.4895		0.6056	2.1694						9,181.1459
2026	2.9498	17.5553				0.6464	6.4898		0.6058	2.1697						9,143.3791
2027	2.9086	17.4762				0.6467	6.4903		0.6061	2.1701						9,109.1378
2028	2.8694	17.4055				0.6469	6.4906		0.6063	2.1704						9,079.7920
2029	2.8298	17.3402				0.6471	6.4909		0.6065	2.1705						9,054.6899
2030	2.7364	12.7883				0.2698	6.1137		0.2603	1.8244						9,362.3641
2031	2.7025	12.7358				0.3247	6.1139		0.3246	1.8245						9,344.8843
2032	146.8553	7.0174				0.3247	1.0491		0.3246	0.3754						2,754.6062
Total	**200.2315**	**396.5991**				**17.0168**	**132.9055**		**15.8627**	**57.8745**						**134,337.1449**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	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

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1,269.3723	17.2675				213.9912	213.9912		213.9849	213.9849						32,872.2366
Energy	0.5176	4.5068				0.3576	0.3576		0.3576	0.3576						5,681.1570
Mobile	37.2555	95.2442				1.4081	59.5820		1.2962	16.8567						76,887.6039
Total	**1,307.1454**	**117.0185**				**215.7569**	**273.9308**		**215.6387**	**231.1992**						**115,440.9975**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1,269.3723	17.2675				213.9912	213.9912		213.9849	213.9849						32,872.2366
Energy	0.5176	4.5068				0.3576	0.3576		0.3576	0.3576						5,681.1570
Mobile	37.2555	95.2442				1.4081	59.5820		1.2962	16.8567						76,887.6039
Total	**1,307.1454**	**117.0185**				**215.7569**	**273.9308**		**215.6387**	**231.1992**						**115,440.9975**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2017	10/6/2017	5	200	
2	Site Preparation	Site Preparation	10/7/2017	3/23/2018	5	120	
3	Grading	Grading	3/24/2018	5/31/2019	5	310	
4	Building Construction	Building Construction	6/1/2019	4/18/2031	5	3100	
5	Paving	Paving	4/19/2031	2/20/2032	5	220	
6	Architectural Coating	Architectural Coating	2/21/2032	12/24/2032	5	220	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 775

Acres of Paving: 0

Residential Indoor: 1,521,990; Residential Outdoor: 507,330; Non-Residential Indoor: 565,191; Non-Residential Outdoor: 188,397 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	162	0.38
Demolition	Rubber Tired Dozers	2	8.00	255	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	402.00	118.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	80.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2017

<u>Unmitigated Construction On-Site</u>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.0482	42.6971				2.1252	2.1252		1.9797	1.9797						4,059.721 1
Total	**4.0482**	**42.6971**				**2.1252**	**2.1252**		**1.9797**	**1.9797**						**4,059.721 1**

3.2 Demolition - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	0.0665	0.0840				1.3100e-003	0.1929		1.2000e-003	0.0520						191.8881
Total	**0.0665**	**0.0840**				**1.3100e-003**	**0.1929**		**1.2000e-003**	**0.0520**						**191.8881**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.0482	42.6971				2.1252	2.1252		1.9797	1.9797						4,059.7211
Total	**4.0482**	**42.6971**				**2.1252**	**2.1252**		**1.9797**	**1.9797**						**4,059.7211**

3.2 Demolition - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	0.0665	0.0840				1.3100e-003	0.1929		1.2000e-003	0.0520						191.8881
Total	**0.0665**	**0.0840**				**1.3100e-003**	**0.1929**		**1.2000e-003**	**0.0520**						**191.8881**

3.3 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust						0.0000	18.0663		0.0000	9.9307						0.0000
Off-Road	4.8382	51.7535				2.7542	2.7542		2.5339	2.5339						4,028.8432
Total	**4.8382**	**51.7535**				**2.7542**	**20.8205**		**2.5339**	**12.4646**						**4,028.8432**

3.3 Site Preparation - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	0.0798	0.1008				1.5700e-003	0.2315		1.4400e-003	0.0624						230.2657
Total	**0.0798**	**0.1008**				**1.5700e-003**	**0.2315**		**1.4400e-003**	**0.0624**						**230.2657**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust						0.0000	18.0663		0.0000	9.9307						0.0000
Off-Road	4.8382	51.7535				2.7542	2.7542		2.5339	2.5339						4,028.8432
Total	**4.8382**	**51.7535**				**2.7542**	**20.8205**		**2.5339**	**12.4646**						**4,028.8432**

3.3 Site Preparation - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	0.0798	0.1008				1.5700e-003	0.2315		1.4400e-003	0.0624						230.2657
Total	**0.0798**	**0.1008**				**1.5700e-003**	**0.2315**		**1.4400e-003**	**0.0624**						**230.2657**

3.3 Site Preparation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust						0.0000	18.0663		0.0000	9.9307						0.0000
Off-Road	4.2921	45.6088				2.3654	2.3654		2.1762	2.1762						3,965.5297
Total	**4.2921**	**45.6088**				**2.3654**	**20.4317**		**2.1762**	**12.1069**						**3,965.5297**

3.3 Site Preparation - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	0.0698	0.0902				1.5200e-003	0.2314		1.4000e-003	0.0624						221.5550
Total	**0.0698**	**0.0902**				**1.5200e-003**	**0.2314**		**1.4000e-003**	**0.0624**						**221.5550**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust						0.0000	18.0663		0.0000	9.9307						0.0000
Off-Road	4.2921	45.6088				2.3654	2.3654		2.1762	2.1762						3,965.5297
Total	**4.2921**	**45.6088**				**2.3654**	**20.4317**		**2.1762**	**12.1069**						**3,965.5297**

3.3 Site Preparation - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	0.0698	0.0902				1.5200e-003	0.2314		1.4000e-003	0.0624						221.5550
Total	**0.0698**	**0.0902**				**1.5200e-003**	**0.2314**		**1.4000e-003**	**0.0624**						**221.5550**

3.4 Grading - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust						0.0000	8.6733		0.0000	3.5965						0.0000
Off-Road	5.2895	59.5338				2.7880	2.7880		2.5650	2.5650						6,253.4209
Total	**5.2895**	**59.5338**				**2.7880**	**11.4614**		**2.5650**	**6.1615**						**6,253.4209**

3.4 Grading - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	0.0775	0.1002				1.6900e-003	0.2572		1.5600e-003	0.0693						246.1722
Total	**0.0775**	**0.1002**				**1.6900e-003**	**0.2572**		**1.5600e-003**	**0.0693**						**246.1722**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust						0.0000	8.6733		0.0000	3.5965						0.0000
Off-Road	5.2895	59.5338				2.7880	2.7880		2.5650	2.5650						6,253.4209
Total	**5.2895**	**59.5338**				**2.7880**	**11.4614**		**2.5650**	**6.1615**						**6,253.4209**

3.4 Grading - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	0.0775	0.1002				1.6900e-003	0.2572		1.5600e-003	0.0693						246.1722
Total	**0.0775**	**0.1002**				**1.6900e-003**	**0.2572**		**1.5600e-003**	**0.0693**						**246.1722**

3.4 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust						0.0000	8.6733		0.0000	3.5965						0.0000
Off-Road	4.8912	54.1978				2.5049	2.5049		2.3045	2.3045						6,151.9167
Total	**4.8912**	**54.1978**				**2.5049**	**11.1783**		**2.3045**	**5.9010**						**6,151.9167**

3.4 Grading - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	0.0700	0.0912				1.6600e-003	0.2571		1.5400e-003	0.0693						236.5885
Total	**0.0700**	**0.0912**				**1.6600e-003**	**0.2571**		**1.5400e-003**	**0.0693**						**236.5885**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust						0.0000	8.6733		0.0000	3.5965						0.0000
Off-Road	4.8912	54.1978				2.5049	2.5049		2.3045	2.3045						6,151.916 7
Total	**4.8912**	**54.1978**				**2.5049**	**11.1783**		**2.3045**	**5.9010**						**6,151.916 7**

3.4 Grading - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	0.0700	0.0912				1.6600e-003	0.2571		1.5400e-003	0.0693						236.5885
Total	**0.0700**	**0.0912**				**1.6600e-003**	**0.2571**		**1.5400e-003**	**0.0693**						**236.5885**

3.5 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3516	20.9650				1.2850	1.2850		1.2083	1.2083						2,593.9479
Total	**2.3516**	**20.9650**				**1.2850**	**1.2850**		**1.2083**	**1.2083**						**2,593.9479**

3.5 Building Construction - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.9322	7.0406				0.1171	0.8250		0.1077	0.3096						2,423.669 6
Worker	1.4061	1.8335				0.0333	5.1681		0.0309	1.3926						4,755.429 3
Total	**2.3383**	**8.8740**				**0.1504**	**5.9930**		**0.1386**	**1.7021**						**7,179.098 9**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3516	20.9650				1.2850	1.2850		1.2083	1.2083						2,593.947 9
Total	**2.3516**	**20.9650**				**1.2850**	**1.2850**		**1.2083**	**1.2083**						**2,593.947 9**

3.5 Building Construction - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.9322	7.0406				0.1171	0.8250		0.1077	0.3096						2,423.669 6
Worker	1.4061	1.8335				0.0333	5.1681		0.0309	1.3926						4,755.429 3
Total	**2.3383**	**8.8740**				**0.1504**	**5.9930**		**0.1386**	**1.7021**						**7,179.098 9**

3.5 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1113	19.0839				1.1128	1.1128		1.0465	1.0465						2,555.488 0
Total	**2.1113**	**19.0839**				**1.1128**	**1.1128**		**1.0465**	**1.0465**						**2,555.488 0**

3.5 Building Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.8134	6.0779				0.1047	0.8126		0.0963	0.2982						2,368.1048
Worker	1.2943	1.6921				0.0331	5.1679		0.0307	1.3924						4,567.1609
Total	**2.1077**	**7.7700**				**0.1378**	**5.9804**		**0.1270**	**1.6906**						**6,935.2657**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1113	19.0839				1.1128	1.1128		1.0465	1.0465						2,555.4880
Total	**2.1113**	**19.0839**				**1.1128**	**1.1128**		**1.0465**	**1.0465**						**2,555.4880**

3.5 Building Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.8134	6.0779				0.1047	0.8126		0.0963	0.2982						2,368.104 8
Worker	1.2943	1.6921				0.0331	5.1679		0.0307	1.3924						4,567.160 9
Total	**2.1077**	**7.7700**				**0.1378**	**5.9804**		**0.1270**	**1.6906**						**6,935.265 7**

3.5 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.8931	17.3403				0.9549	0.9549		0.8979	0.8979						2,555.646 2
Total	**1.8931**	**17.3403**				**0.9549**	**0.9549**		**0.8979**	**0.8979**						**2,555.646 2**

3.5 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.7493	5.0607				0.0943	0.8023		0.0868	0.2887						2,365.1929
Worker	1.2152	1.5801				0.0332	5.1679		0.0308	1.3925						4,491.1407
Total	**1.9645**	**6.6408**				**0.1275**	**5.9703**		**0.1175**	**1.6812**						**6,856.3336**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.8931	17.3403				0.9549	0.9549		0.8979	0.8979						2,555.6462
Total	**1.8931**	**17.3403**				**0.9549**	**0.9549**		**0.8979**	**0.8979**						**2,555.6462**

3.5 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.7493	5.0607				0.0943	0.8023		0.0868	0.2887						2,365.1929
Worker	1.2152	1.5801				0.0332	5.1679		0.0308	1.3925						4,491.1407
Total	**1.9645**	**6.6408**				**0.1275**	**5.9703**		**0.1175**	**1.6812**						**6,856.3336**

3.5 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6992	15.5364				0.8057	0.8057		0.7581	0.7581						2,556.5286
Total	**1.6992**	**15.5364**				**0.8057**	**0.8057**		**0.7581**	**0.7581**						**2,556.5286**

3.5 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.7282	4.5103				0.0925	0.8006		0.0851	0.2871						2,363.955 2
Worker	1.1446	1.4835				0.0333	5.1680		0.0308	1.3925						4,422.319 0
Total	**1.8728**	**5.9938**				**0.1257**	**5.9687**		**0.1159**	**1.6796**						**6,786.274 2**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6992	15.5364				0.8057	0.8057		0.7581	0.7581						2,556.528 6
Total	**1.6992**	**15.5364**				**0.8057**	**0.8057**		**0.7581**	**0.7581**						**2,556.528 6**

3.5 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.7282	4.5103				0.0925	0.8006		0.0851	0.2871						2,363.955 2
Worker	1.1446	1.4835				0.0333	5.1680		0.0308	1.3925						4,422.319 0
Total	**1.8728**	**5.9938**				**0.1257**	**5.9687**		**0.1159**	**1.6796**						**6,786.274 2**

3.5 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5661	14.3126				0.6967	0.6967		0.6557	0.6557						2,557.319 1
Total	**1.5661**	**14.3126**				**0.6967**	**0.6967**		**0.6557**	**0.6557**						**2,557.319 1**

3.5 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.6825	4.0589				0.0868	0.7952		0.0799	0.2820						2,361.792 8
Worker	1.0806	1.3994				0.0334	5.1681		0.0310	1.3926						4,360.789 5
Total	**1.7631**	**5.4583**				**0.1202**	**5.9633**		**0.1108**	**1.6746**						**6,722.582 3**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5661	14.3126				0.6967	0.6967		0.6557	0.6557						2,557.319 1
Total	**1.5661**	**14.3126**				**0.6967**	**0.6967**		**0.6557**	**0.6557**						**2,557.319 1**

3.5 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.6825	4.0589				0.0868	0.7952		0.0799	0.2820						2,361.792 8
Worker	1.0806	1.3994				0.0334	5.1681		0.0310	1.3926						4,360.789 5
Total	**1.7631**	**5.4583**				**0.1202**	**5.9633**		**0.1108**	**1.6746**						**6,722.582 3**

3.5 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4653	13.3774				0.6106	0.6106		0.5744	0.5744						2,557.734 9
Total	**1.4653**	**13.3774**				**0.6106**	**0.6106**		**0.5744**	**0.5744**						**2,557.734 9**

3.5 Building Construction - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.6687	4.0130				0.0871	0.7956		0.0802	0.2823						2,362.7534
Worker	1.0243	1.3277				0.0335	5.1683		0.0311	1.3928						4,306.4427
Total	**1.6930**	**5.3407**				**0.1206**	**5.9639**		**0.1113**	**1.6751**						**6,669.1961**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4653	13.3774				0.6106	0.6106		0.5744	0.5744						2,557.7349
Total	**1.4653**	**13.3774**				**0.6106**	**0.6106**		**0.5744**	**0.5744**						**2,557.7349**

3.5 Building Construction - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.6687	4.0130				0.0871	0.7956		0.0802	0.2823						2,362.753 4
Worker	1.0243	1.3277				0.0335	5.1683		0.0311	1.3928						4,306.442 7
Total	**1.6930**	**5.3407**				**0.1206**	**5.9639**		**0.1113**	**1.6751**						**6,669.196 1**

3.5 Building Construction - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3615	12.4097				0.5250	0.5250		0.4939	0.4939						2,558.438 6
Total	**1.3615**	**12.4097**				**0.5250**	**0.5250**		**0.4939**	**0.4939**						**2,558.438 6**

3.5 Building Construction - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.6573	3.9710				0.0873	0.7959		0.0804	0.2825						2,363.561 0
Worker	0.9789	1.2684				0.0338	5.1685		0.0313	1.3930						4,259.146 3
Total	**1.6362**	**5.2393**				**0.1211**	**5.9645**		**0.1117**	**1.6755**						**6,622.707 3**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3615	12.4097				0.5250	0.5250		0.4939	0.4939						2,558.438 6
Total	**1.3615**	**12.4097**				**0.5250**	**0.5250**		**0.4939**	**0.4939**						**2,558.438 6**

3.5 Building Construction - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.6573	3.9710				0.0873	0.7959		0.0804	0.2825						2,363.561 0
Worker	0.9789	1.2684				0.0338	5.1685		0.0313	1.3930						4,259.146 3
Total	**1.6362**	**5.2393**				**0.1211**	**5.9645**		**0.1117**	**1.6755**						**6,622.707 3**

3.5 Building Construction - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3615	12.4097				0.5250	0.5250		0.4939	0.4939						2,558.438 6
Total	**1.3615**	**12.4097**				**0.5250**	**0.5250**		**0.4939**	**0.4939**						**2,558.438 6**

3.5 Building Construction - 2026

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.6491	3.9266				0.0873	0.7960		0.0803	0.2825						2,364.300 6
Worker	0.9392	1.2190				0.0341	5.1688		0.0316	1.3933						4,220.639 9
Total	**1.5883**	**5.1456**				**0.1213**	**5.9648**		**0.1119**	**1.6758**						**6,584.940 6**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3615	12.4097				0.5250	0.5250		0.4939	0.4939						2,558.438 6
Total	**1.3615**	**12.4097**				**0.5250**	**0.5250**		**0.4939**	**0.4939**						**2,558.438 6**

3.5 Building Construction - 2026

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.6491	3.9266				0.0873	0.7960		0.0803	0.2825						2,364.300 6
Worker	0.9392	1.2190				0.0341	5.1688		0.0316	1.3933						4,220.639 9
Total	**1.5883**	**5.1456**				**0.1213**	**5.9648**		**0.1119**	**1.6758**						**6,584.940 6**

3.5 Building Construction - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3615	12.4097				0.5250	0.5250		0.4939	0.4939						2,558.438 6
Total	**1.3615**	**12.4097**				**0.5250**	**0.5250**		**0.4939**	**0.4939**						**2,558.438 6**

3.5 Building Construction - 2027

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.6448	3.8918				0.0874	0.7962		0.0804	0.2827						2,365.0446
Worker	0.9022	1.1747				0.0343	5.1691		0.0319	1.3935						4,185.6547
Total	**1.5471**	**5.0666**				**0.1217**	**5.9653**		**0.1122**	**1.6762**						**6,550.6992**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3615	12.4097				0.5250	0.5250		0.4939	0.4939						2,558.4386
Total	**1.3615**	**12.4097**				**0.5250**	**0.5250**		**0.4939**	**0.4939**						**2,558.4386**

3.5 Building Construction - 2027

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.6448	3.8918				0.0874	0.7962		0.0804	0.2827						2,365.044 6
Worker	0.9022	1.1747				0.0343	5.1691		0.0319	1.3935						4,185.654 7
Total	**1.5471**	**5.0666**				**0.1217**	**5.9653**		**0.1122**	**1.6762**						**6,550.699 2**

3.5 Building Construction - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3615	12.4097				0.5250	0.5250		0.4939	0.4939						2,558.438 6
Total	**1.3615**	**12.4097**				**0.5250**	**0.5250**		**0.4939**	**0.4939**						**2,558.438 6**

3.5 Building Construction - 2028

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.6399	3.8610				0.0874	0.7963		0.0804	0.2827						2,365.6396
Worker	0.8681	1.1348				0.0346	5.1693		0.0321	1.3938						4,155.7138
Total	**1.5079**	**4.9958**				**0.1219**	**5.9656**		**0.1124**	**1.6765**						**6,521.3534**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3615	12.4097				0.5250	0.5250		0.4939	0.4939						2,558.4386
Total	**1.3615**	**12.4097**				**0.5250**	**0.5250**		**0.4939**	**0.4939**						**2,558.4386**

3.5 Building Construction - 2028

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.6399	3.8610				0.0874	0.7963		0.0804	0.2827						2,365.639 6
Worker	0.8681	1.1348				0.0346	5.1693		0.0321	1.3938						4,155.713 8
Total	**1.5079**	**4.9958**				**0.1219**	**5.9656**		**0.1124**	**1.6765**						**6,521.353 4**

3.5 Building Construction - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3615	12.4097				0.5250	0.5250		0.4939	0.4939						2,558.438 6
Total	**1.3615**	**12.4097**				**0.5250**	**0.5250**		**0.4939**	**0.4939**						**2,558.438 6**

3.5 Building Construction - 2029

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.6349	3.8345				0.0873	0.7964		0.0804	0.2827						2,366.153 0
Worker	0.8334	1.0960				0.0347	5.1695		0.0322	1.3939						4,130.098 4
Total	**1.4683**	**4.9305**				**0.1221**	**5.9659**		**0.1126**	**1.6766**						**6,496.251 3**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3615	12.4097				0.5250	0.5250		0.4939	0.4939						2,558.438 6
Total	**1.3615**	**12.4097**				**0.5250**	**0.5250**		**0.4939**	**0.4939**						**2,558.438 6**

3.5 Building Construction - 2029

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.6349	3.8345				0.0873	0.7964		0.0804	0.2827						2,366.153 0
Worker	0.8334	1.0960				0.0347	5.1695		0.0322	1.3939						4,130.098 4
Total	**1.4683**	**4.9305**				**0.1221**	**5.9659**		**0.1126**	**1.6766**						**6,496.251 3**

3.5 Building Construction - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3041	7.9179				0.1476	0.1476		0.1476	0.1476						2,887.261 7
Total	**1.3041**	**7.9179**				**0.1476**	**0.1476**		**0.1476**	**0.1476**						**2,887.261 7**

3.5 Building Construction - 2030

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.6312	3.8095				0.0873	0.7965		0.0803	0.2828						2,366.651 9
Worker	0.8011	1.0609				0.0349	5.1696		0.0323	1.3940						4,108.450 5
Total	**1.4323**	**4.8704**				**0.1222**	**5.9661**		**0.1127**	**1.6768**						**6,475.102 4**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3041	7.9179				0.1476	0.1476		0.1476	0.1476						2,887.261 7
Total	**1.3041**	**7.9179**				**0.1476**	**0.1476**		**0.1476**	**0.1476**						**2,887.261 7**

3.5 Building Construction - 2030

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.6312	3.8095				0.0873	0.7965		0.0803	0.2828						2,366.6519
Worker	0.8011	1.0609				0.0349	5.1696		0.0323	1.3940						4,108.4505
Total	**1.4323**	**4.8704**				**0.1222**	**5.9661**		**0.1127**	**1.6768**						**6,475.1024**

3.5 Building Construction - 2031

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3041	7.9179				0.1476	0.1476		0.1476	0.1476						2,887.2617
Total	**1.3041**	**7.9179**				**0.1476**	**0.1476**		**0.1476**	**0.1476**						**2,887.2617**

3.5 Building Construction - 2031

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.6286	3.7902				0.0874	0.7966		0.0804	0.2828						2,367.320 4
Worker	0.7698	1.0276				0.0349	5.1697		0.0324	1.3941						4,090.302 2
Total	**1.3983**	**4.8179**				**0.1223**	**5.9663**		**0.1128**	**1.6769**						**6,457.622 6**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3041	7.9179				0.1476	0.1476		0.1476	0.1476						2,887.261 7
Total	**1.3041**	**7.9179**				**0.1476**	**0.1476**		**0.1476**	**0.1476**						**2,887.261 7**

3.5 Building Construction - 2031

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.6286	3.7902				0.0874	0.7966		0.0804	0.2828						2,367.3204
Worker	0.7698	1.0276				0.0349	5.1697		0.0324	1.3941						4,090.3022
Total	**1.3983**	**4.8179**				**0.1223**	**5.9663**		**0.1128**	**1.6769**						**6,457.6226**

3.6 Paving - 2031

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3549	6.9800				0.3234	0.3234		0.3234	0.3234						2,602.5460
Paving	0.0000					0.0000	0.0000		0.0000	0.0000						0.0000
Total	**1.3549**	**6.9800**				**0.3234**	**0.3234**		**0.3234**	**0.3234**						**2,602.5460**

3.6 Paving - 2031

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	0.0287	0.0383				1.3000e-003	0.1929		1.2100e-003	0.0520						152.6232
Total	**0.0287**	**0.0383**				**1.3000e-003**	**0.1929**		**1.2100e-003**	**0.0520**						**152.6232**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3549	6.9800				0.3234	0.3234		0.3234	0.3234						2,602.546 0
Paving	0.0000					0.0000	0.0000		0.0000	0.0000						0.0000
Total	**1.3549**	**6.9800**				**0.3234**	**0.3234**		**0.3234**	**0.3234**						**2,602.546 0**

3.6 Paving - 2031

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	0.0287	0.0383				1.3000e-003	0.1929		1.2100e-003	0.0520						152.6232
Total	**0.0287**	**0.0383**				**1.3000e-003**	**0.1929**		**1.2100e-003**	**0.0520**						**152.6232**

3.6 Paving - 2032

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3549	6.9800				0.3234	0.3234		0.3234	0.3234						2,602.546 0
Paving	0.0000					0.0000	0.0000		0.0000	0.0000						0.0000
Total	**1.3549**	**6.9800**				**0.3234**	**0.3234**		**0.3234**	**0.3234**						**2,602.546 0**

3.6 Paving - 2032

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	0.0277	0.0373				1.3000e-003	0.1929		1.2100e-003	0.0520						152.0602
Total	**0.0277**	**0.0373**				**1.3000e-003**	**0.1929**		**1.2100e-003**	**0.0520**						**152.0602**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3549	6.9800				0.3234	0.3234		0.3234	0.3234						2,602.5460
Paving	0.0000					0.0000	0.0000		0.0000	0.0000						0.0000
Total	**1.3549**	**6.9800**				**0.3234**	**0.3234**		**0.3234**	**0.3234**						**2,602.5460**

3.6 Paving - 2032

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	0.0277	0.0373				1.3000e-003	0.1929		1.2100e-003	0.0520						152.0602
Total	**0.0277**	**0.0373**				**1.3000e-003**	**0.1929**		**1.2100e-003**	**0.0520**						**152.0602**

3.7 Architectural Coating - 2032

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	146.5770					0.0000	0.0000		0.0000	0.0000						0.0000
Off-Road	0.1308	0.8563				0.0203	0.0203		0.0203	0.0203						281.6873
Total	**146.7078**	**0.8563**				**0.0203**	**0.0203**		**0.0203**	**0.0203**						**281.6873**

3.7 Architectural Coating - 2032

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	0.1476	0.1990				6.9600e-003	1.0288		6.4500e-003	0.2774						810.9880
Total	**0.1476**	**0.1990**				**6.9600e-003**	**1.0288**		**6.4500e-003**	**0.2774**						**810.9880**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	146.5770					0.0000	0.0000		0.0000	0.0000						0.0000
Off-Road	0.1308	0.8563				0.0203	0.0203		0.0203	0.0203						281.6873
Total	**146.7078**	**0.8563**				**0.0203**	**0.0203**		**0.0203**	**0.0203**						**281.6873**

3.7 Architectural Coating - 2032

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	0.1476	0.1990				6.9600e-003	1.0288		6.4500e-003	0.2774						810.9880
Total	**0.1476**	**0.1990**				**6.9600e-003**	**1.0288**		**6.4500e-003**	**0.2774**						**810.9880**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	37.2555	95.2442				1.4081	59.5820		1.2962	16.8567						76,887.6039
Unmitigated	37.2555	95.2442				1.4081	59.5820		1.2962	16.8567						76,887.6039

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	1,667.27	1,811.48	1535.71	5,762,640	5,762,640
General Office Building	4,148.50	893.00	369.26	8,678,752	8,678,752
Single Family Housing	1,014.42	1,068.48	929.62	3,487,215	3,487,215
Single Family Housing	1,636.47	1,723.68	1499.67	5,625,602	5,625,602
Total	8,466.66	5,496.64	4,334.26	23,554,209	23,554,209

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	16.80	7.10	7.90	32.90	18.00	49.10	86	11	3
General Office Building	14.70	6.60	6.60	33.00	48.00	19.00	77	19	4
Single Family Housing	16.80	7.10	7.90	32.90	18.00	49.10	86	11	3
Single Family Housing	16.80	7.10	7.90	32.90	18.00	49.10	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.462115	0.061823	0.181510	0.153742	0.057112	0.007288	0.019722	0.042680	0.001823	0.001665	0.006988	0.000686	0.002845

4.4 Fleet Mix

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.5176	4.5068				0.3576	0.3576		0.3576	0.3576						5,681.1570
NaturalGas Unmitigated	0.5176	4.5068				0.3576	0.3576		0.3576	0.3576						5,681.1570

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Low Rise	9403.32	0.1014	0.8666				0.0701	0.0701		0.0701	0.0701						1,113.0060
General Office Building	14194.3	0.1531	1.3916				0.1058	0.1058		0.1058	0.1058						1,680.0798
Single Family Housing	15062.9	0.1624	1.3882				0.1122	0.1122		0.1122	0.1122						1,782.8887
Single Family Housing	9337.23	0.1007	0.8605				0.0696	0.0696		0.0696	0.0696						1,105.1825
Total		**0.5176**	**4.5068**				**0.3576**	**0.3576**		**0.3576**	**0.3576**						**5,681.1570**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Low Rise	9.40332	0.1014	0.8666				0.0701	0.0701		0.0701	0.0701						1,113.0060
General Office Building	14.1943	0.1531	1.3916				0.1058	0.1058		0.1058	0.1058						1,680.0798
Single Family Housing	15.0629	0.1624	1.3882				0.1122	0.1122		0.1122	0.1122						1,782.8887
Single Family Housing	9.33723	0.1007	0.8605				0.0696	0.0696		0.0696	0.0696						1,105.1825
Total		**0.5176**	**4.5068**				**0.3576**	**0.3576**		**0.3576**	**0.3576**						**5,681.1570**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1,269.3723	17.2675				213.9912	213.9912		213.9849	213.9849						32,872.2366
Unmitigated	1,269.3723	17.2675				213.9912	213.9912		213.9849	213.9849						32,872.2366

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	8.8348					0.0000	0.0000		0.0000	0.0000						0.0000
Consumer Products	24.1476					0.0000	0.0000		0.0000	0.0000						0.0000
Hearth	1,235.0287	16.7560				213.7507	213.7507		213.7444	213.7444						32,791.7782
Landscaping	1.3611	0.5115				0.2405	0.2405		0.2405	0.2405						80.4585
Total	**1,269.3723**	**17.2675**				**213.9912**	**213.9912**		**213.9849**	**213.9849**						**32,872.2366**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	8.8348					0.0000	0.0000		0.0000	0.0000						0.0000
Consumer Products	24.1476					0.0000	0.0000		0.0000	0.0000						0.0000
Hearth	1,235.028 7	16.7560				213.7507	213.7507		213.7444	213.7444						32,791.77 82
Landscaping	1.3611	0.5115				0.2405	0.2405		0.2405	0.2405						80.4585
Total	**1,269.372 3**	**17.2675**				**213.9912**	**213.9912**		**213.9849**	**213.9849**						**32,872.23 66**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

FolsomHeights_Adopted(Original)

Sacramento Valley Air Basin, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	376.79	1000sqft	34.50	376,794.00	0
Apartments Low Rise	253.00	Dwelling Unit	27.94	253,000.00	491
Single Family Housing	106.00	Dwelling Unit	35.03	190,800.00	310
Single Family Housing	171.00	Dwelling Unit	31.02	307,800.00	499

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	65
Climate Zone	6			**Operational Year**	2018
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	590.31	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Running defaults for operational modeling for 2018.

Land Use - Target DU, Lot Acreages, and Population Based on Table 2-1.

Table Name	Column Name	Default Value	New Value
tblLandUse	LotAcreage	8.65	34.50
tblLandUse	LotAcreage	15.81	27.94
tblLandUse	LotAcreage	34.42	35.03
tblLandUse	LotAcreage	55.52	31.02
tblLandUse	Population	724.00	491.00
tblLandUse	Population	303.00	310.00
tblLandUse	Population	489.00	499.00
tblProjectCharacteristics	OperationalYear	2014	2018
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	4.9074	51.8791				2.7558	21.0520		2.5353	12.5270						4,231.2416
2018	5.3557	59.6586				2.7897	20.6631		2.5665	12.1692						6,469.7641
2019	4.9503	54.3113				2.5066	11.4354		2.3061	5.9703						9,199.0535
2020	4.2117	27.6498				1.2520	7.0947		1.1747	2.7383						8,916.5632
2021	3.8337	24.6801				1.0836	6.9264		1.0165	2.5801						8,846.5808
2022	3.5427	22.1672				0.9326	6.7756		0.8751	2.4388						8,785.2724
2023	3.2908	20.3508				0.8178	6.6608		0.7673	2.3310						8,729.2498
2024	3.1198	19.2740				0.7320	6.5753		0.6864	2.2502						8,682.3404
2025	2.9578	18.1851				0.6469	6.4903		0.6063	2.1702						8,641.7952
2026	2.9103	18.0746				0.6472	6.4907		0.6066	2.1705						8,608.3180
2027	2.8711	17.9812				0.6475	6.4911		0.6069	2.1709						8,577.8728
2028	2.8335	17.8974				0.6477	6.4915		0.6071	2.1711						8,551.6992
2029	2.7970	17.8199				0.6479	6.4917		0.6072	2.1713						8,529.2125
2030	2.7094	13.2569				0.2706	6.1145		0.2610	1.8251						8,839.0456
2031	2.6814	13.1941				0.3247	6.1147		0.3246	1.8253						8,823.3787
2032	146.8340	7.0259				0.3247	1.0491		0.3246	0.3754						2,735.9580
Total	**199.8064**	**403.4060**				**17.0273**	**132.9167**		**15.8722**	**57.8848**						**127,167.3457**

2.1 Overall Construction (Maximum Daily Emission)

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	4.9074	51.8791				2.7558	21.0520		2.5353	12.5270						4,231.241 6
2018	5.3557	59.6586				2.7897	20.6631		2.5665	12.1692						6,469.764 1
2019	4.9503	54.3113				2.5066	11.4354		2.3061	5.9703						9,199.053 5
2020	4.2117	27.6498				1.2520	7.0947		1.1747	2.7383						8,916.563 2
2021	3.8337	24.6801				1.0836	6.9264		1.0165	2.5801						8,846.580 8
2022	3.5427	22.1672				0.9326	6.7756		0.8751	2.4388						8,785.272 4
2023	3.2908	20.3508				0.8178	6.6608		0.7673	2.3310						8,729.249 8
2024	3.1198	19.2740				0.7320	6.5753		0.6864	2.2502						8,682.340 4
2025	2.9578	18.1851				0.6469	6.4903		0.6063	2.1702						8,641.795 2
2026	2.9103	18.0746				0.6472	6.4907		0.6066	2.1705						8,608.318 0
2027	2.8711	17.9812				0.6475	6.4911		0.6069	2.1709						8,577.872 8
2028	2.8335	17.8974				0.6477	6.4915		0.6071	2.1711						8,551.699 2
2029	2.7970	17.8199				0.6479	6.4917		0.6072	2.1713						8,529.212 5
2030	2.7094	13.2569				0.2706	6.1145		0.2610	1.8251						8,839.045 6
2031	2.6814	13.1941				0.3247	6.1147		0.3246	1.8253						8,823.378 7
2032	146.8340	7.0259				0.3247	1.0491		0.3246	0.3754						2,735.958 0
Total	**199.8064**	**403.4060**				**17.0273**	**132.9167**		**15.8722**	**57.8848**						**127,167.3 456**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	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

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1,269.3723	17.2675				213.9912	213.9912		213.9849	213.9849						32,872.2366
Energy	0.5176	4.5068				0.3576	0.3576		0.3576	0.3576						5,681.1570
Mobile	35.5160	107.1574				1.4156	59.5895		1.3031	16.8635						70,510.3925
Total	**1,305.4059**	**128.9317**				**215.7644**	**273.9383**		**215.6456**	**231.2060**						**109,063.7861**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1,269.3723	17.2675				213.9912	213.9912		213.9849	213.9849						32,872.2366
Energy	0.5176	4.5068				0.3576	0.3576		0.3576	0.3576						5,681.1570
Mobile	35.5160	107.1574				1.4156	59.5895		1.3031	16.8635						70,510.3925
Total	**1,305.4059**	**128.9317**				**215.7644**	**273.9383**		**215.6456**	**231.2060**						**109,063.7861**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2017	10/6/2017	5	200	
2	Site Preparation	Site Preparation	10/7/2017	3/23/2018	5	120	
3	Grading	Grading	3/24/2018	5/31/2019	5	310	
4	Building Construction	Building Construction	6/1/2019	4/18/2031	5	3100	
5	Paving	Paving	4/19/2031	2/20/2032	5	220	
6	Architectural Coating	Architectural Coating	2/21/2032	12/24/2032	5	220	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 775

Acres of Paving: 0

Residential Indoor: 1,521,990; Residential Outdoor: 507,330; Non-Residential Indoor: 565,191; Non-Residential Outdoor: 188,397 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	162	0.38
Demolition	Rubber Tired Dozers	2	8.00	255	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	402.00	118.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	80.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.0482	42.6971				2.1252	2.1252		1.9797	1.9797						4,059.7211
Total	**4.0482**	**42.6971**				**2.1252**	**2.1252**		**1.9797**	**1.9797**						**4,059.7211**

3.2 Demolition - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	0.0577	0.1047				1.3100e-003	0.1929		1.2000e-003	0.0520						168.6653
Total	**0.0577**	**0.1047**				**1.3100e-003**	**0.1929**		**1.2000e-003**	**0.0520**						**168.6653**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.0482	42.6971				2.1252	2.1252		1.9797	1.9797						4,059.7211
Total	**4.0482**	**42.6971**				**2.1252**	**2.1252**		**1.9797**	**1.9797**						**4,059.7211**

3.2 Demolition - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	0.0577	0.1047				1.3100e-003	0.1929		1.2000e-003	0.0520						168.6653
Total	**0.0577**	**0.1047**				**1.3100e-003**	**0.1929**		**1.2000e-003**	**0.0520**						**168.6653**

3.3 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust						0.0000	18.0663		0.0000	9.9307						0.0000
Off-Road	4.8382	51.7535				2.7542	2.7542		2.5339	2.5339						4,028.8432
Total	**4.8382**	**51.7535**				**2.7542**	**20.8205**		**2.5339**	**12.4646**						**4,028.8432**

3.3 Site Preparation - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	0.0692	0.1257				1.5700e-003	0.2315		1.4400e-003	0.0624						202.3984
Total	**0.0692**	**0.1257**				**1.5700e-003**	**0.2315**		**1.4400e-003**	**0.0624**						**202.3984**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust						0.0000	18.0663		0.0000	9.9307						0.0000
Off-Road	4.8382	51.7535				2.7542	2.7542		2.5339	2.5339						4,028.8432
Total	**4.8382**	**51.7535**				**2.7542**	**20.8205**		**2.5339**	**12.4646**						**4,028.8432**

3.3 Site Preparation - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	0.0692	0.1257				1.5700e-003	0.2315		1.4400e-003	0.0624						202.3984
Total	**0.0692**	**0.1257**				**1.5700e-003**	**0.2315**		**1.4400e-003**	**0.0624**						**202.3984**

3.3 Site Preparation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust						0.0000	18.0663		0.0000	9.9307						0.0000
Off-Road	4.2921	45.6088				2.3654	2.3654		2.1762	2.1762						3,965.5297
Total	**4.2921**	**45.6088**				**2.3654**	**20.4317**		**2.1762**	**12.1069**						**3,965.5297**

3.3 Site Preparation - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	0.0595	0.1123				1.5200e-003	0.2314		1.4000e-003	0.0624						194.7089
Total	**0.0595**	**0.1123**				**1.5200e-003**	**0.2314**		**1.4000e-003**	**0.0624**						**194.7089**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust						0.0000	18.0663		0.0000	9.9307						0.0000
Off-Road	4.2921	45.6088				2.3654	2.3654		2.1762	2.1762						3,965.5297
Total	**4.2921**	**45.6088**				**2.3654**	**20.4317**		**2.1762**	**12.1069**						**3,965.5297**

3.3 Site Preparation - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	0.0595	0.1123				1.5200e-003	0.2314		1.4000e-003	0.0624						194.7089
Total	**0.0595**	**0.1123**				**1.5200e-003**	**0.2314**		**1.4000e-003**	**0.0624**						**194.7089**

3.4 Grading - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust						0.0000	8.6733		0.0000	3.5965						0.0000
Off-Road	5.2895	59.5338				2.7880	2.7880		2.5650	2.5650						6,253.420 9
Total	**5.2895**	**59.5338**				**2.7880**	**11.4614**		**2.5650**	**6.1615**						**6,253.420 9**

3.4 Grading - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	0.0662	0.1248				1.6900e-003	0.2572		1.5600e-003	0.0693						216.3432
Total	**0.0662**	**0.1248**				**1.6900e-003**	**0.2572**		**1.5600e-003**	**0.0693**						**216.3432**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust						0.0000	8.6733		0.0000	3.5965						0.0000
Off-Road	5.2895	59.5338				2.7880	2.7880		2.5650	2.5650						6,253.4209
Total	**5.2895**	**59.5338**				**2.7880**	**11.4614**		**2.5650**	**6.1615**						**6,253.4209**

3.4 Grading - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	0.0662	0.1248				1.6900e-003	0.2572		1.5600e-003	0.0693						216.3432
Total	**0.0662**	**0.1248**				**1.6900e-003**	**0.2572**		**1.5600e-003**	**0.0693**						**216.3432**

3.4 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust						0.0000	8.6733		0.0000	3.5965						0.0000
Off-Road	4.8912	54.1978				2.5049	2.5049		2.3045	2.3045						6,151.9167
Total	**4.8912**	**54.1978**				**2.5049**	**11.1783**		**2.3045**	**5.9010**						**6,151.9167**

3.4 Grading - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	0.0591	0.1135				1.6600e-003	0.2571		1.5400e-003	0.0693						207.9094
Total	**0.0591**	**0.1135**				**1.6600e-003**	**0.2571**		**1.5400e-003**	**0.0693**						**207.9094**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust						0.0000	8.6733		0.0000	3.5965						0.0000
Off-Road	4.8912	54.1978				2.5049	2.5049		2.3045	2.3045						6,151.9167
Total	**4.8912**	**54.1978**				**2.5049**	**11.1783**		**2.3045**	**5.9010**						**6,151.9167**

3.4 Grading - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	0.0591	0.1135				1.6600e-003	0.2571		1.5400e-003	0.0693						207.9094
Total	**0.0591**	**0.1135**				**1.6600e-003**	**0.2571**		**1.5400e-003**	**0.0693**						**207.9094**

3.5 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3516	20.9650				1.2850	1.2850		1.2083	1.2083						2,593.9479
Total	**2.3516**	**20.9650**				**1.2850**	**1.2850**		**1.2083**	**1.2083**						**2,593.9479**

3.5 Building Construction - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	1.1780	7.4955				0.1188	0.8266		0.1092	0.3111						2,403.1111
Worker	1.1880	2.2816				0.0333	5.1681		0.0309	1.3926						4,178.978 9
Total	**2.3660**	**9.7771**				**0.1521**	**5.9946**		**0.1400**	**1.7036**						**6,582.090 0**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3516	20.9650				1.2850	1.2850		1.2083	1.2083						2,593.947 9
Total	**2.3516**	**20.9650**				**1.2850**	**1.2850**		**1.2083**	**1.2083**						**2,593.947 9**

3.5 Building Construction - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	1.1780	7.4955				0.1188	0.8266		0.1092	0.3111						2,403.1111
Worker	1.1880	2.2816				0.0333	5.1681		0.0309	1.3926						4,178.978 9
Total	**2.3660**	**9.7771**				**0.1521**	**5.9946**		**0.1400**	**1.7036**						**6,582.090 0**

3.5 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1113	19.0839				1.1128	1.1128		1.0465	1.0465						2,555.488 0
Total	**2.1113**	**19.0839**				**1.1128**	**1.1128**		**1.0465**	**1.0465**						**2,555.488 0**

3.5 Building Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	1.0106	6.4632				0.1061	0.8140		0.0976	0.2995						2,347.952 7
Worker	1.0898	2.1027				0.0331	5.1679		0.0307	1.3924						4,013.122 5
Total	**2.1004**	**8.5659**				**0.1392**	**5.9818**		**0.1283**	**1.6918**						**6,361.075 2**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1113	19.0839				1.1128	1.1128		1.0465	1.0465						2,555.488 0
Total	**2.1113**	**19.0839**				**1.1128**	**1.1128**		**1.0465**	**1.0465**						**2,555.488 0**

3.5 Building Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	1.0106	6.4632				0.1061	0.8140		0.0976	0.2995						2,347.952 7
Worker	1.0898	2.1027				0.0331	5.1679		0.0307	1.3924						4,013.122 5
Total	**2.1004**	**8.5659**				**0.1392**	**5.9818**		**0.1283**	**1.6918**						**6,361.075 2**

3.5 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.8931	17.3403				0.9549	0.9549		0.8979	0.8979						2,555.646 2
Total	**1.8931**	**17.3403**				**0.9549**	**0.9549**		**0.8979**	**0.8979**						**2,555.646 2**

3.5 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.9179	5.3783				0.0955	0.8036		0.0879	0.2898						2,345.0300
Worker	1.0227	1.9616				0.0332	5.1679		0.0308	1.3925						3,945.9047
Total	**1.9406**	**7.3399**				**0.1287**	**5.9715**		**0.1187**	**1.6823**						**6,290.9347**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.8931	17.3403				0.9549	0.9549		0.8979	0.8979						2,555.6462
Total	**1.8931**	**17.3403**				**0.9549**	**0.9549**		**0.8979**	**0.8979**						**2,555.6462**

3.5 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.9179	5.3783				0.0955	0.8036		0.0879	0.2898						2,345.030 0
Worker	1.0227	1.9616				0.0332	5.1679		0.0308	1.3925						3,945.904 7
Total	**1.9406**	**7.3399**				**0.1287**	**5.9715**		**0.1187**	**1.6823**						**6,290.934 7**

3.5 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6992	15.5364				0.8057	0.8057		0.7581	0.7581						2,556.528 6
Total	**1.6992**	**15.5364**				**0.8057**	**0.8057**		**0.7581**	**0.7581**						**2,556.528 6**

3.5 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.8804	4.7911				0.0936	0.8018		0.0862	0.2882						2,343.7941
Worker	0.9631	1.8397				0.0333	5.1680		0.0308	1.3925						3,884.9497
Total	**1.8435**	**6.6308**				**0.1269**	**5.9698**		**0.1170**	**1.6807**						**6,228.7438**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6992	15.5364				0.8057	0.8057		0.7581	0.7581						2,556.5286
Total	**1.6992**	**15.5364**				**0.8057**	**0.8057**		**0.7581**	**0.7581**						**2,556.5286**

3.5 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.8804	4.7911				0.0936	0.8018		0.0862	0.2882						2,343.7941
Worker	0.9631	1.8397				0.0333	5.1680		0.0308	1.3925						3,884.9497
Total	**1.8435**	**6.6308**				**0.1269**	**5.9698**		**0.1170**	**1.6807**						**6,228.7438**

3.5 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5661	14.3126				0.6967	0.6967		0.6557	0.6557						2,557.3191
Total	**1.5661**	**14.3126**				**0.6967**	**0.6967**		**0.6557**	**0.6557**						**2,557.3191**

3.5 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.8154	4.3049				0.0877	0.7960		0.0807	0.2827						2,341.587 5
Worker	0.9093	1.7333				0.0334	5.1681		0.0310	1.3926						3,830.343 2
Total	**1.7247**	**6.0382**				**0.1210**	**5.9641**		**0.1116**	**1.6754**						**6,171.930 7**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5661	14.3126				0.6967	0.6967		0.6557	0.6557						2,557.319 1
Total	**1.5661**	**14.3126**				**0.6967**	**0.6967**		**0.6557**	**0.6557**						**2,557.319 1**

3.5 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.8154	4.3049				0.0877	0.7960		0.0807	0.2827						2,341.587 5
Worker	0.9093	1.7333				0.0334	5.1681		0.0310	1.3926						3,830.343 2
Total	**1.7247**	**6.0382**				**0.1210**	**5.9641**		**0.1116**	**1.6754**						**6,171.930 7**

3.5 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4653	13.3774				0.6106	0.6106		0.5744	0.5744						2,557.734 9
Total	**1.4653**	**13.3774**				**0.6106**	**0.6106**		**0.5744**	**0.5744**						**2,557.734 9**

3.5 Building Construction - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.7921	4.2540				0.0880	0.7964		0.0809	0.2831						2,342.5430
Worker	0.8624	1.6427				0.0335	5.1683		0.0311	1.3928						3,782.0625
Total	**1.6545**	**5.8966**				**0.1215**	**5.9647**		**0.1120**	**1.6759**						**6,124.6055**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4653	13.3774				0.6106	0.6106		0.5744	0.5744						2,557.7349
Total	**1.4653**	**13.3774**				**0.6106**	**0.6106**		**0.5744**	**0.5744**						**2,557.7349**

3.5 Building Construction - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.7921	4.2540				0.0880	0.7964		0.0809	0.2831						2,342.5430
Worker	0.8624	1.6427				0.0335	5.1683		0.0311	1.3928						3,782.0625
Total	**1.6545**	**5.8966**				**0.1215**	**5.9647**		**0.1120**	**1.6759**						**6,124.6055**

3.5 Building Construction - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3615	12.4097				0.5250	0.5250		0.4939	0.4939						2,558.4386
Total	**1.3615**	**12.4097**				**0.5250**	**0.5250**		**0.4939**	**0.4939**						**2,558.4386**

3.5 Building Construction - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.7719	4.2077				0.0882	0.7968		0.0811	0.2833						2,343.346 2
Worker	0.8245	1.5678				0.0338	5.1685		0.0313	1.3930						3,740.010 4
Total	**1.5963**	**5.7754**				**0.1219**	**5.9653**		**0.1124**	**1.6763**						**6,083.356 6**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3615	12.4097				0.5250	0.5250		0.4939	0.4939						2,558.438 6
Total	**1.3615**	**12.4097**				**0.5250**	**0.5250**		**0.4939**	**0.4939**						**2,558.438 6**

3.5 Building Construction - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.7719	4.2077				0.0882	0.7968		0.0811	0.2833						2,343.3462
Worker	0.8245	1.5678				0.0338	5.1685		0.0313	1.3930						3,740.0104
Total	**1.5963**	**5.7754**				**0.1219**	**5.9653**		**0.1124**	**1.6763**						**6,083.3566**

3.5 Building Construction - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3615	12.4097				0.5250	0.5250		0.4939	0.4939						2,558.4386
Total	**1.3615**	**12.4097**				**0.5250**	**0.5250**		**0.4939**	**0.4939**						**2,558.4386**

3.5 Building Construction - 2026

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.7573	4.1592				0.0881	0.7968		0.0811	0.2833						2,344.0826
Worker	0.7916	1.5057				0.0341	5.1688		0.0316	1.3933						3,705.7969
Total	**1.5489**	**5.6649**				**0.1222**	**5.9657**		**0.1127**	**1.6766**						**6,049.8795**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3615	12.4097				0.5250	0.5250		0.4939	0.4939						2,558.4386
Total	**1.3615**	**12.4097**				**0.5250**	**0.5250**		**0.4939**	**0.4939**						**2,558.4386**

3.5 Building Construction - 2026

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.7573	4.1592				0.0881	0.7968		0.0811	0.2833						2,344.082 6
Worker	0.7916	1.5057				0.0341	5.1688		0.0316	1.3933						3,705.796 9
Total	**1.5489**	**5.6649**				**0.1222**	**5.9657**		**0.1127**	**1.6766**						**6,049.879 5**

3.5 Building Construction - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3615	12.4097				0.5250	0.5250		0.4939	0.4939						2,558.438 6
Total	**1.3615**	**12.4097**				**0.5250**	**0.5250**		**0.4939**	**0.4939**						**2,558.438 6**

3.5 Building Construction - 2027

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.7484	4.1215				0.0882	0.7970		0.0811	0.2834						2,344.823 8
Worker	0.7612	1.4500				0.0343	5.1691		0.0319	1.3935						3,674.610 5
Total	**1.5096**	**5.5715**				**0.1225**	**5.9661**		**0.1130**	**1.6770**						**6,019.434 3**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3615	12.4097				0.5250	0.5250		0.4939	0.4939						2,558.438 6
Total	**1.3615**	**12.4097**				**0.5250**	**0.5250**		**0.4939**	**0.4939**						**2,558.438 6**

3.5 Building Construction - 2027

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.7484	4.1215				0.0882	0.7970		0.0811	0.2834						2,344.8238
Worker	0.7612	1.4500				0.0343	5.1691		0.0319	1.3935						3,674.6105
Total	**1.5096**	**5.5715**				**0.1225**	**5.9661**		**0.1130**	**1.6770**						**6,019.4343**

3.5 Building Construction - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3615	12.4097				0.5250	0.5250		0.4939	0.4939						2,558.4386
Total	**1.3615**	**12.4097**				**0.5250**	**0.5250**		**0.4939**	**0.4939**						**2,558.4386**

3.5 Building Construction - 2028

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.7385	4.0881				0.0882	0.7971		0.0811	0.2835						2,345.4164
Worker	0.7335	1.3997				0.0346	5.1693		0.0321	1.3938						3,647.8443
Total	**1.4720**	**5.4877**				**0.1227**	**5.9665**		**0.1132**	**1.6772**						**5,993.2606**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3615	12.4097				0.5250	0.5250		0.4939	0.4939						2,558.4386
Total	**1.3615**	**12.4097**				**0.5250**	**0.5250**		**0.4939**	**0.4939**						**2,558.4386**

3.5 Building Construction - 2028

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.7385	4.0881				0.0882	0.7971		0.0811	0.2835						2,345.4164
Worker	0.7335	1.3997				0.0346	5.1693		0.0321	1.3938						3,647.8443
Total	**1.4720**	**5.4877**				**0.1227**	**5.9665**		**0.1132**	**1.6772**						**5,993.2606**

3.5 Building Construction - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3615	12.4097				0.5250	0.5250		0.4939	0.4939						2,558.4386
Total	**1.3615**	**12.4097**				**0.5250**	**0.5250**		**0.4939**	**0.4939**						**2,558.4386**

3.5 Building Construction - 2029

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.7297	4.0593				0.0882	0.7972		0.0811	0.2835						2,345.927 9
Worker	0.7059	1.3509				0.0347	5.1695		0.0322	1.3939						3,624.846 0
Total	**1.4355**	**5.4102**				**0.1229**	**5.9667**		**0.1133**	**1.6774**						**5,970.773 9**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3615	12.4097				0.5250	0.5250		0.4939	0.4939						2,558.438 6
Total	**1.3615**	**12.4097**				**0.5250**	**0.5250**		**0.4939**	**0.4939**						**2,558.438 6**

3.5 Building Construction - 2029

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.7297	4.0593				0.0882	0.7972		0.0811	0.2835						2,345.927 9
Worker	0.7059	1.3509				0.0347	5.1695		0.0322	1.3939						3,624.846 0
Total	**1.4355**	**5.4102**				**0.1229**	**5.9667**		**0.1133**	**1.6774**						**5,970.773 9**

3.5 Building Construction - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3041	7.9179				0.1476	0.1476		0.1476	0.1476						2,887.261 7
Total	**1.3041**	**7.9179**				**0.1476**	**0.1476**		**0.1476**	**0.1476**						**2,887.261 7**

3.5 Building Construction - 2030

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.7247	4.0323				0.0881	0.7973		0.0811	0.2835						2,346.4251
Worker	0.6806	1.3067				0.0349	5.1696		0.0323	1.3940						3,605.3588
Total	**1.4053**	**5.3390**				**0.1230**	**5.9669**		**0.1134**	**1.6775**						**5,951.7839**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3041	7.9179				0.1476	0.1476		0.1476	0.1476						2,887.2617
Total	**1.3041**	**7.9179**				**0.1476**	**0.1476**		**0.1476**	**0.1476**						**2,887.2617**

3.5 Building Construction - 2030

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.7247	4.0323				0.0881	0.7973		0.0811	0.2835						2,346.4251
Worker	0.6806	1.3067				0.0349	5.1696		0.0323	1.3940						3,605.3588
Total	**1.4053**	**5.3390**				**0.1230**	**5.9669**		**0.1134**	**1.6775**						**5,951.7839**

3.5 Building Construction - 2031

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3041	7.9179				0.1476	0.1476		0.1476	0.1476						2,887.2617
Total	**1.3041**	**7.9179**				**0.1476**	**0.1476**		**0.1476**	**0.1476**						**2,887.2617**

3.5 Building Construction - 2031

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.7212	4.0115				0.0882	0.7974		0.0811	0.2836						2,347.0918
Worker	0.6561	1.2647				0.0349	5.1697		0.0324	1.3941						3,589.0252
Total	**1.3773**	**5.2762**				**0.1231**	**5.9671**		**0.1135**	**1.6777**						**5,936.1170**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3041	7.9179				0.1476	0.1476		0.1476	0.1476						2,887.2617
Total	**1.3041**	**7.9179**				**0.1476**	**0.1476**		**0.1476**	**0.1476**						**2,887.2617**

3.5 Building Construction - 2031

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.7212	4.0115				0.0882	0.7974		0.0811	0.2836						2,347.091 8
Worker	0.6561	1.2647				0.0349	5.1697		0.0324	1.3941						3,589.025 2
Total	**1.3773**	**5.2762**				**0.1231**	**5.9671**		**0.1135**	**1.6777**						**5,936.117 0**

3.6 Paving - 2031

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3549	6.9800				0.3234	0.3234		0.3234	0.3234						2,602.546 0
Paving	0.0000					0.0000	0.0000		0.0000	0.0000						0.0000
Total	**1.3549**	**6.9800**				**0.3234**	**0.3234**		**0.3234**	**0.3234**						**2,602.546 0**

3.6 Paving - 2031

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	0.0245	0.0472				1.3000e-003	0.1929		1.2100e-003	0.0520						133.9189
Total	**0.0245**	**0.0472**				**1.3000e-003**	**0.1929**		**1.2100e-003**	**0.0520**						**133.9189**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3549	6.9800				0.3234	0.3234		0.3234	0.3234						2,602.5460
Paving	0.0000					0.0000	0.0000		0.0000	0.0000						0.0000
Total	**1.3549**	**6.9800**				**0.3234**	**0.3234**		**0.3234**	**0.3234**						**2,602.5460**

3.6 Paving - 2031

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	0.0245	0.0472				1.3000e-003	0.1929		1.2100e-003	0.0520						133.9189
Total	**0.0245**	**0.0472**				**1.3000e-003**	**0.1929**		**1.2100e-003**	**0.0520**						**133.9189**

3.6 Paving - 2032

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3549	6.9800				0.3234	0.3234		0.3234	0.3234						2,602.546 0
Paving	0.0000					0.0000	0.0000		0.0000	0.0000						0.0000
Total	**1.3549**	**6.9800**				**0.3234**	**0.3234**		**0.3234**	**0.3234**						**2,602.546 0**

3.6 Paving - 2032

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	0.0237	0.0459				1.3000e-003	0.1929		1.2100e-003	0.0520						133.4120
Total	**0.0237**	**0.0459**				**1.3000e-003**	**0.1929**		**1.2100e-003**	**0.0520**						**133.4120**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3549	6.9800				0.3234	0.3234		0.3234	0.3234						2,602.546 0
Paving	0.0000					0.0000	0.0000		0.0000	0.0000						0.0000
Total	**1.3549**	**6.9800**				**0.3234**	**0.3234**		**0.3234**	**0.3234**						**2,602.546 0**

3.6 Paving - 2032

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	0.0237	0.0459				1.3000e-003	0.1929		1.2100e-003	0.0520						133.4120
Total	**0.0237**	**0.0459**				**1.3000e-003**	**0.1929**		**1.2100e-003**	**0.0520**						**133.4120**

3.7 Architectural Coating - 2032

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	146.5770					0.0000	0.0000		0.0000	0.0000						0.0000
Off-Road	0.1308	0.8563				0.0203	0.0203		0.0203	0.0203						281.6873
Total	**146.7078**	**0.8563**				**0.0203**	**0.0203**		**0.0203**	**0.0203**						**281.6873**

3.7 Architectural Coating - 2032

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	0.1262	0.2447				6.9600e-003	1.0288		6.4500e-003	0.2774						711.5306
Total	**0.1262**	**0.2447**				**6.9600e-003**	**1.0288**		**6.4500e-003**	**0.2774**						**711.5306**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	146.5770					0.0000	0.0000		0.0000	0.0000						0.0000
Off-Road	0.1308	0.8563				0.0203	0.0203		0.0203	0.0203						281.6873
Total	**146.7078**	**0.8563**				**0.0203**	**0.0203**		**0.0203**	**0.0203**						**281.6873**

3.7 Architectural Coating - 2032

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	0.1262	0.2447				6.9600e-003	1.0288		6.4500e-003	0.2774						711.5306
Total	**0.1262**	**0.2447**				**6.9600e-003**	**1.0288**		**6.4500e-003**	**0.2774**						**711.5306**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	35.5160	107.1574				1.4156	59.5895		1.3031	16.8635						70,510.3925
Unmitigated	35.5160	107.1574				1.4156	59.5895		1.3031	16.8635						70,510.3925

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	1,667.27	1,811.48	1535.71	5,762,640	5,762,640
General Office Building	4,148.50	893.00	369.26	8,678,752	8,678,752
Single Family Housing	1,014.42	1,068.48	929.62	3,487,215	3,487,215
Single Family Housing	1,636.47	1,723.68	1499.67	5,625,602	5,625,602
Total	8,466.66	5,496.64	4,334.26	23,554,209	23,554,209

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	16.80	7.10	7.90	32.90	18.00	49.10	86	11	3
General Office Building	14.70	6.60	6.60	33.00	48.00	19.00	77	19	4
Single Family Housing	16.80	7.10	7.90	32.90	18.00	49.10	86	11	3
Single Family Housing	16.80	7.10	7.90	32.90	18.00	49.10	86	11	3

4.4 Fleet Mix

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.462115	0.061823	0.181510	0.153742	0.057112	0.007288	0.019722	0.042680	0.001823	0.001665	0.006988	0.000686	0.002845

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.5176	4.5068				0.3576	0.3576		0.3576	0.3576						5,681.157 0
NaturalGas Unmitigated	0.5176	4.5068				0.3576	0.3576		0.3576	0.3576						5,681.157 0

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Low Rise	9403.32	0.1014	0.8666				0.0701	0.0701		0.0701	0.0701						1,113.0060
General Office Building	14194.3	0.1531	1.3916				0.1058	0.1058		0.1058	0.1058						1,680.079 8
Single Family Housing	15062.9	0.1624	1.3882				0.1122	0.1122		0.1122	0.1122						1,782.888 7
Single Family Housing	9337.23	0.1007	0.8605				0.0696	0.0696		0.0696	0.0696						1,105.182 5
Total		**0.5176**	**4.5068**				**0.3576**	**0.3576**		**0.3576**	**0.3576**						**5,681.157 0**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Low Rise	9.40332	0.1014	0.8666				0.0701	0.0701		0.0701	0.0701						1,113.0060
General Office Building	14.1943	0.1531	1.3916				0.1058	0.1058		0.1058	0.1058						1,680.0798
Single Family Housing	15.0629	0.1624	1.3882				0.1122	0.1122		0.1122	0.1122						1,782.8887
Single Family Housing	9.33723	0.1007	0.8605				0.0696	0.0696		0.0696	0.0696						1,105.1825
Total		**0.5176**	**4.5068**				**0.3576**	**0.3576**		**0.3576**	**0.3576**						**5,681.1570**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1,269.3723	17.2675				213.9912	213.9912		213.9849	213.9849						32,872.2366
Unmitigated	1,269.3723	17.2675				213.9912	213.9912		213.9849	213.9849						32,872.2366

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	8.8348					0.0000	0.0000		0.0000	0.0000						0.0000
Consumer Products	24.1476					0.0000	0.0000		0.0000	0.0000						0.0000
Hearth	1,235.0287	16.7560				213.7507	213.7507		213.7444	213.7444						32,791.7782
Landscaping	1.3611	0.5115				0.2405	0.2405		0.2405	0.2405						80.4585
Total	**1,269.3723**	**17.2675**				**213.9912**	**213.9912**		**213.9849**	**213.9849**						**32,872.2366**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	8.8348					0.0000	0.0000		0.0000	0.0000						0.0000
Consumer Products	24.1476					0.0000	0.0000		0.0000	0.0000						0.0000
Hearth	1,235.0287	16.7560				213.7507	213.7507		213.7444	213.7444						32,791.7782
Landscaping	1.3611	0.5115				0.2405	0.2405		0.2405	0.2405						80.4585
Total	**1,269.3723**	**17.2675**				**213.9912**	**213.9912**		**213.9849**	**213.9849**						**32,872.2366**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

FolsomHeights_Amendment

Sacramento Valley Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	125.13	1000sqft	11.49	125,126.00	0
Apartments Low Rise	125.00	Dwelling Unit	14.91	125,000.00	242
Single Family Housing	125.00	Dwelling Unit	39.72	225,000.00	365
Single Family Housing	280.00	Dwelling Unit	58.20	504,000.00	818

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	65
Climate Zone	6			**Operational Year**	2018
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	590.31	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Running defaults for operational modeling for 2018.

Land Use - Target DU, Lot Acreages, and Population Based on Table 2-2.

Table Name	Column Name	Default Value	New Value
tblLandUse	LotAcreage	2.87	11.49
tblLandUse	LotAcreage	7.81	14.91
tblLandUse	LotAcreage	40.58	39.72
tblLandUse	LotAcreage	90.91	58.20
tblLandUse	Population	358.00	242.00
tblLandUse	Population	358.00	365.00
tblLandUse	Population	801.00	818.00
tblProjectCharacteristics	OperationalYear	2014	2018
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.5576	5.8350				0.2953	1.4044		0.2742	0.8767						499.3668
2018	0.6686	7.3656				0.3514	2.8110		0.3233	1.4849						703.8298
2019	0.5597	5.0248				0.2419	1.8911		0.2245	0.8638						805.9477
2020	0.4485	3.2127				0.1578	0.6603		0.1481	0.2830						823.8837
2021	0.4062	2.8705				0.1357	0.6363		0.1274	0.2617						814.9149
2022	0.3720	2.5663				0.1156	0.6143		0.1086	0.2424						806.7288
2023	0.3455	2.3583				0.1010	0.5997		0.0948	0.2287						802.1122
2024	0.3293	2.2425				0.0905	0.5930		0.0849	0.2198						804.3604
2025	0.3100	2.0978				0.0790	0.5797		0.0741	0.2085						797.9264
2026	0.3062	2.0889				0.0790	0.5797		0.0742	0.2085						795.1273
2027	0.3029	2.0813				0.0791	0.5797		0.0742	0.2086						792.5835
2028	0.2987	2.0666				0.0788	0.5775		0.0739	0.2078						787.3701
2029	0.2969	2.0682				0.0791	0.5798		0.0742	0.2086						788.5232
2030	0.2868	1.4763				0.0299	0.5305		0.0290	0.1634						825.8687
2031	0.2111	1.0822				0.0386	0.2051		0.0384	0.0830						473.9027
2032	14.8584	0.2406				8.7700e-003	0.0865		8.7300e-003	0.0294						124.3834
Total	**20.5582**	**44.6776**				**1.9612**	**12.9284**		**1.8324**	**5.7786**						**11,446.8296**

2.1 Overall Construction

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.5576	5.8350				0.2953	1.4044		0.2742	0.8767						499.3662
2018	0.6686	7.3656				0.3514	2.8110		0.3233	1.4849						703.8289
2019	0.5597	5.0248				0.2419	1.8911		0.2245	0.8638						805.9472
2020	0.4485	3.2127				0.1578	0.6603		0.1481	0.2830						823.8833
2021	0.4062	2.8705				0.1357	0.6363		0.1274	0.2617						814.9145
2022	0.3720	2.5663				0.1156	0.6143		0.1086	0.2424						806.7285
2023	0.3455	2.3583				0.1010	0.5997		0.0948	0.2287						802.1118
2024	0.3293	2.2425				0.0905	0.5930		0.0849	0.2198						804.3601
2025	0.3100	2.0978				0.0790	0.5797		0.0741	0.2085						797.9260
2026	0.3062	2.0889				0.0790	0.5797		0.0742	0.2085						795.1269
2027	0.3029	2.0813				0.0791	0.5797		0.0742	0.2086						792.5831
2028	0.2987	2.0666				0.0788	0.5775		0.0739	0.2078						787.3697
2029	0.2969	2.0682				0.0791	0.5798		0.0742	0.2086						788.5228
2030	0.2868	1.4763				0.0299	0.5305		0.0290	0.1634						825.8683
2031	0.2111	1.0822				0.0386	0.2051		0.0384	0.0830						473.9024
2032	14.8584	0.2406				8.7700e-003	0.0865		8.7300e-003	0.0294						124.3834
Total	**20.5582**	**44.6775**				**1.9612**	**12.9284**		**1.8324**	**5.7786**						**11,446.8232**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**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**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	64.0949	0.8420				10.1755	10.1755		10.1752	10.1752						1,419.696 1
Energy	0.0886	0.7625				0.0612	0.0612		0.0612	0.0612						2,359.451 5
Mobile	4.0922	12.8332				0.1781	7.2741		0.1639	2.0682						8,249.510 5
Waste						0.0000	0.0000		0.0000	0.0000						270.3883
Water						0.0000	0.0000		0.0000	0.0000						186.3120
Total	**68.2757**	**14.4377**				**10.4148**	**17.5107**		**10.4003**	**12.3046**						**12,485.35 85**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	64.0949	0.8420				10.1755	10.1755		10.1752	10.1752						1,419.6961
Energy	0.0886	0.7625				0.0612	0.0612		0.0612	0.0612						2,359.4515
Mobile	4.0922	12.8332				0.1781	7.2741		0.1639	2.0682						8,249.5105
Waste						0.0000	0.0000		0.0000	0.0000						270.3883
Water						0.0000	0.0000		0.0000	0.0000						186.2833
Total	**68.2757**	**14.4377**				**10.4148**	**17.5107**		**10.4003**	**12.3046**						**12,485.3297**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**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**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2017	10/6/2017	5	200	
2	Site Preparation	Site Preparation	10/7/2017	3/23/2018	5	120	
3	Grading	Grading	3/24/2018	5/31/2019	5	310	
4	Building Construction	Building Construction	6/1/2019	4/18/2031	5	3100	
5	Paving	Paving	4/19/2031	2/20/2032	5	220	
6	Architectural Coating	Architectural Coating	2/21/2032	12/24/2032	5	220	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 775

Acres of Paving: 0

Residential Indoor: 1,729,350; Residential Outdoor: 576,450; Non-Residential Indoor: 187,689; Non-Residential Outdoor: 62,563 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	162	0.38
Demolition	Rubber Tired Dozers	2	8.00	255	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	276.00	77.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	55.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.4048	4.2697				0.2125	0.2125		0.1980	0.1980						368.2917
Total	**0.4048**	**4.2697**				**0.2125**	**0.2125**		**0.1980**	**0.1980**						**368.2917**

3.2 Demolition - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	5.5800e-003	9.3500e-003				1.3000e-004	0.0186		1.2000e-004	5.0200e-003						15.7558
Total	**5.5800e-003**	**9.3500e-003**				**1.3000e-004**	**0.0186**		**1.2000e-004**	**5.0200e-003**						**15.7558**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.4048	4.2697				0.2125	0.2125		0.1980	0.1980						368.2913
Total	**0.4048**	**4.2697**				**0.2125**	**0.2125**		**0.1980**	**0.1980**						**368.2913**

3.2 Demolition - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	5.5800e-003	9.3500e-003				1.3000e-004	0.0186		1.2000e-004	5.0200e-003						15.7558
Total	**5.5800e-003**	**9.3500e-003**				**1.3000e-004**	**0.0186**		**1.2000e-004**	**5.0200e-003**						**15.7558**

3.3 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust						0.0000	1.0840		0.0000	0.5958						0.0000
Off-Road	0.1452	1.5526				0.0826	0.0826		0.0760	0.0760						109.6472
Total	**0.1452**	**1.5526**				**0.0826**	**1.1666**		**0.0760**	**0.6719**						**109.6472**

3.3 Site Preparation - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	2.0100e-003	3.3700e-003				5.0000e-005	6.6800e-003		4.0000e-005	1.8100e-003						5.6721
Total	**2.0100e-003**	**3.3700e-003**				**5.0000e-005**	**6.6800e-003**		**4.0000e-005**	**1.8100e-003**						**5.6721**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust						0.0000	1.0840		0.0000	0.5958						0.0000
Off-Road	0.1452	1.5526				0.0826	0.0826		0.0760	0.0760						109.6470
Total	**0.1452**	**1.5526**				**0.0826**	**1.1666**		**0.0760**	**0.6719**						**109.6470**

3.3 Site Preparation - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	2.0100e-003	3.3700e-003				5.0000e-005	6.6800e-003		4.0000e-005	1.8100e-003						5.6721
Total	**2.0100e-003**	**3.3700e-003**				**5.0000e-005**	**6.6800e-003**		**4.0000e-005**	**1.8100e-003**						**5.6721**

3.3 Site Preparation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust						0.0000	1.0840		0.0000	0.5958						0.0000
Off-Road	0.1288	1.3683				0.0710	0.0710		0.0653	0.0653						107.9240
Total	**0.1288**	**1.3683**				**0.0710**	**1.1549**		**0.0653**	**0.6611**						**107.9240**

3.3 Site Preparation - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	1.7400e-003	3.0100e-003				5.0000e-005	6.6800e-003		4.0000e-005	1.8100e-003						5.4568
Total	**1.7400e-003**	**3.0100e-003**				**5.0000e-005**	**6.6800e-003**		**4.0000e-005**	**1.8100e-003**						**5.4568**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust						0.0000	1.0840		0.0000	0.5958						0.0000
Off-Road	0.1288	1.3683				0.0710	0.0710		0.0653	0.0653						107.9239
Total	**0.1288**	**1.3683**				**0.0710**	**1.1549**		**0.0653**	**0.6611**						**107.9239**

3.3 Site Preparation - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	1.7400e-003	3.0100e-003				5.0000e-005	6.6800e-003		4.0000e-005	1.8100e-003						5.4568
Total	**1.7400e-003**	**3.0100e-003**				**5.0000e-005**	**6.6800e-003**		**4.0000e-005**	**1.8100e-003**						**5.4568**

3.4 Grading - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust						0.0000	1.3444		0.0000	0.5575						0.0000
Off-Road	0.5316	5.9832				0.2802	0.2802		0.2578	0.2578						570.1373
Total	**0.5316**	**5.9832**				**0.2802**	**1.6246**		**0.2578**	**0.8152**						**570.1373**

3.4 Grading - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	6.4800e-003	0.0112				1.7000e-004	0.0249		1.6000e-004	6.7200e-003						20.3116
Total	**6.4800e-003**	**0.0112**				**1.7000e-004**	**0.0249**		**1.6000e-004**	**6.7200e-003**						**20.3116**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust						0.0000	1.3444		0.0000	0.5575						0.0000
Off-Road	0.5316	5.9831				0.2802	0.2802		0.2578	0.2578						570.1366
Total	**0.5316**	**5.9831**				**0.2802**	**1.6246**		**0.2578**	**0.8152**						**570.1366**

3.4 Grading - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	6.4800e-003	0.0112				1.7000e-004	0.0249		1.6000e-004	6.7200e-003						20.3116
Total	**6.4800e-003**	**0.0112**				**1.7000e-004**	**0.0249**		**1.6000e-004**	**6.7200e-003**						**20.3116**

3.4 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust						0.0000	1.3444		0.0000	0.5575						0.0000
Off-Road	0.2666	2.9538				0.1365	0.1365		0.1256	0.1256						304.1604
Total	**0.2666**	**2.9538**				**0.1365**	**1.4809**		**0.1256**	**0.6831**						**304.1604**

3.4 Grading - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	3.1500e-003	5.5200e-003				9.0000e-005	0.0135		8.0000e-005	3.6400e-003						10.5854
Total	**3.1500e-003**	**5.5200e-003**				**9.0000e-005**	**0.0135**		**8.0000e-005**	**3.6400e-003**						**10.5854**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust						0.0000	1.3444		0.0000	0.5575						0.0000
Off-Road	0.2666	2.9538				0.1365	0.1365		0.1256	0.1256						304.1601
Total	**0.2666**	**2.9538**				**0.1365**	**1.4809**		**0.1256**	**0.6831**						**304.1601**

3.4 Grading - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	3.1500e-003	5.5200e-003				9.0000e-005	0.0135		8.0000e-005	3.6400e-003						10.5854
Total	**3.1500e-003**	**5.5200e-003**				**9.0000e-005**	**0.0135**		**8.0000e-005**	**3.6400e-003**						**10.5854**

3.5 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1787	1.5933				0.0977	0.0977		0.0918	0.0918						178.8424
Total	**0.1787**	**1.5933**				**0.0977**	**0.0977**		**0.0918**	**0.0918**						**178.8424**

3.5 Building Construction - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0506	0.3659				5.8400e-003	0.0398		5.3700e-003	0.0151						108.6529
Worker	0.0607	0.1062				1.7400e-003	0.2593		1.6100e-003	0.0701						203.7065
Total	**0.1112**	**0.4722**				**7.5800e-003**	**0.2991**		**6.9800e-003**	**0.0852**						**312.3595**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1787	1.5933				0.0977	0.0977		0.0918	0.0918						178.8422
Total	**0.1787**	**1.5933**				**0.0977**	**0.0977**		**0.0918**	**0.0918**						**178.8422**

3.5 Building Construction - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0506	0.3659				5.8400e-003	0.0398		5.3700e-003	0.0151						108.6529
Worker	0.0607	0.1062				1.7400e-003	0.2593		1.6100e-003	0.0701						203.7065
Total	**0.1112**	**0.4722**				**7.5800e-003**	**0.2991**		**6.9800e-003**	**0.0852**						**312.3595**

3.5 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2766	2.5000				0.1458	0.1458		0.1371	0.1371						303.6973
Total	**0.2766**	**2.5000**				**0.1458**	**0.1458**		**0.1371**	**0.1371**						**303.6973**

3.5 Building Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0757	0.5439				9.0000e-003	0.0676		8.2800e-003	0.0251						182.9876
Worker	0.0962	0.1688				2.9800e-003	0.4469		2.7600e-003	0.1208						337.1988
Total	**0.1719**	**0.7127**				**0.0120**	**0.5145**		**0.0110**	**0.1459**						**520.1864**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2766	2.5000				0.1458	0.1458		0.1371	0.1371						303.6969
Total	**0.2766**	**2.5000**				**0.1458**	**0.1458**		**0.1371**	**0.1371**						**303.6969**

3.5 Building Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0757	0.5439				9.0000e-003	0.0676		8.2800e-003	0.0251						182.9876
Worker	0.0962	0.1688				2.9800e-003	0.4469		2.7600e-003	0.1208						337.1988
Total	**0.1719**	**0.7127**				**0.0120**	**0.5145**		**0.0110**	**0.1459**						**520.1864**

3.5 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2471	2.2629				0.1246	0.1246		0.1172	0.1172						302.5568
Total	**0.2471**	**2.2629**				**0.1246**	**0.1246**		**0.1172**	**0.1172**						**302.5568**

3.5 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0691	0.4507				8.0700e-003	0.0664		7.4300e-003	0.0242						182.0639
Worker	0.0900	0.1569				2.9700e-003	0.4452		2.7600e-003	0.1204						330.2942
Total	**0.1591**	**0.6076**				**0.0110**	**0.5116**		**0.0102**	**0.1445**						**512.3581**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2471	2.2629				0.1246	0.1246		0.1172	0.1172						302.5565
Total	**0.2471**	**2.2629**				**0.1246**	**0.1246**		**0.1172**	**0.1172**						**302.5565**

3.5 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0691	0.4507				8.0700e-003	0.0664		7.4300e-003	0.0242						182.0639
Worker	0.0900	0.1569				2.9700e-003	0.4452		2.7600e-003	0.1204						330.2942
Total	**0.1591**	**0.6076**				**0.0110**	**0.5116**		**0.0102**	**0.1445**						**512.3581**

3.5 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2209	2.0197				0.1047	0.1047		0.0986	0.0986						301.5017
Total	**0.2209**	**2.0197**				**0.1047**	**0.1047**		**0.0986**	**0.0986**						**301.5017**

3.5 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0666	0.3999				7.8900e-003	0.0660		7.2600e-003	0.0239						181.2711
Worker	0.0845	0.1467				2.9700e-003	0.4435		2.7500e-003	0.1199						323.9560
Total	**0.1511**	**0.5465**				**0.0109**	**0.5095**		**0.0100**	**0.1438**						**505.2271**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2209	2.0197				0.1047	0.1047		0.0986	0.0986						301.5013
Total	**0.2209**	**2.0197**				**0.1047**	**0.1047**		**0.0986**	**0.0986**						**301.5013**

3.5 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0666	0.3999				7.8900e-003	0.0660		7.2600e-003	0.0239						181.2711
Worker	0.0845	0.1467				2.9700e-003	0.4435		2.7500e-003	0.1199						323.9560
Total	**0.1511**	**0.5465**				**0.0109**	**0.5095**		**0.0100**	**0.1438**						**505.2271**

3.5 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2036	1.8606				0.0906	0.0906		0.0852	0.0852						301.5949
Total	**0.2036**	**1.8606**				**0.0906**	**0.0906**		**0.0852**	**0.0852**						**301.5949**

3.5 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0621	0.3594				7.4000e-003	0.0655		6.8000e-003	0.0235						181.1033
Worker	0.0798	0.1382				2.9800e-003	0.4435		2.7600e-003	0.1199						319.4140
Total	**0.1419**	**0.4976**				**0.0104**	**0.5091**		**9.5600e-003**	**0.1434**						**500.5173**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2036	1.8606				0.0906	0.0906		0.0852	0.0852						301.5946
Total	**0.2036**	**1.8606**				**0.0906**	**0.0906**		**0.0852**	**0.0852**						**301.5946**

3.5 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0621	0.3594				7.4000e-003	0.0655		6.8000e-003	0.0235						181.1033
Worker	0.0798	0.1382				2.9800e-003	0.4435		2.7600e-003	0.1199						319.4140
Total	**0.1419**	**0.4976**				**0.0104**	**0.5091**		**9.5600e-003**	**0.1434**						**500.5173**

3.5 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1920	1.7524				0.0800	0.0800		0.0752	0.0752						303.9643
Total	**0.1920**	**1.7524**				**0.0800**	**0.0800**		**0.0752**	**0.0752**						**303.9643**

3.5 Building Construction - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0611	0.3580				7.4800e-003	0.0661		6.8800e-003	0.0237						182.5707
Worker	0.0763	0.1320				3.0100e-003	0.4470		2.8000e-003	0.1209						317.8254
Total	**0.1374**	**0.4900**				**0.0105**	**0.5130**		**9.6800e-003**	**0.1446**						**500.3961**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1920	1.7524				0.0800	0.0800		0.0752	0.0752						303.9639
Total	**0.1920**	**1.7524**				**0.0800**	**0.0800**		**0.0752**	**0.0752**						**303.9639**

3.5 Building Construction - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0611	0.3580				7.4800e-003	0.0661		6.8800e-003	0.0237						182.5707
Worker	0.0763	0.1320				3.0100e-003	0.4470		2.8000e-003	0.1209						317.8254
Total	**0.1374**	**0.4900**				**0.0105**	**0.5130**		**9.6800e-003**	**0.1446**						**500.3961**

3.5 Building Construction - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1777	1.6195				0.0685	0.0685		0.0645	0.0645						302.8874
Total	**0.1777**	**1.6195**				**0.0685**	**0.0685**		**0.0645**	**0.0645**						**302.8874**

3.5 Building Construction - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0596	0.3528				7.4700e-003	0.0659		6.8700e-003	0.0236						181.9361
Worker	0.0727	0.1256				3.0200e-003	0.4453		2.8100e-003	0.1204						313.1028
Total	**0.1323**	**0.4784**				**0.0105**	**0.5111**		**9.6800e-003**	**0.1441**						**495.0390**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1777	1.6195				0.0685	0.0685		0.0645	0.0645						302.8871
Total	**0.1777**	**1.6195**				**0.0685**	**0.0685**		**0.0645**	**0.0645**						**302.8871**

3.5 Building Construction - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0596	0.3528				7.4700e-003	0.0659		6.8700e-003	0.0236						181.9361
Worker	0.0727	0.1256				3.0200e-003	0.4453		2.8100e-003	0.1204						313.1028
Total	**0.1323**	**0.4784**				**0.0105**	**0.5111**		**9.6800e-003**	**0.1441**						**495.0390**

3.5 Building Construction - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1777	1.6195				0.0685	0.0685		0.0645	0.0645						302.8874
Total	**0.1777**	**1.6195**				**0.0685**	**0.0685**		**0.0645**	**0.0645**						**302.8874**

3.5 Building Construction - 2026

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0587	0.3488				7.4600e-003	0.0659		6.8600e-003	0.0236						181.9932
Worker	0.0698	0.1206				3.0500e-003	0.4453		2.8300e-003	0.1205						310.2467
Total	**0.1285**	**0.4694**				**0.0105**	**0.5112**		**9.6900e-003**	**0.1441**						**492.2399**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1777	1.6195				0.0685	0.0685		0.0645	0.0645						302.8871
Total	**0.1777**	**1.6195**				**0.0685**	**0.0685**		**0.0645**	**0.0645**						**302.8871**

3.5 Building Construction - 2026

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0587	0.3488				7.4600e-003	0.0659		6.8600e-003	0.0236						181.9932
Worker	0.0698	0.1206				3.0500e-003	0.4453		2.8300e-003	0.1205						310.2467
Total	**0.1285**	**0.4694**				**0.0105**	**0.5112**		**9.6900e-003**	**0.1441**						**492.2399**

3.5 Building Construction - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1777	1.6195				0.0685	0.0685		0.0645	0.0645						302.8874
Total	**0.1777**	**1.6195**				**0.0685**	**0.0685**		**0.0645**	**0.0645**						**302.8874**

3.5 Building Construction - 2027

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0581	0.3457				7.4700e-003	0.0659		6.8700e-003	0.0236						182.0505
Worker	0.0671	0.1162				3.0800e-003	0.4453		2.8500e-003	0.1205						307.6455
Total	**0.1253**	**0.4618**				**0.0106**	**0.5112**		**9.7200e-003**	**0.1441**						**489.6961**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1777	1.6195				0.0685	0.0685		0.0645	0.0645						302.8871
Total	**0.1777**	**1.6195**				**0.0685**	**0.0685**		**0.0645**	**0.0645**						**302.8871**

3.5 Building Construction - 2027

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0581	0.3457				7.4700e-003	0.0659		6.8700e-003	0.0236						182.0505
Worker	0.0671	0.1162				3.0800e-003	0.4453		2.8500e-003	0.1205						307.6455
Total	**0.1253**	**0.4618**				**0.0106**	**0.5112**		**9.7200e-003**	**0.1441**						**489.6961**

3.5 Building Construction - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1770	1.6133				0.0683	0.0683		0.0642	0.0642						301.7269
Total	**0.1770**	**1.6133**				**0.0683**	**0.0683**		**0.0642**	**0.0642**						**301.7269**

3.5 Building Construction - 2028

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0573	0.3416				7.4400e-003	0.0656		6.8400e-003	0.0235						181.3987
Worker	0.0644	0.1117				3.0800e-003	0.4436		2.8600e-003	0.1200						304.2444
Total	**0.1218**	**0.4533**				**0.0105**	**0.5093**		**9.7000e-003**	**0.1436**						**485.6432**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1770	1.6133				0.0683	0.0683		0.0642	0.0642						301.7266
Total	**0.1770**	**1.6133**				**0.0683**	**0.0683**		**0.0642**	**0.0642**						**301.7266**

3.5 Building Construction - 2028

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0573	0.3416				7.4400e-003	0.0656		6.8400e-003	0.0235						181.3987
Worker	0.0644	0.1117				3.0800e-003	0.4436		2.8600e-003	0.1200						304.2444
Total	**0.1218**	**0.4533**				**0.0105**	**0.5093**		**9.7000e-003**	**0.1436**						**485.6432**

3.5 Building Construction - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1777	1.6195				0.0685	0.0685		0.0645	0.0645						302.8874
Total	**0.1777**	**1.6195**				**0.0685**	**0.0685**		**0.0645**	**0.0645**						**302.8874**

3.5 Building Construction - 2029

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0570	0.3405				7.4700e-003	0.0659		6.8700e-003	0.0236						182.1360
Worker	0.0622	0.1083				3.1100e-003	0.4454		2.8900e-003	0.1205						303.4997
Total	**0.1192**	**0.4488**				**0.0106**	**0.5113**		**9.7600e-003**	**0.1441**						**485.6357**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1777	1.6195				0.0685	0.0685		0.0645	0.0645						302.8871
Total	**0.1777**	**1.6195**				**0.0685**	**0.0685**		**0.0645**	**0.0645**						**302.8871**

3.5 Building Construction - 2029

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0570	0.3405				7.4700e-003	0.0659		6.8700e-003	0.0236						182.1360
Worker	0.0622	0.1083				3.1100e-003	0.4454		2.8900e-003	0.1205						303.4997
Total	**0.1192**	**0.4488**				**0.0106**	**0.5113**		**9.7600e-003**	**0.1441**						**485.6357**

3.5 Building Construction - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1702	1.0333				0.0193	0.0193		0.0193	0.0193						341.8160
Total	**0.1702**	**1.0333**				**0.0193**	**0.0193**		**0.0193**	**0.0193**						**341.8160**

3.5 Building Construction - 2030

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0566	0.3383				7.4700e-003	0.0659		6.8700e-003	0.0236						182.1745
Worker	0.0599	0.1047				3.1200e-003	0.4454		2.9000e-003	0.1205						301.8782
Total	**0.1166**	**0.4430**				**0.0106**	**0.5113**		**9.7700e-003**	**0.1442**						**484.0527**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1702	1.0333				0.0193	0.0193		0.0193	0.0193						341.8156
Total	**0.1702**	**1.0333**				**0.0193**	**0.0193**		**0.0193**	**0.0193**						**341.8156**

3.5 Building Construction - 2030

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0566	0.3383				7.4700e-003	0.0659		6.8700e-003	0.0236						182.1745
Worker	0.0599	0.1047				3.1200e-003	0.4454		2.9000e-003	0.1205						301.8782
Total	**0.1166**	**0.4430**				**0.0106**	**0.5113**		**9.7700e-003**	**0.1442**						**484.0527**

3.5 Building Construction - 2031

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0509	0.3088				5.7600e-003	5.7600e-003		5.7600e-003	5.7600e-003						102.1519
Total	**0.0509**	**0.3088**				**5.7600e-003**	**5.7600e-003**		**5.7600e-003**	**5.7600e-003**						**102.1519**

3.5 Building Construction - 2031

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0169	0.1006				2.2300e-003	0.0197		2.0500e-003	7.0600e-003						54.4584
Worker	0.0173	0.0303				9.3000e-004	0.1331		8.7000e-004	0.0360						89.8103
Total	**0.0341**	**0.1309**				**3.1600e-003**	**0.1528**		**2.9200e-003**	**0.0431**						**144.2687**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0509	0.3088				5.7600e-003	5.7600e-003		5.7600e-003	5.7600e-003						102.1518
Total	**0.0509**	**0.3088**				**5.7600e-003**	**5.7600e-003**		**5.7600e-003**	**5.7600e-003**						**102.1518**

3.5 Building Construction - 2031

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0169	0.1006				2.2300e-003	0.0197		2.0500e-003	7.0600e-003						54.4584
Worker	0.0173	0.0303				9.3000e-004	0.1331		8.7000e-004	0.0360						89.8103
Total	**0.0341**	**0.1309**				**3.1600e-003**	**0.1528**		**2.9200e-003**	**0.0431**						**144.2687**

3.6 Paving - 2031

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1240	0.6387				0.0296	0.0296		0.0296	0.0296						216.0306
Paving	0.0000					0.0000	0.0000		0.0000	0.0000						0.0000
Total	**0.1240**	**0.6387**				**0.0296**	**0.0296**		**0.0296**	**0.0296**						**216.0306**

3.6 Paving - 2031

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	2.2000e-003	3.8600e-003				1.2000e-004	0.0170		1.1000e-004	4.5900e-003						11.4516
Total	**2.2000e-003**	**3.8600e-003**				**1.2000e-004**	**0.0170**		**1.1000e-004**	**4.5900e-003**						**11.4516**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1240	0.6387				0.0296	0.0296		0.0296	0.0296						216.0303
Paving	0.0000					0.0000	0.0000		0.0000	0.0000						0.0000
Total	**0.1240**	**0.6387**				**0.0296**	**0.0296**		**0.0296**	**0.0296**						**216.0303**

3.6 Paving - 2031

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	2.2000e-003	3.8600e-003				1.2000e-004	0.0170		1.1000e-004	4.5900e-003						11.4516
Total	**2.2000e-003**	**3.8600e-003**				**1.2000e-004**	**0.0170**		**1.1000e-004**	**4.5900e-003**						**11.4516**

3.6 Paving - 2032

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0251	0.1291				5.9800e-003	5.9800e-003		5.9800e-003	5.9800e-003						43.6783
Paving	0.0000					0.0000	0.0000		0.0000	0.0000						0.0000
Total	**0.0251**	**0.1291**				**5.9800e-003**	**5.9800e-003**		**5.9800e-003**	**5.9800e-003**						**43.6783**

3.6 Paving - 2032

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	4.3000e-004	7.6000e-004				2.0000e-005	3.4300e-003		2.0000e-005	9.3000e-004						2.3066
Total	**4.3000e-004**	**7.6000e-004**				**2.0000e-005**	**3.4300e-003**		**2.0000e-005**	**9.3000e-004**						**2.3066**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0251	0.1291				5.9800e-003	5.9800e-003		5.9800e-003	5.9800e-003						43.6783
Paving	0.0000					0.0000	0.0000		0.0000	0.0000						0.0000
Total	**0.0251**	**0.1291**				**5.9800e-003**	**5.9800e-003**		**5.9800e-003**	**5.9800e-003**						**43.6783**

3.6 Paving - 2032

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	4.3000e-004	7.6000e-004				2.0000e-005	3.4300e-003		2.0000e-005	9.3000e-004						2.3066
Total	**4.3000e-004**	**7.6000e-004**				**2.0000e-005**	**3.4300e-003**		**2.0000e-005**	**9.3000e-004**						**2.3066**

3.7 Architectural Coating - 2032

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	14.8091					0.0000	0.0000		0.0000	0.0000						0.0000
Off-Road	0.0144	0.0942				2.2300e-003	2.2300e-003		2.2300e-003	2.2300e-003						28.1097
Total	**14.8235**	**0.0942**				**2.2300e-003**	**2.2300e-003**		**2.2300e-003**	**2.2300e-003**						**28.1097**

3.7 Architectural Coating - 2032

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	9.3600e-003	0.0166				5.3000e-004	0.0748		4.9000e-004	0.0203						50.2888
Total	**9.3600e-003**	**0.0166**				**5.3000e-004**	**0.0748**		**4.9000e-004**	**0.0203**						**50.2888**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	14.8091					0.0000	0.0000		0.0000	0.0000						0.0000
Off-Road	0.0144	0.0942				2.2300e-003	2.2300e-003		2.2300e-003	2.2300e-003						28.1096
Total	**14.8235**	**0.0942**				**2.2300e-003**	**2.2300e-003**		**2.2300e-003**	**2.2300e-003**						**28.1096**

3.7 Architectural Coating - 2032

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	9.3600e-003	0.0166				5.3000e-004	0.0748		4.9000e-004	0.0203						50.2888
Total	**9.3600e-003**	**0.0166**				**5.3000e-004**	**0.0748**		**4.9000e-004**	**0.0203**						**50.2888**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	4.0922	12.8332				0.1781	7.2741		0.1639	2.0682						8,249.5105
Unmitigated	4.0922	12.8332				0.1781	7.2741		0.1639	2.0682						8,249.5105

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	823.75	895.00	758.75	2,847,154	2,847,154
General Office Building	1,377.64	296.55	122.62	2,882,046	2,882,046
Single Family Housing	1,196.25	1,260.00	1096.25	4,112,282	4,112,282
Single Family Housing	2,679.60	2,822.40	2455.60	9,211,511	9,211,511
Total	6,077.24	5,273.95	4,433.22	19,052,993	19,052,993

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	16.80	7.10	7.90	32.90	18.00	49.10	86	11	3
General Office Building	14.70	6.60	6.60	33.00	48.00	19.00	77	19	4
Single Family Housing	16.80	7.10	7.90	32.90	18.00	49.10	86	11	3
Single Family Housing	16.80	7.10	7.90	32.90	18.00	49.10	86	11	3

4.4 Fleet Mix

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.462115	0.061823	0.181510	0.153742	0.057112	0.007288	0.019722	0.042680	0.001823	0.001665	0.006988	0.000686	0.002845

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000						1,476.934 5
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000						1,476.934 5
NaturalGas Mitigated	0.0886	0.7625				0.0612	0.0612		0.0612	0.0612						882.5170
NaturalGas Unmitigated	0.0886	0.7625				0.0612	0.0612		0.0612	0.0612						882.5170

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Low Rise	1.69576e +006	9.1400e-003	0.0781				6.3200e-003	6.3200e-003		6.3200e-003	6.3200e-003						91.0428
General Office Building	1.72048e +006	9.2800e-003	0.0843				6.4100e-003	6.4100e-003		6.4100e-003	6.4100e-003						92.3703
Single Family Housing	4.01897e +006	0.0217	0.1852				0.0150	0.0150		0.0150	0.0150						215.7728
Single Family Housing	9.0025e +006	0.0485	0.4148				0.0335	0.0335		0.0335	0.0335						483.3311
Total		**0.0886**	**0.7625**				**0.0612**	**0.0612**		**0.0612**	**0.0612**						**882.5170**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Office Building	1.72048e+006	9.2800e-003	0.0843				6.4100e-003	6.4100e-003		6.4100e-003	6.4100e-003						92.3703
Single Family Housing	4.01897e+006	0.0217	0.1852				0.0150	0.0150		0.0150	0.0150						215.7728
Single Family Housing	9.0025e+006	0.0485	0.4148				0.0335	0.0335		0.0335	0.0335						483.3311
Apartments Low Rise	1.69576e+006	9.1400e-003	0.0781				6.3200e-003	6.3200e-003		6.3200e-003	6.3200e-003						91.0428
Total		**0.0886**	**0.7625**				**0.0612**	**0.0612**		**0.0612**	**0.0612**						**882.5170**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	473785				127.3913
General Office Building	2.00702e +006				539.6479
Single Family Housing	2.08244e +006				559.9276
Single Family Housing	929663				249.9677
Total					**1,476.934 5**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	473785				127.3913
General Office Building	2.00702e +006				539.6479
Single Family Housing	2.08244e +006				559.9276
Single Family Housing	929663				249.9677
Total					**1,476.934 5**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	64.0949	0.8420				10.1755	10.1755		10.1752	10.1752						1,419.696 1
Unmitigated	64.0949	0.8420				10.1755	10.1755		10.1752	10.1752						1,419.696 1

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.4809					0.0000	0.0000		0.0000	0.0000						0.0000
Consumer Products	3.8240					0.0000	0.0000		0.0000	0.0000						0.0000
Hearth	58.6677	0.7960				10.1538	10.1538		10.1535	10.1535						1,413.1317
Landscaping	0.1223	0.0460				0.0216	0.0216		0.0216	0.0216						6.5644
Total	**64.0949**	**0.8420**				**10.1755**	**10.1755**		**10.1752**	**10.1752**						**1,419.6961**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.4809					0.0000	0.0000		0.0000	0.0000						0.0000
Consumer Products	3.8240					0.0000	0.0000		0.0000	0.0000						0.0000
Hearth	58.6677	0.7960				10.1538	10.1538		10.1535	10.1535						1,413.1317
Landscaping	0.1223	0.0460				0.0216	0.0216		0.0216	0.0216						6.5644
Total	**64.0949**	**0.8420**				**10.1755**	**10.1755**		**10.1752**	**10.1752**						**1,419.6961**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated				186.2833
Unmitigated				186.3120

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	8.14425 / 5.13442				26.7804
General Office Building	22.2398 / 13.6309				72.7633
Single Family Housing	26.3874 / 16.6355				86.7684
Total					**186.3120**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	8.14425 / 5.13442				26.7763
General Office Building	22.2398 / 13.6309				72.7520
Single Family Housing	26.3874 / 16.6355				86.7550
Total					**186.2833**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated				270.3883
Unmitigated				270.3883

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	57.5				26.1577
General Office Building	116.37				52.9386
Single Family Housing	420.5				191.2921
Total					**270.3883**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	57.5				26.1577
General Office Building	116.37				52.9386
Single Family Housing	420.5				191.2921
Total					**270.3883**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

FolsomHeights_Amendment

Sacramento Valley Air Basin, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	125.13	1000sqft	11.49	125,126.00	0
Apartments Low Rise	125.00	Dwelling Unit	14.91	125,000.00	242
Single Family Housing	125.00	Dwelling Unit	39.72	225,000.00	365
Single Family Housing	280.00	Dwelling Unit	58.20	504,000.00	818

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	65
Climate Zone	6			**Operational Year**	2018
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	590.31	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Running defaults for operational modeling for 2018.

Land Use - Target DU, Lot Acreages, and Population Based on Table 2-2.

Table Name	Column Name	Default Value	New Value
tblLandUse	LotAcreage	2.87	11.49
tblLandUse	LotAcreage	7.81	14.91
tblLandUse	LotAcreage	40.58	39.72
tblLandUse	LotAcreage	90.91	58.20
tblLandUse	Population	358.00	242.00
tblLandUse	Population	358.00	365.00
tblLandUse	Population	801.00	818.00
tblProjectCharacteristics	OperationalYear	2014	2018
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	4.9180	51.8542				2.7558	21.0520		2.5353	12.5270						4,259.1089
2018	5.3671	59.6340				2.7897	20.6631		2.5665	12.1692						6,499.5931
2019	4.9611	54.2890				2.5066	11.4354		2.3061	5.9703						7,464.8996
2020	3.5307	24.2118				1.2039	5.1912		1.1304	2.1970						7,236.4395
2021	3.2164	21.7274				1.0392	5.0266		0.9756	2.0423						7,182.5045
2022	2.9602	19.4981				0.8889	4.8764		0.8348	1.9015						7,135.3286
2023	2.7534	17.9220				0.7763	4.7639		0.7290	1.7958						7,092.4639
2024	2.6049	16.9076				0.6904	4.6781		0.6480	1.7148						7,056.1938
2025	2.4625	15.8717				0.6052	4.5929		0.5678	1.6347						7,024.9523
2026	2.4299	15.8089				0.6054	4.5932		0.5680	1.6349						6,998.9977
2027	2.4017	15.7558				0.6056	4.5935		0.5682	1.6351						6,975.4634
2028	2.3750	15.7083				0.6057	4.5937		0.5684	1.6353						6,955.2953
2029	2.3480	15.6644				0.6058	4.5939		0.5685	1.6354						6,938.0436
2030	2.2660	11.1321				0.2285	4.2166		0.2222	1.2892						7,252.3295
2031	2.2428	11.0967				0.3247	4.2168		0.3246	1.2893						7,240.3058
2032	134.8606	7.0174				0.3247	0.7276		0.3246	0.3754						2,754.6062
Total	**181.6980**	**374.0993**				**16.5563**	**109.8147**		**15.4380**	**51.4471**						**106,066.5254**

2.1 Overall Construction (Maximum Daily Emission)

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	4.9180	51.8542				2.7558	21.0520		2.5353	12.5270						4,259.1089
2018	5.3671	59.6340				2.7897	20.6631		2.5665	12.1692						6,499.5931
2019	4.9611	54.2890				2.5066	11.4354		2.3061	5.9703						7,464.8996
2020	3.5307	24.2118				1.2039	5.1912		1.1304	2.1970						7,236.4395
2021	3.2164	21.7274				1.0392	5.0266		0.9756	2.0423						7,182.5045
2022	2.9602	19.4981				0.8889	4.8764		0.8348	1.9015						7,135.3286
2023	2.7534	17.9220				0.7763	4.7639		0.7290	1.7958						7,092.4639
2024	2.6049	16.9076				0.6904	4.6781		0.6480	1.7148						7,056.1938
2025	2.4625	15.8717				0.6052	4.5929		0.5678	1.6347						7,024.9523
2026	2.4299	15.8089				0.6054	4.5932		0.5680	1.6349						6,998.9977
2027	2.4017	15.7558				0.6056	4.5935		0.5682	1.6351						6,975.4634
2028	2.3750	15.7083				0.6057	4.5937		0.5684	1.6353						6,955.2953
2029	2.3480	15.6644				0.6058	4.5939		0.5685	1.6354						6,938.0436
2030	2.2660	11.1321				0.2285	4.2166		0.2222	1.2892						7,252.3295
2031	2.2428	11.0967				0.3247	4.2168		0.3246	1.2893						7,240.3058
2032	134.8606	7.0174				0.3247	0.7276		0.3246	0.3754						2,754.6062
Total	**181.6980**	**374.0993**				**16.5563**	**109.8147**		**15.4380**	**51.4471**						**106,066.5253**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	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

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1,461.3458	19.9250				247.8945	247.8945		247.8873	247.8873						38,073.3526
Energy	0.4857	4.1780				0.3356	0.3356		0.3356	0.3356						5,330.4574
Mobile	27.5726	72.4942				1.0773	45.7235		0.9917	12.9337						58,922.4273
Total	**1,489.4041**	**96.5972**				**249.3074**	**293.9536**		**249.2145**	**261.1565**						**102,326.2373**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1,461.3458	19.9250				247.8945	247.8945		247.8873	247.8873						38,073.3526
Energy	0.4857	4.1780				0.3356	0.3356		0.3356	0.3356						5,330.4574
Mobile	27.5726	72.4942				1.0773	45.7235		0.9917	12.9337						58,922.4273
Total	**1,489.4041**	**96.5972**				**249.3074**	**293.9536**		**249.2145**	**261.1565**						**102,326.2373**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2017	10/6/2017	5	200	
2	Site Preparation	Site Preparation	10/7/2017	3/23/2018	5	120	
3	Grading	Grading	3/24/2018	5/31/2019	5	310	
4	Building Construction	Building Construction	6/1/2019	4/18/2031	5	3100	
5	Paving	Paving	4/19/2031	2/20/2032	5	220	
6	Architectural Coating	Architectural Coating	2/21/2032	12/24/2032	5	220	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 775

Acres of Paving: 0

Residential Indoor: 1,729,350; Residential Outdoor: 576,450; Non-Residential Indoor: 187,689; Non-Residential Outdoor: 62,563 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	162	0.38
Demolition	Rubber Tired Dozers	2	8.00	255	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	276.00	77.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	55.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.0482	42.6971				2.1252	2.1252		1.9797	1.9797						4,059.721 1
Total	**4.0482**	**42.6971**				**2.1252**	**2.1252**		**1.9797**	**1.9797**						**4,059.721 1**

3.2 Demolition - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	0.0665	0.0840				1.3100e-003	0.1929		1.2000e-003	0.0520						191.8881
Total	**0.0665**	**0.0840**				**1.3100e-003**	**0.1929**		**1.2000e-003**	**0.0520**						**191.8881**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.0482	42.6971				2.1252	2.1252		1.9797	1.9797						4,059.7211
Total	**4.0482**	**42.6971**				**2.1252**	**2.1252**		**1.9797**	**1.9797**						**4,059.7211**

3.2 Demolition - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	0.0665	0.0840				1.3100e-003	0.1929		1.2000e-003	0.0520						191.8881
Total	**0.0665**	**0.0840**				**1.3100e-003**	**0.1929**		**1.2000e-003**	**0.0520**						**191.8881**

3.3 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust						0.0000	18.0663		0.0000	9.9307						0.0000
Off-Road	4.8382	51.7535				2.7542	2.7542		2.5339	2.5339						4,028.8432
Total	**4.8382**	**51.7535**				**2.7542**	**20.8205**		**2.5339**	**12.4646**						**4,028.8432**

3.3 Site Preparation - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	0.0798	0.1008				1.5700e-003	0.2315		1.4400e-003	0.0624						230.2657
Total	**0.0798**	**0.1008**				**1.5700e-003**	**0.2315**		**1.4400e-003**	**0.0624**						**230.2657**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust						0.0000	18.0663		0.0000	9.9307						0.0000
Off-Road	4.8382	51.7535				2.7542	2.7542		2.5339	2.5339						4,028.8432
Total	**4.8382**	**51.7535**				**2.7542**	**20.8205**		**2.5339**	**12.4646**						**4,028.8432**

3.3 Site Preparation - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	0.0798	0.1008				1.5700e-003	0.2315		1.4400e-003	0.0624						230.2657
Total	**0.0798**	**0.1008**				**1.5700e-003**	**0.2315**		**1.4400e-003**	**0.0624**						**230.2657**

3.3 Site Preparation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust						0.0000	18.0663		0.0000	9.9307						0.0000
Off-Road	4.2921	45.6088				2.3654	2.3654		2.1762	2.1762						3,965.5297
Total	**4.2921**	**45.6088**				**2.3654**	**20.4317**		**2.1762**	**12.1069**						**3,965.5297**

3.3 Site Preparation - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	0.0698	0.0902				1.5200e-003	0.2314		1.4000e-003	0.0624						221.5550
Total	**0.0698**	**0.0902**				**1.5200e-003**	**0.2314**		**1.4000e-003**	**0.0624**						**221.5550**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust						0.0000	18.0663		0.0000	9.9307						0.0000
Off-Road	4.2921	45.6088				2.3654	2.3654		2.1762	2.1762						3,965.529 7
Total	**4.2921**	**45.6088**				**2.3654**	**20.4317**		**2.1762**	**12.1069**						**3,965.529 7**

3.3 Site Preparation - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	0.0698	0.0902				1.5200e-003	0.2314		1.4000e-003	0.0624						221.5550
Total	**0.0698**	**0.0902**				**1.5200e-003**	**0.2314**		**1.4000e-003**	**0.0624**						**221.5550**

3.4 Grading - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust						0.0000	8.6733		0.0000	3.5965						0.0000
Off-Road	5.2895	59.5338				2.7880	2.7880		2.5650	2.5650						6,253.4209
Total	**5.2895**	**59.5338**				**2.7880**	**11.4614**		**2.5650**	**6.1615**						**6,253.4209**

3.4 Grading - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	0.0775	0.1002				1.6900e-003	0.2572		1.5600e-003	0.0693						246.1722
Total	**0.0775**	**0.1002**				**1.6900e-003**	**0.2572**		**1.5600e-003**	**0.0693**						**246.1722**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust						0.0000	8.6733		0.0000	3.5965						0.0000
Off-Road	5.2895	59.5338				2.7880	2.7880		2.5650	2.5650						6,253.4209
Total	**5.2895**	**59.5338**				**2.7880**	**11.4614**		**2.5650**	**6.1615**						**6,253.4209**

3.4 Grading - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	0.0775	0.1002				1.6900e-003	0.2572		1.5600e-003	0.0693						246.1722
Total	**0.0775**	**0.1002**				**1.6900e-003**	**0.2572**		**1.5600e-003**	**0.0693**						**246.1722**

3.4 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust						0.0000	8.6733		0.0000	3.5965						0.0000
Off-Road	4.8912	54.1978				2.5049	2.5049		2.3045	2.3045						6,151.9167
Total	**4.8912**	**54.1978**				**2.5049**	**11.1783**		**2.3045**	**5.9010**						**6,151.9167**

3.4 Grading - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	0.0700	0.0912				1.6600e-003	0.2571		1.5400e-003	0.0693						236.5885
Total	**0.0700**	**0.0912**				**1.6600e-003**	**0.2571**		**1.5400e-003**	**0.0693**						**236.5885**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust						0.0000	8.6733		0.0000	3.5965						0.0000
Off-Road	4.8912	54.1978				2.5049	2.5049		2.3045	2.3045						6,151.916 7
Total	**4.8912**	**54.1978**				**2.5049**	**11.1783**		**2.3045**	**5.9010**						**6,151.916 7**

3.4 Grading - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	0.0700	0.0912				1.6600e-003	0.2571		1.5400e-003	0.0693						236.5885
Total	**0.0700**	**0.0912**				**1.6600e-003**	**0.2571**		**1.5400e-003**	**0.0693**						**236.5885**

3.5 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3516	20.9650				1.2850	1.2850		1.2083	1.2083						2,593.9479
Total	**2.3516**	**20.9650**				**1.2850**	**1.2850**		**1.2083**	**1.2083**						**2,593.9479**

3.5 Building Construction - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.6083	4.5943				0.0764	0.5383		0.0703	0.2020						1,581.547 1
Worker	0.9654	1.2588				0.0229	3.5482		0.0212	0.9561						3,264.921 6
Total	**1.5737**	**5.8531**				**0.0993**	**4.0866**		**0.0915**	**1.1581**						**4,846.468 7**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3516	20.9650				1.2850	1.2850		1.2083	1.2083						2,593.947 9
Total	**2.3516**	**20.9650**				**1.2850**	**1.2850**		**1.2083**	**1.2083**						**2,593.947 9**

3.5 Building Construction - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.6083	4.5943				0.0764	0.5383		0.0703	0.2020						1,581.547 1
Worker	0.9654	1.2588				0.0229	3.5482		0.0212	0.9561						3,264.921 6
Total	**1.5737**	**5.8531**				**0.0993**	**4.0866**		**0.0915**	**1.1581**						**4,846.468 7**

3.5 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1113	19.0839				1.1128	1.1128		1.0465	1.0465						2,555.488 0
Total	**2.1113**	**19.0839**				**1.1128**	**1.1128**		**1.0465**	**1.0465**						**2,555.488 0**

3.5 Building Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.5308	3.9661				0.0683	0.5302		0.0628	0.1946						1,545.288 7
Worker	0.8886	1.1617				0.0227	3.5481		0.0211	0.9560						3,135.662 7
Total	**1.4194**	**5.1278**				**0.0910**	**4.0783**		**0.0839**	**1.1505**						**4,680.951 4**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1113	19.0839				1.1128	1.1128		1.0465	1.0465						2,555.488 0
Total	**2.1113**	**19.0839**				**1.1128**	**1.1128**		**1.0465**	**1.0465**						**2,555.488 0**

3.5 Building Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.5308	3.9661				0.0683	0.5302		0.0628	0.1946						1,545.288 7
Worker	0.8886	1.1617				0.0227	3.5481		0.0211	0.9560						3,135.662 7
Total	**1.4194**	**5.1278**				**0.0910**	**4.0783**		**0.0839**	**1.1505**						**4,680.951 4**

3.5 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.8931	17.3403				0.9549	0.9549		0.8979	0.8979						2,555.646 2
Total	**1.8931**	**17.3403**				**0.9549**	**0.9549**		**0.8979**	**0.8979**						**2,555.646 2**

3.5 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.4890	3.3024				0.0615	0.5236		0.0566	0.1884						1,543.3886
Worker	0.8343	1.0848				0.0228	3.5481		0.0211	0.9560						3,083.4697
Total	**1.3233**	**4.3872**				**0.0843**	**4.0717**		**0.0777**	**1.1444**						**4,626.8583**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.8931	17.3403				0.9549	0.9549		0.8979	0.8979						2,555.6462
Total	**1.8931**	**17.3403**				**0.9549**	**0.9549**		**0.8979**	**0.8979**						**2,555.6462**

3.5 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.4890	3.3024				0.0615	0.5236		0.0566	0.1884						1,543.3886
Worker	0.8343	1.0848				0.0228	3.5481		0.0211	0.9560						3,083.4697
Total	**1.3233**	**4.3872**				**0.0843**	**4.0717**		**0.0777**	**1.1444**						**4,626.8583**

3.5 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6992	15.5364				0.8057	0.8057		0.7581	0.7581						2,556.5286
Total	**1.6992**	**15.5364**				**0.8057**	**0.8057**		**0.7581**	**0.7581**						**2,556.5286**

3.5 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.4752	2.9432				0.0603	0.5225		0.0555	0.1873						1,542.5810
Worker	0.7858	1.0185				0.0228	3.5482		0.0212	0.9561						3,036.2190
Total	**1.2610**	**3.9617**				**0.0832**	**4.0706**		**0.0767**	**1.1434**						**4,578.8000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6992	15.5364				0.8057	0.8057		0.7581	0.7581						2,556.5286
Total	**1.6992**	**15.5364**				**0.8057**	**0.8057**		**0.7581**	**0.7581**						**2,556.5286**

3.5 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.4752	2.9432				0.0603	0.5225		0.0555	0.1873						1,542.581 0
Worker	0.7858	1.0185				0.0228	3.5482		0.0212	0.9561						3,036.219 0
Total	**1.2610**	**3.9617**				**0.0832**	**4.0706**		**0.0767**	**1.1434**						**4,578.800 0**

3.5 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5661	14.3126				0.6967	0.6967		0.6557	0.6557						2,557.319 1
Total	**1.5661**	**14.3126**				**0.6967**	**0.6967**		**0.6557**	**0.6557**						**2,557.319 1**

3.5 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.4454	2.6486				0.0567	0.5189		0.0521	0.1840						1,541.169 9
Worker	0.7419	0.9608				0.0229	3.5483		0.0213	0.9561						2,993.974 9
Total	**1.1872**	**3.6094**				**0.0796**	**4.0671**		**0.0734**	**1.1401**						**4,535.144 8**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5661	14.3126				0.6967	0.6967		0.6557	0.6557						2,557.319 1
Total	**1.5661**	**14.3126**				**0.6967**	**0.6967**		**0.6557**	**0.6557**						**2,557.319 1**

3.5 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.4454	2.6486				0.0567	0.5189		0.0521	0.1840						1,541.169 9
Worker	0.7419	0.9608				0.0229	3.5483		0.0213	0.9561						2,993.974 9
Total	**1.1872**	**3.6094**				**0.0796**	**4.0671**		**0.0734**	**1.1401**						**4,535.144 8**

3.5 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4653	13.3774				0.6106	0.6106		0.5744	0.5744						2,557.734 9
Total	**1.4653**	**13.3774**				**0.6106**	**0.6106**		**0.5744**	**0.5744**						**2,557.734 9**

3.5 Building Construction - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.4363	2.6186				0.0569	0.5192		0.0523	0.1842						1,541.7967
Worker	0.7033	0.9116				0.0230	3.5484		0.0214	0.9562						2,956.6622
Total	**1.1396**	**3.5302**				**0.0799**	**4.0675**		**0.0737**	**1.1405**						**4,498.4589**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4653	13.3774				0.6106	0.6106		0.5744	0.5744						2,557.7349
Total	**1.4653**	**13.3774**				**0.6106**	**0.6106**		**0.5744**	**0.5744**						**2,557.7349**

3.5 Building Construction - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.4363	2.6186				0.0569	0.5192		0.0523	0.1842						1,541.796 7
Worker	0.7033	0.9116				0.0230	3.5484		0.0214	0.9562						2,956.662 2
Total	**1.1396**	**3.5302**				**0.0799**	**4.0675**		**0.0737**	**1.1405**						**4,498.458 9**

3.5 Building Construction - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3615	12.4097				0.5250	0.5250		0.4939	0.4939						2,558.438 6
Total	**1.3615**	**12.4097**				**0.5250**	**0.5250**		**0.4939**	**0.4939**						**2,558.438 6**

3.5 Building Construction - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.4289	2.5912				0.0570	0.5194		0.0524	0.1844						1,542.323 7
Worker	0.6721	0.8708				0.0232	3.5485		0.0215	0.9564						2,924.190 0
Total	**1.1010**	**3.4621**				**0.0802**	**4.0679**		**0.0739**	**1.1408**						**4,466.513 7**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3615	12.4097				0.5250	0.5250		0.4939	0.4939						2,558.438 6
Total	**1.3615**	**12.4097**				**0.5250**	**0.5250**		**0.4939**	**0.4939**						**2,558.438 6**

3.5 Building Construction - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.4289	2.5912				0.0570	0.5194		0.0524	0.1844						1,542.3237
Worker	0.6721	0.8708				0.0232	3.5485		0.0215	0.9564						2,924.1900
Total	**1.1010**	**3.4621**				**0.0802**	**4.0679**		**0.0739**	**1.1408**						**4,466.5137**

3.5 Building Construction - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3615	12.4097				0.5250	0.5250		0.4939	0.4939						2,558.4386
Total	**1.3615**	**12.4097**				**0.5250**	**0.5250**		**0.4939**	**0.4939**						**2,558.4386**

3.5 Building Construction - 2026

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.4236	2.5623				0.0569	0.5194		0.0524	0.1844						1,542.8064
Worker	0.6448	0.8369				0.0234	3.5488		0.0217	0.9566						2,897.7528
Total	**1.0684**	**3.3992**				**0.0803**	**4.0682**		**0.0741**	**1.1410**						**4,440.5591**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3615	12.4097				0.5250	0.5250		0.4939	0.4939						2,558.4386
Total	**1.3615**	**12.4097**				**0.5250**	**0.5250**		**0.4939**	**0.4939**						**2,558.4386**

3.5 Building Construction - 2026

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.4236	2.5623				0.0569	0.5194		0.0524	0.1844						1,542.806 4
Worker	0.6448	0.8369				0.0234	3.5488		0.0217	0.9566						2,897.752 8
Total	**1.0684**	**3.3992**				**0.0803**	**4.0682**		**0.0741**	**1.1410**						**4,440.559 1**

3.5 Building Construction - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3615	12.4097				0.5250	0.5250		0.4939	0.4939						2,558.438 6
Total	**1.3615**	**12.4097**				**0.5250**	**0.5250**		**0.4939**	**0.4939**						**2,558.438 6**

3.5 Building Construction - 2027

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.4208	2.5396				0.0570	0.5196		0.0524	0.1845						1,543.2918
Worker	0.6194	0.8065				0.0236	3.5489		0.0219	0.9568						2,873.7331
Total	**1.0402**	**3.3461**				**0.0806**	**4.0685**		**0.0743**	**1.1412**						**4,417.0248**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3615	12.4097				0.5250	0.5250		0.4939	0.4939						2,558.4386
Total	**1.3615**	**12.4097**				**0.5250**	**0.5250**		**0.4939**	**0.4939**						**2,558.4386**

3.5 Building Construction - 2027

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.4208	2.5396				0.0570	0.5196		0.0524	0.1845						1,543.2918
Worker	0.6194	0.8065				0.0236	3.5489		0.0219	0.9568						2,873.7331
Total	**1.0402**	**3.3461**				**0.0806**	**4.0685**		**0.0743**	**1.1412**						**4,417.0248**

3.5 Building Construction - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3615	12.4097				0.5250	0.5250		0.4939	0.4939						2,558.4386
Total	**1.3615**	**12.4097**				**0.5250**	**0.5250**		**0.4939**	**0.4939**						**2,558.4386**

3.5 Building Construction - 2028

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.4176	2.5195				0.0570	0.5196		0.0524	0.1845						1,543.680 1
Worker	0.5960	0.7791				0.0237	3.5491		0.0220	0.9569						2,853.176 7
Total	**1.0135**	**3.2986**				**0.0807**	**4.0687**		**0.0745**	**1.1414**						**4,396.856 7**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3615	12.4097				0.5250	0.5250		0.4939	0.4939						2,558.438 6
Total	**1.3615**	**12.4097**				**0.5250**	**0.5250**		**0.4939**	**0.4939**						**2,558.438 6**

3.5 Building Construction - 2028

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.4176	2.5195				0.0570	0.5196		0.0524	0.1845						1,543.680 1
Worker	0.5960	0.7791				0.0237	3.5491		0.0220	0.9569						2,853.176 7
Total	**1.0135**	**3.2986**				**0.0807**	**4.0687**		**0.0745**	**1.1414**						**4,396.856 7**

3.5 Building Construction - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3615	12.4097				0.5250	0.5250		0.4939	0.4939						2,558.438 6
Total	**1.3615**	**12.4097**				**0.5250**	**0.5250**		**0.4939**	**0.4939**						**2,558.438 6**

3.5 Building Construction - 2029

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.4143	2.5022				0.0570	0.5197		0.0524	0.1845						1,544.0151
Worker	0.5722	0.7525				0.0239	3.5492		0.0221	0.9570						2,835.5899
Total	**0.9865**	**3.2547**				**0.0808**	**4.0689**		**0.0746**	**1.1415**						**4,379.6050**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3615	12.4097				0.5250	0.5250		0.4939	0.4939						2,558.4386
Total	**1.3615**	**12.4097**				**0.5250**	**0.5250**		**0.4939**	**0.4939**						**2,558.4386**

3.5 Building Construction - 2029

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.4143	2.5022				0.0570	0.5197		0.0524	0.1845						1,544.0151
Worker	0.5722	0.7525				0.0239	3.5492		0.0221	0.9570						2,835.5899
Total	**0.9865**	**3.2547**				**0.0808**	**4.0689**		**0.0746**	**1.1415**						**4,379.6050**

3.5 Building Construction - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3041	7.9179				0.1476	0.1476		0.1476	0.1476						2,887.2617
Total	**1.3041**	**7.9179**				**0.1476**	**0.1476**		**0.1476**	**0.1476**						**2,887.2617**

3.5 Building Construction - 2030

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.4119	2.4859				0.0570	0.5197		0.0524	0.1845						1,544.340 6
Worker	0.5500	0.7284				0.0239	3.5493		0.0222	0.9571						2,820.727 2
Total	**0.9619**	**3.2143**				**0.0809**	**4.0690**		**0.0746**	**1.1416**						**4,365.067 8**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3041	7.9179				0.1476	0.1476		0.1476	0.1476						2,887.261 7
Total	**1.3041**	**7.9179**				**0.1476**	**0.1476**		**0.1476**	**0.1476**						**2,887.261 7**

3.5 Building Construction - 2030

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.4119	2.4859				0.0570	0.5197		0.0524	0.1845						1,544.340 6
Worker	0.5500	0.7284				0.0239	3.5493		0.0222	0.9571						2,820.727 2
Total	**0.9619**	**3.2143**				**0.0809**	**4.0690**		**0.0746**	**1.1416**						**4,365.067 8**

3.5 Building Construction - 2031

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3041	7.9179				0.1476	0.1476		0.1476	0.1476						2,887.261 7
Total	**1.3041**	**7.9179**				**0.1476**	**0.1476**		**0.1476**	**0.1476**						**2,887.261 7**

3.5 Building Construction - 2031

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.4102	2.4733				0.0570	0.5198		0.0525	0.1846						1,544.776 9
Worker	0.5285	0.7055				0.0240	3.5493		0.0222	0.9571						2,808.267 2
Total	**0.9387**	**3.1788**				**0.0810**	**4.0692**		**0.0747**	**1.1417**						**4,353.044 1**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3041	7.9179				0.1476	0.1476		0.1476	0.1476						2,887.261 7
Total	**1.3041**	**7.9179**				**0.1476**	**0.1476**		**0.1476**	**0.1476**						**2,887.261 7**

3.5 Building Construction - 2031

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.4102	2.4733				0.0570	0.5198		0.0525	0.1846						1,544.776 9
Worker	0.5285	0.7055				0.0240	3.5493		0.0222	0.9571						2,808.267 2
Total	**0.9387**	**3.1788**				**0.0810**	**4.0692**		**0.0747**	**1.1417**						**4,353.044 1**

3.6 Paving - 2031

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3549	6.9800				0.3234	0.3234		0.3234	0.3234						2,602.546 0
Paving	0.0000					0.0000	0.0000		0.0000	0.0000						0.0000
Total	**1.3549**	**6.9800**				**0.3234**	**0.3234**		**0.3234**	**0.3234**						**2,602.546 0**

3.6 Paving - 2031

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	0.0287	0.0383				1.3000e-003	0.1929		1.2100e-003	0.0520						152.6232
Total	**0.0287**	**0.0383**				**1.3000e-003**	**0.1929**		**1.2100e-003**	**0.0520**						**152.6232**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3549	6.9800				0.3234	0.3234		0.3234	0.3234						2,602.5460
Paving	0.0000					0.0000	0.0000		0.0000	0.0000						0.0000
Total	**1.3549**	**6.9800**				**0.3234**	**0.3234**		**0.3234**	**0.3234**						**2,602.5460**

3.6 Paving - 2031

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	0.0287	0.0383				1.3000e-003	0.1929		1.2100e-003	0.0520						152.6232
Total	**0.0287**	**0.0383**				**1.3000e-003**	**0.1929**		**1.2100e-003**	**0.0520**						**152.6232**

3.6 Paving - 2032

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3549	6.9800				0.3234	0.3234		0.3234	0.3234						2,602.5460
Paving	0.0000					0.0000	0.0000		0.0000	0.0000						0.0000
Total	**1.3549**	**6.9800**				**0.3234**	**0.3234**		**0.3234**	**0.3234**						**2,602.5460**

3.6 Paving - 2032

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	0.0277	0.0373				1.3000e-003	0.1929		1.2100e-003	0.0520						152.0602
Total	**0.0277**	**0.0373**				**1.3000e-003**	**0.1929**		**1.2100e-003**	**0.0520**						**152.0602**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3549	6.9800				0.3234	0.3234		0.3234	0.3234						2,602.5460
Paving	0.0000					0.0000	0.0000		0.0000	0.0000						0.0000
Total	**1.3549**	**6.9800**				**0.3234**	**0.3234**		**0.3234**	**0.3234**						**2,602.5460**

3.6 Paving - 2032

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	0.0277	0.0373				1.3000e-003	0.1929		1.2100e-003	0.0520						152.0602
Total	**0.0277**	**0.0373**				**1.3000e-003**	**0.1929**		**1.2100e-003**	**0.0520**						**152.0602**

3.7 Architectural Coating - 2032

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	134.6284					0.0000	0.0000		0.0000	0.0000						0.0000
Off-Road	0.1308	0.8563				0.0203	0.0203		0.0203	0.0203						281.6873
Total	**134.7592**	**0.8563**				**0.0203**	**0.0203**		**0.0203**	**0.0203**						**281.6873**

3.7 Architectural Coating - 2032

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	0.1014	0.1368				4.7800e-003	0.7073		4.4400e-003	0.1907						557.5542
Total	**0.1014**	**0.1368**				**4.7800e-003**	**0.7073**		**4.4400e-003**	**0.1907**						**557.5542**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	134.6284					0.0000	0.0000		0.0000	0.0000						0.0000
Off-Road	0.1308	0.8563				0.0203	0.0203		0.0203	0.0203						281.6873
Total	**134.7592**	**0.8563**				**0.0203**	**0.0203**		**0.0203**	**0.0203**						**281.6873**

3.7 Architectural Coating - 2032

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	0.1014	0.1368				4.7800e-003	0.7073		4.4400e-003	0.1907						557.5542
Total	**0.1014**	**0.1368**				**4.7800e-003**	**0.7073**		**4.4400e-003**	**0.1907**						**557.5542**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	27.5726	72.4942				1.0773	45.7235		0.9917	12.9337						58,922.4273
Unmitigated	27.5726	72.4942				1.0773	45.7235		0.9917	12.9337						58,922.4273

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	823.75	895.00	758.75	2,847,154	2,847,154
General Office Building	1,377.64	296.55	122.62	2,882,046	2,882,046
Single Family Housing	1,196.25	1,260.00	1096.25	4,112,282	4,112,282
Single Family Housing	2,679.60	2,822.40	2455.60	9,211,511	9,211,511
Total	6,077.24	5,273.95	4,433.22	19,052,993	19,052,993

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	16.80	7.10	7.90	32.90	18.00	49.10	86	11	3
General Office Building	14.70	6.60	6.60	33.00	48.00	19.00	77	19	4
Single Family Housing	16.80	7.10	7.90	32.90	18.00	49.10	86	11	3
Single Family Housing	16.80	7.10	7.90	32.90	18.00	49.10	86	11	3

4.4 Fleet Mix

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.462115	0.061823	0.181510	0.153742	0.057112	0.007288	0.019722	0.042680	0.001823	0.001665	0.006988	0.000686	0.002845

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.4857	4.1780				0.3356	0.3356		0.3356	0.3356						5,330.4574
NaturalGas Unmitigated	0.4857	4.1780				0.3356	0.3356		0.3356	0.3356						5,330.4574

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Low Rise	4645.91	0.0501	0.4282				0.0346	0.0346		0.0346	0.0346						549.9041
General Office Building	4713.65	0.0508	0.4621				0.0351	0.0351		0.0351	0.0351						557.9220
Single Family Housing	11010.9	0.1187	1.0147				0.0820	0.0820		0.0820	0.0820						1,303.2812
Single Family Housing	24664.4	0.2660	2.2730				0.1838	0.1838		0.1838	0.1838						2,919.3500
Total		**0.4857**	**4.1780**				**0.3356**	**0.3356**		**0.3356**	**0.3356**						**5,330.4574**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Low Rise	4.64591	0.0501	0.4282				0.0346	0.0346		0.0346	0.0346						549.9041
General Office Building	4.71365	0.0508	0.4621				0.0351	0.0351		0.0351	0.0351						557.9220
Single Family Housing	11.0109	0.1187	1.0147				0.0820	0.0820		0.0820	0.0820						1,303.2812
Single Family Housing	24.6644	0.2660	2.2730				0.1838	0.1838		0.1838	0.1838						2,919.3500
Total		**0.4857**	**4.1780**				**0.3356**	**0.3356**		**0.3356**	**0.3356**						**5,330.4574**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1,461.3458	19.9250				247.8945	247.8945		247.8873	247.8873						38,073.3526
Unmitigated	1,461.3458	19.9250				247.8945	247.8945		247.8873	247.8873						38,073.3526

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	8.1146					0.0000	0.0000		0.0000	0.0000						0.0000
Consumer Products	20.9533					0.0000	0.0000		0.0000	0.0000						0.0000
Hearth	1,430.9193	19.4138				247.6541	247.6541		247.6469	247.6469						37,992.9524
Landscaping	1.3587	0.5112				0.2404	0.2404		0.2404	0.2404						80.4002
Total	**1,461.3458**	**19.9250**				**247.8945**	**247.8945**		**247.8872**	**247.8872**						**38,073.3526**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	8.1146					0.0000	0.0000		0.0000	0.0000						0.0000
Consumer Products	20.9533					0.0000	0.0000		0.0000	0.0000						0.0000
Hearth	1,430.919 3	19.4138				247.6541	247.6541		247.6469	247.6469						37,992.95 24
Landscaping	1.3587	0.5112				0.2404	0.2404		0.2404	0.2404						80.4002
Total	**1,461.345 8**	**19.9250**				**247.8945**	**247.8945**		**247.8872**	**247.8872**						**38,073.35 26**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

FolsomHeights_Amendment

Sacramento Valley Air Basin, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	125.13	1000sqft	11.49	125,126.00	0
Apartments Low Rise	125.00	Dwelling Unit	14.91	125,000.00	242
Single Family Housing	125.00	Dwelling Unit	39.72	225,000.00	365
Single Family Housing	280.00	Dwelling Unit	58.20	504,000.00	818

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	65
Climate Zone	6			**Operational Year**	2018
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	590.31	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Running defaults for operational modeling for 2018.

Land Use - Target DU, Lot Acreages, and Population Based on Table 2-2.

Table Name	Column Name	Default Value	New Value
tblLandUse	LotAcreage	2.87	11.49
tblLandUse	LotAcreage	7.81	14.91
tblLandUse	LotAcreage	40.58	39.72
tblLandUse	LotAcreage	90.91	58.20
tblLandUse	Population	358.00	242.00
tblLandUse	Population	358.00	365.00
tblLandUse	Population	801.00	818.00
tblProjectCharacteristics	OperationalYear	2014	2018
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	4.9074	51.8791				2.7558	21.0520		2.5353	12.5270						4,231.241 6
2018	5.3557	59.6586				2.7897	20.6631		2.5665	12.1692						6,469.764 1
2019	4.9503	54.3113				2.5066	11.4354		2.3061	5.9703						7,055.704 1
2020	3.5190	24.7451				1.2048	5.1921		1.1312	2.1978						6,842.904 8
2021	3.1942	22.1966				1.0400	5.0274		0.9763	2.0430						6,795.006 2
2022	2.9349	19.9258				0.8897	4.8771		0.8355	1.9022						6,753.232 5
2023	2.7225	18.3118				0.7768	4.7644		0.7295	1.7963						6,715.092 0
2024	2.5743	17.2811				0.6910	4.6786		0.6485	1.7153						6,682.983 4
2025	2.4312	16.2318				0.6057	4.5935		0.5683	1.6352						6,655.339 6
2026	2.3991	16.1575				0.6059	4.5937		0.5685	1.6354						6,632.330 2
2027	2.3725	16.0946				0.6061	4.5940		0.5687	1.6356						6,611.4023
2028	2.3470	16.0383				0.6063	4.5943		0.5689	1.6358						6,593.412 2
2029	2.3222	15.9860				0.6064	4.5944		0.5690	1.6359						6,577.956 2
2030	2.2443	11.4463				0.2291	4.2172		0.2227	1.2897						6,893.724 4
2031	2.2252	11.4039				0.3247	4.2173		0.3246	1.2898						6,882.945 4
2032	134.8459	7.0259				0.3247	0.7276		0.3246	0.3754						2,735.958 0
Total	**181.3455**	**378.6936**				**16.5631**	**109.8220**		**15.4443**	**51.4539**						**101,128.9 970**

2.1 Overall Construction (Maximum Daily Emission)

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	4.9074	51.8791				2.7558	21.0520		2.5353	12.5270						4,231.241 6
2018	5.3557	59.6586				2.7897	20.6631		2.5665	12.1692						6,469.764 1
2019	4.9503	54.3113				2.5066	11.4354		2.3061	5.9703						7,055.704 1
2020	3.5190	24.7451				1.2048	5.1921		1.1312	2.1978						6,842.904 8
2021	3.1942	22.1966				1.0400	5.0274		0.9763	2.0430						6,795.006 2
2022	2.9349	19.9258				0.8897	4.8771		0.8355	1.9022						6,753.232 5
2023	2.7225	18.3118				0.7768	4.7644		0.7295	1.7963						6,715.092 0
2024	2.5743	17.2811				0.6910	4.6786		0.6485	1.7153						6,682.983 4
2025	2.4312	16.2318				0.6057	4.5935		0.5683	1.6352						6,655.339 6
2026	2.3991	16.1575				0.6059	4.5937		0.5685	1.6354						6,632.330 2
2027	2.3725	16.0946				0.6061	4.5940		0.5687	1.6356						6,611.4023
2028	2.3470	16.0383				0.6063	4.5943		0.5689	1.6358						6,593.412 2
2029	2.3222	15.9860				0.6064	4.5944		0.5690	1.6359						6,577.956 2
2030	2.2443	11.4463				0.2291	4.2172		0.2227	1.2897						6,893.724 4
2031	2.2252	11.4039				0.3247	4.2173		0.3246	1.2898						6,882.945 4
2032	134.8459	7.0259				0.3247	0.7276		0.3246	0.3754						2,735.958 0
Total	**181.3455**	**378.6936**				**16.5631**	**109.8220**		**15.4443**	**51.4539**						**101,128.9 969**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	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

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1,461.3458	19.9250				247.8945	247.8945		247.8873	247.8873						38,073.3526
Energy	0.4857	4.1780				0.3356	0.3356		0.3356	0.3356						5,330.4574
Mobile	26.2840	81.5946				1.0828	45.7289		0.9967	12.9387						54,032.2687
Total	**1,488.1155**	**105.6976**				**249.3128**	**293.9590**		**249.2195**	**261.1615**						**97,436.0786**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1,461.3458	19.9250				247.8945	247.8945		247.8873	247.8873						38,073.3526
Energy	0.4857	4.1780				0.3356	0.3356		0.3356	0.3356						5,330.4574
Mobile	26.2840	81.5946				1.0828	45.7289		0.9967	12.9387						54,032.2687
Total	**1,488.1155**	**105.6976**				**249.3128**	**293.9590**		**249.2195**	**261.1615**						**97,436.0786**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2017	10/6/2017	5	200	
2	Site Preparation	Site Preparation	10/7/2017	3/23/2018	5	120	
3	Grading	Grading	3/24/2018	5/31/2019	5	310	
4	Building Construction	Building Construction	6/1/2019	4/18/2031	5	3100	
5	Paving	Paving	4/19/2031	2/20/2032	5	220	
6	Architectural Coating	Architectural Coating	2/21/2032	12/24/2032	5	220	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 775

Acres of Paving: 0

Residential Indoor: 1,729,350; Residential Outdoor: 576,450; Non-Residential Indoor: 187,689; Non-Residential Outdoor: 62,563 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	162	0.38
Demolition	Rubber Tired Dozers	2	8.00	255	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	276.00	77.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	55.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.0482	42.6971				2.1252	2.1252		1.9797	1.9797						4,059.7211
Total	**4.0482**	**42.6971**				**2.1252**	**2.1252**		**1.9797**	**1.9797**						**4,059.7211**

3.2 Demolition - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	0.0577	0.1047				1.3100e-003	0.1929		1.2000e-003	0.0520						168.6653
Total	**0.0577**	**0.1047**				**1.3100e-003**	**0.1929**		**1.2000e-003**	**0.0520**						**168.6653**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.0482	42.6971				2.1252	2.1252		1.9797	1.9797						4,059.7211
Total	**4.0482**	**42.6971**				**2.1252**	**2.1252**		**1.9797**	**1.9797**						**4,059.7211**

3.2 Demolition - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	0.0577	0.1047				1.3100e-003	0.1929		1.2000e-003	0.0520						168.6653
Total	**0.0577**	**0.1047**				**1.3100e-003**	**0.1929**		**1.2000e-003**	**0.0520**						**168.6653**

3.3 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust						0.0000	18.0663		0.0000	9.9307						0.0000
Off-Road	4.8382	51.7535				2.7542	2.7542		2.5339	2.5339						4,028.8432
Total	**4.8382**	**51.7535**				**2.7542**	**20.8205**		**2.5339**	**12.4646**						**4,028.8432**

3.3 Site Preparation - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	0.0692	0.1257				1.5700e-003	0.2315		1.4400e-003	0.0624						202.3984
Total	**0.0692**	**0.1257**				**1.5700e-003**	**0.2315**		**1.4400e-003**	**0.0624**						**202.3984**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust						0.0000	18.0663		0.0000	9.9307						0.0000
Off-Road	4.8382	51.7535				2.7542	2.7542		2.5339	2.5339						4,028.8432
Total	**4.8382**	**51.7535**				**2.7542**	**20.8205**		**2.5339**	**12.4646**						**4,028.8432**

3.3 Site Preparation - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	0.0692	0.1257				1.5700e-003	0.2315		1.4400e-003	0.0624						202.3984
Total	**0.0692**	**0.1257**				**1.5700e-003**	**0.2315**		**1.4400e-003**	**0.0624**						**202.3984**

3.3 Site Preparation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust						0.0000	18.0663		0.0000	9.9307						0.0000
Off-Road	4.2921	45.6088				2.3654	2.3654		2.1762	2.1762						3,965.529 7
Total	**4.2921**	**45.6088**				**2.3654**	**20.4317**		**2.1762**	**12.1069**						**3,965.529 7**

3.3 Site Preparation - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	0.0595	0.1123				1.5200e-003	0.2314		1.4000e-003	0.0624						194.7089
Total	**0.0595**	**0.1123**				**1.5200e-003**	**0.2314**		**1.4000e-003**	**0.0624**						**194.7089**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust						0.0000	18.0663		0.0000	9.9307						0.0000
Off-Road	4.2921	45.6088				2.3654	2.3654		2.1762	2.1762						3,965.5297
Total	**4.2921**	**45.6088**				**2.3654**	**20.4317**		**2.1762**	**12.1069**						**3,965.5297**

3.3 Site Preparation - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	0.0595	0.1123				1.5200e-003	0.2314		1.4000e-003	0.0624						194.7089
Total	**0.0595**	**0.1123**				**1.5200e-003**	**0.2314**		**1.4000e-003**	**0.0624**						**194.7089**

3.4 Grading - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust						0.0000	8.6733		0.0000	3.5965						0.0000
Off-Road	5.2895	59.5338				2.7880	2.7880		2.5650	2.5650						6,253.4209
Total	**5.2895**	**59.5338**				**2.7880**	**11.4614**		**2.5650**	**6.1615**						**6,253.4209**

3.4 Grading - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	0.0662	0.1248				1.6900e-003	0.2572		1.5600e-003	0.0693						216.3432
Total	**0.0662**	**0.1248**				**1.6900e-003**	**0.2572**		**1.5600e-003**	**0.0693**						**216.3432**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust						0.0000	8.6733		0.0000	3.5965						0.0000
Off-Road	5.2895	59.5338				2.7880	2.7880		2.5650	2.5650						6,253.4209
Total	**5.2895**	**59.5338**				**2.7880**	**11.4614**		**2.5650**	**6.1615**						**6,253.4209**

3.4 Grading - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	0.0662	0.1248				1.6900e-003	0.2572		1.5600e-003	0.0693						216.3432
Total	**0.0662**	**0.1248**				**1.6900e-003**	**0.2572**		**1.5600e-003**	**0.0693**						**216.3432**

3.4 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust						0.0000	8.6733		0.0000	3.5965						0.0000
Off-Road	4.8912	54.1978				2.5049	2.5049		2.3045	2.3045						6,151.9167
Total	**4.8912**	**54.1978**				**2.5049**	**11.1783**		**2.3045**	**5.9010**						**6,151.9167**

3.4 Grading - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	0.0591	0.1135				1.6600e-003	0.2571		1.5400e-003	0.0693						207.9094
Total	**0.0591**	**0.1135**				**1.6600e-003**	**0.2571**		**1.5400e-003**	**0.0693**						**207.9094**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust						0.0000	8.6733		0.0000	3.5965						0.0000
Off-Road	4.8912	54.1978				2.5049	2.5049		2.3045	2.3045						6,151.9167
Total	**4.8912**	**54.1978**				**2.5049**	**11.1783**		**2.3045**	**5.9010**						**6,151.9167**

3.4 Grading - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	0.0591	0.1135				1.6600e-003	0.2571		1.5400e-003	0.0693						207.9094
Total	**0.0591**	**0.1135**				**1.6600e-003**	**0.2571**		**1.5400e-003**	**0.0693**						**207.9094**

3.5 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3516	20.9650				1.2850	1.2850		1.2083	1.2083						2,593.9479
Total	**2.3516**	**20.9650**				**1.2850**	**1.2850**		**1.2083**	**1.2083**						**2,593.9479**

3.5 Building Construction - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.7687	4.8911				0.0775	0.5394		0.0713	0.2030						1,568.131 8
Worker	0.8157	1.5665				0.0229	3.5482		0.0212	0.9561						2,869.149 7
Total	**1.5843**	**6.4576**				**0.1004**	**4.0876**		**0.0924**	**1.1591**						**4,437.281 5**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3516	20.9650				1.2850	1.2850		1.2083	1.2083						2,593.947 9
Total	**2.3516**	**20.9650**				**1.2850**	**1.2850**		**1.2083**	**1.2083**						**2,593.947 9**

3.5 Building Construction - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.7687	4.8911				0.0775	0.5394		0.0713	0.2030						1,568.1318
Worker	0.8157	1.5665				0.0229	3.5482		0.0212	0.9561						2,869.1497
Total	**1.5843**	**6.4576**				**0.1004**	**4.0876**		**0.0924**	**1.1591**						**4,437.2815**

3.5 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1113	19.0839				1.1128	1.1128		1.0465	1.0465						2,555.4880
Total	**2.1113**	**19.0839**				**1.1128**	**1.1128**		**1.0465**	**1.0465**						**2,555.4880**

3.5 Building Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.6595	4.2175				0.0692	0.5311		0.0637	0.1954						1,532.138 6
Worker	0.7482	1.4436				0.0227	3.5481		0.0211	0.9560						2,755.278 1
Total	**1.4077**	**5.6612**				**0.0919**	**4.0792**		**0.0847**	**1.1514**						**4,287.416 8**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1113	19.0839				1.1128	1.1128		1.0465	1.0465						2,555.488 0
Total	**2.1113**	**19.0839**				**1.1128**	**1.1128**		**1.0465**	**1.0465**						**2,555.488 0**

3.5 Building Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.6595	4.2175				0.0692	0.5311		0.0637	0.1954						1,532.138 6
Worker	0.7482	1.4436				0.0227	3.5481		0.0211	0.9560						2,755.278 1
Total	**1.4077**	**5.6612**				**0.0919**	**4.0792**		**0.0847**	**1.1514**						**4,287.416 8**

3.5 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.8931	17.3403				0.9549	0.9549		0.8979	0.8979						2,555.646 2
Total	**1.8931**	**17.3403**				**0.9549**	**0.9549**		**0.8979**	**0.8979**						**2,555.646 2**

3.5 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.5990	3.5096				0.0623	0.5244		0.0574	0.1891						1,530.2314
Worker	0.7022	1.3468				0.0228	3.5481		0.0211	0.9560						2,709.1286
Total	**1.3011**	**4.8563**				**0.0851**	**4.0725**		**0.0785**	**1.1451**						**4,239.3600**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.8931	17.3403				0.9549	0.9549		0.8979	0.8979						2,555.6462
Total	**1.8931**	**17.3403**				**0.9549**	**0.9549**		**0.8979**	**0.8979**						**2,555.6462**

3.5 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.5990	3.5096				0.0623	0.5244		0.0574	0.1891						1,530.2314
Worker	0.7022	1.3468				0.0228	3.5481		0.0211	0.9560						2,709.1286
Total	**1.3011**	**4.8563**				**0.0851**	**4.0725**		**0.0785**	**1.1451**						**4,239.3600**

3.5 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6992	15.5364				0.8057	0.8057		0.7581	0.7581						2,556.5286
Total	**1.6992**	**15.5364**				**0.8057**	**0.8057**		**0.7581**	**0.7581**						**2,556.5286**

3.5 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.5745	3.1264				0.0611	0.5232		0.0562	0.1880						1,529.425 0
Worker	0.6612	1.2631				0.0228	3.5482		0.0212	0.9561						2,667.278 9
Total	**1.2357**	**4.3895**				**0.0839**	**4.0714**		**0.0774**	**1.1441**						**4,196.703 8**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6992	15.5364				0.8057	0.8057		0.7581	0.7581						2,556.528 6
Total	**1.6992**	**15.5364**				**0.8057**	**0.8057**		**0.7581**	**0.7581**						**2,556.528 6**

3.5 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.5745	3.1264				0.0611	0.5232		0.0562	0.1880						1,529.425 0
Worker	0.6612	1.2631				0.0228	3.5482		0.0212	0.9561						2,667.278 9
Total	**1.2357**	**4.3895**				**0.0839**	**4.0714**		**0.0774**	**1.1441**						**4,196.703 8**

3.5 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5661	14.3126				0.6967	0.6967		0.6557	0.6557						2,557.319 1
Total	**1.5661**	**14.3126**				**0.6967**	**0.6967**		**0.6557**	**0.6557**						**2,557.319 1**

3.5 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.5321	2.8092				0.0572	0.5194		0.0526	0.1845						1,527.985 0
Worker	0.6243	1.1900				0.0229	3.5483		0.0213	0.9561						2,629.787 9
Total	**1.1564**	**3.9992**				**0.0801**	**4.0677**		**0.0739**	**1.1406**						**4,157.772 9**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5661	14.3126				0.6967	0.6967		0.6557	0.6557						2,557.319 1
Total	**1.5661**	**14.3126**				**0.6967**	**0.6967**		**0.6557**	**0.6557**						**2,557.319 1**

3.5 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.5321	2.8092				0.0572	0.5194		0.0526	0.1845						1,527.985 0
Worker	0.6243	1.1900				0.0229	3.5483		0.0213	0.9561						2,629.787 9
Total	**1.1564**	**3.9992**				**0.0801**	**4.0677**		**0.0739**	**1.1406**						**4,157.772 9**

3.5 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4653	13.3774				0.6106	0.6106		0.5744	0.5744						2,557.734 9
Total	**1.4653**	**13.3774**				**0.6106**	**0.6106**		**0.5744**	**0.5744**						**2,557.734 9**

3.5 Building Construction - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.5169	2.7759				0.0574	0.5197		0.0528	0.1847						1,528.6086
Worker	0.5921	1.1278				0.0230	3.5484		0.0214	0.9562						2,596.6399
Total	**1.1090**	**3.9037**				**0.0804**	**4.0681**		**0.0742**	**1.1410**						**4,125.2485**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4653	13.3774				0.6106	0.6106		0.5744	0.5744						2,557.7349
Total	**1.4653**	**13.3774**				**0.6106**	**0.6106**		**0.5744**	**0.5744**						**2,557.7349**

3.5 Building Construction - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.5169	2.7759				0.0574	0.5197		0.0528	0.1847						1,528.6086
Worker	0.5921	1.1278				0.0230	3.5484		0.0214	0.9562						2,596.6399
Total	**1.1090**	**3.9037**				**0.0804**	**4.0681**		**0.0742**	**1.1410**						**4,125.2485**

3.5 Building Construction - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3615	12.4097				0.5250	0.5250		0.4939	0.4939						2,558.4386
Total	**1.3615**	**12.4097**				**0.5250**	**0.5250**		**0.4939**	**0.4939**						**2,558.4386**

3.5 Building Construction - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.5037	2.7457				0.0575	0.5199		0.0529	0.1849						1,529.132 7
Worker	0.5660	1.0764				0.0232	3.5485		0.0215	0.9564						2,567.768 3
Total	**1.0697**	**3.8221**				**0.0807**	**4.0685**		**0.0744**	**1.1413**						**4,096.901 0**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3615	12.4097				0.5250	0.5250		0.4939	0.4939						2,558.438 6
Total	**1.3615**	**12.4097**				**0.5250**	**0.5250**		**0.4939**	**0.4939**						**2,558.438 6**

3.5 Building Construction - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.5037	2.7457				0.0575	0.5199		0.0529	0.1849						1,529.132 7
Worker	0.5660	1.0764				0.0232	3.5485		0.0215	0.9564						2,567.768 3
Total	**1.0697**	**3.8221**				**0.0807**	**4.0685**		**0.0744**	**1.1413**						**4,096.901 0**

3.5 Building Construction - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3615	12.4097				0.5250	0.5250		0.4939	0.4939						2,558.438 6
Total	**1.3615**	**12.4097**				**0.5250**	**0.5250**		**0.4939**	**0.4939**						**2,558.438 6**

3.5 Building Construction - 2026

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.4942	2.7141				0.0575	0.5200		0.0529	0.1849						1,529.613 2
Worker	0.5435	1.0338				0.0234	3.5488		0.0217	0.9566						2,544.278 5
Total	**1.0376**	**3.7478**				**0.0809**	**4.0687**		**0.0746**	**1.1415**						**4,073.891 7**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3615	12.4097				0.5250	0.5250		0.4939	0.4939						2,558.438 6
Total	**1.3615**	**12.4097**				**0.5250**	**0.5250**		**0.4939**	**0.4939**						**2,558.438 6**

3.5 Building Construction - 2026

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.4942	2.7141				0.0575	0.5200		0.0529	0.1849						1,529.6132
Worker	0.5435	1.0338				0.0234	3.5488		0.0217	0.9566						2,544.2785
Total	**1.0376**	**3.7478**				**0.0809**	**4.0687**		**0.0746**	**1.1415**						**4,073.8917**

3.5 Building Construction - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3615	12.4097				0.5250	0.5250		0.4939	0.4939						2,558.4386
Total	**1.3615**	**12.4097**				**0.5250**	**0.5250**		**0.4939**	**0.4939**						**2,558.4386**

3.5 Building Construction - 2027

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.4884	2.6895				0.0575	0.5201		0.0529	0.1849						1,530.0969
Worker	0.5226	0.9955				0.0236	3.5489		0.0219	0.9568						2,522.8669
Total	**1.0110**	**3.6850**				**0.0811**	**4.0690**		**0.0748**	**1.1417**						**4,052.9638**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3615	12.4097				0.5250	0.5250		0.4939	0.4939						2,558.4386
Total	**1.3615**	**12.4097**				**0.5250**	**0.5250**		**0.4939**	**0.4939**						**2,558.4386**

3.5 Building Construction - 2027

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.4884	2.6895				0.0575	0.5201		0.0529	0.1849						1,530.0969
Worker	0.5226	0.9955				0.0236	3.5489		0.0219	0.9568						2,522.8669
Total	**1.0110**	**3.6850**				**0.0811**	**4.0690**		**0.0748**	**1.1417**						**4,052.9638**

3.5 Building Construction - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3615	12.4097				0.5250	0.5250		0.4939	0.4939						2,558.4386
Total	**1.3615**	**12.4097**				**0.5250**	**0.5250**		**0.4939**	**0.4939**						**2,558.4386**

3.5 Building Construction - 2028

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.4819	2.6676				0.0575	0.5202		0.0529	0.1850						1,530.4836
Worker	0.5036	0.9610				0.0237	3.5491		0.0220	0.9569						2,504.4901
Total	**0.9855**	**3.6286**				**0.0813**	**4.0693**		**0.0750**	**1.1419**						**4,034.9737**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3615	12.4097				0.5250	0.5250		0.4939	0.4939						2,558.4386
Total	**1.3615**	**12.4097**				**0.5250**	**0.5250**		**0.4939**	**0.4939**						**2,558.4386**

3.5 Building Construction - 2028

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.4819	2.6676				0.0575	0.5202		0.0529	0.1850						1,530.483 6
Worker	0.5036	0.9610				0.0237	3.5491		0.0220	0.9569						2,504.490 1
Total	**0.9855**	**3.6286**				**0.0813**	**4.0693**		**0.0750**	**1.1419**						**4,034.973 7**

3.5 Building Construction - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3615	12.4097				0.5250	0.5250		0.4939	0.4939						2,558.438 6
Total	**1.3615**	**12.4097**				**0.5250**	**0.5250**		**0.4939**	**0.4939**						**2,558.438 6**

3.5 Building Construction - 2029

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.4762	2.6489				0.0575	0.5202		0.0529	0.1850						1,530.817 4
Worker	0.4846	0.9275				0.0239	3.5492		0.0221	0.9570						2,488.700 3
Total	**0.9608**	**3.5764**				**0.0814**	**4.0694**		**0.0750**	**1.1420**						**4,019.517 6**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3615	12.4097				0.5250	0.5250		0.4939	0.4939						2,558.438 6
Total	**1.3615**	**12.4097**				**0.5250**	**0.5250**		**0.4939**	**0.4939**						**2,558.438 6**

3.5 Building Construction - 2029

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.4762	2.6489				0.0575	0.5202		0.0529	0.1850						1,530.817 4
Worker	0.4846	0.9275				0.0239	3.5492		0.0221	0.9570						2,488.700 3
Total	**0.9608**	**3.5764**				**0.0814**	**4.0694**		**0.0750**	**1.1420**						**4,019.517 6**

3.5 Building Construction - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3041	7.9179				0.1476	0.1476		0.1476	0.1476						2,887.261 7
Total	**1.3041**	**7.9179**				**0.1476**	**0.1476**		**0.1476**	**0.1476**						**2,887.261 7**

3.5 Building Construction - 2030

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.4729	2.6312				0.0575	0.5203		0.0529	0.1850						1,531.141 8
Worker	0.4673	0.8971				0.0239	3.5493		0.0222	0.9571						2,475.321 0
Total	**0.9402**	**3.5284**				**0.0815**	**4.0696**		**0.0751**	**1.1421**						**4,006.462 7**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3041	7.9179				0.1476	0.1476		0.1476	0.1476						2,887.261 7
Total	**1.3041**	**7.9179**				**0.1476**	**0.1476**		**0.1476**	**0.1476**						**2,887.261 7**

3.5 Building Construction - 2030

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.4729	2.6312				0.0575	0.5203		0.0529	0.1850						1,531.141 8
Worker	0.4673	0.8971				0.0239	3.5493		0.0222	0.9571						2,475.321 0
Total	**0.9402**	**3.5284**				**0.0815**	**4.0696**		**0.0751**	**1.1421**						**4,006.462 7**

3.5 Building Construction - 2031

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3041	7.9179				0.1476	0.1476		0.1476	0.1476						2,887.261 7
Total	**1.3041**	**7.9179**				**0.1476**	**0.1476**		**0.1476**	**0.1476**						**2,887.261 7**

3.5 Building Construction - 2031

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.4706	2.6177				0.0575	0.5204		0.0529	0.1851						1,531.576 9
Worker	0.4504	0.8683				0.0240	3.5493		0.0222	0.9571						2,464.106 8
Total	**0.9211**	**3.4860**				**0.0815**	**4.0697**		**0.0752**	**1.1422**						**3,995.683 7**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3041	7.9179				0.1476	0.1476		0.1476	0.1476						2,887.261 7
Total	**1.3041**	**7.9179**				**0.1476**	**0.1476**		**0.1476**	**0.1476**						**2,887.261 7**

3.5 Building Construction - 2031

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.4706	2.6177				0.0575	0.5204		0.0529	0.1851						1,531.576 9
Worker	0.4504	0.8683				0.0240	3.5493		0.0222	0.9571						2,464.106 8
Total	**0.9211**	**3.4860**				**0.0815**	**4.0697**		**0.0752**	**1.1422**						**3,995.683 7**

3.6 Paving - 2031

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3549	6.9800				0.3234	0.3234		0.3234	0.3234						2,602.546 0
Paving	0.0000					0.0000	0.0000		0.0000	0.0000						0.0000
Total	**1.3549**	**6.9800**				**0.3234**	**0.3234**		**0.3234**	**0.3234**						**2,602.546 0**

3.6 Paving - 2031

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	0.0245	0.0472				1.3000e-003	0.1929		1.2100e-003	0.0520						133.9189
Total	**0.0245**	**0.0472**				**1.3000e-003**	**0.1929**		**1.2100e-003**	**0.0520**						**133.9189**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3549	6.9800				0.3234	0.3234		0.3234	0.3234						2,602.5460
Paving	0.0000					0.0000	0.0000		0.0000	0.0000						0.0000
Total	**1.3549**	**6.9800**				**0.3234**	**0.3234**		**0.3234**	**0.3234**						**2,602.5460**

3.6 Paving - 2031

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	0.0245	0.0472				1.3000e-003	0.1929		1.2100e-003	0.0520						133.9189
Total	**0.0245**	**0.0472**				**1.3000e-003**	**0.1929**		**1.2100e-003**	**0.0520**						**133.9189**

3.6 Paving - 2032

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3549	6.9800				0.3234	0.3234		0.3234	0.3234						2,602.546 0
Paving	0.0000					0.0000	0.0000		0.0000	0.0000						0.0000
Total	**1.3549**	**6.9800**				**0.3234**	**0.3234**		**0.3234**	**0.3234**						**2,602.546 0**

3.6 Paving - 2032

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	0.0237	0.0459				1.3000e-003	0.1929		1.2100e-003	0.0520						133.4120
Total	**0.0237**	**0.0459**				**1.3000e-003**	**0.1929**		**1.2100e-003**	**0.0520**						**133.4120**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3549	6.9800				0.3234	0.3234		0.3234	0.3234						2,602.5460
Paving	0.0000					0.0000	0.0000		0.0000	0.0000						0.0000
Total	**1.3549**	**6.9800**				**0.3234**	**0.3234**		**0.3234**	**0.3234**						**2,602.5460**

3.6 Paving - 2032

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	0.0237	0.0459				1.3000e-003	0.1929		1.2100e-003	0.0520						133.4120
Total	**0.0237**	**0.0459**				**1.3000e-003**	**0.1929**		**1.2100e-003**	**0.0520**						**133.4120**

3.7 Architectural Coating - 2032

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	134.6284					0.0000	0.0000		0.0000	0.0000						0.0000
Off-Road	0.1308	0.8563				0.0203	0.0203		0.0203	0.0203						281.6873
Total	**134.7592**	**0.8563**				**0.0203**	**0.0203**		**0.0203**	**0.0203**						**281.6873**

3.7 Architectural Coating - 2032

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	0.0868	0.1682				4.7800e-003	0.7073		4.4400e-003	0.1907						489.1773
Total	**0.0868**	**0.1682**				**4.7800e-003**	**0.7073**		**4.4400e-003**	**0.1907**						**489.1773**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	134.6284					0.0000	0.0000		0.0000	0.0000						0.0000
Off-Road	0.1308	0.8563				0.0203	0.0203		0.0203	0.0203						281.6873
Total	**134.7592**	**0.8563**				**0.0203**	**0.0203**		**0.0203**	**0.0203**						**281.6873**

3.7 Architectural Coating - 2032

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						0.0000
Worker	0.0868	0.1682				4.7800e-003	0.7073		4.4400e-003	0.1907						489.1773
Total	**0.0868**	**0.1682**				**4.7800e-003**	**0.7073**		**4.4400e-003**	**0.1907**						**489.1773**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	26.2840	81.5946				1.0828	45.7289		0.9967	12.9387						54,032.2687
Unmitigated	26.2840	81.5946				1.0828	45.7289		0.9967	12.9387						54,032.2687

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	823.75	895.00	758.75	2,847,154	2,847,154
General Office Building	1,377.64	296.55	122.62	2,882,046	2,882,046
Single Family Housing	1,196.25	1,260.00	1096.25	4,112,282	4,112,282
Single Family Housing	2,679.60	2,822.40	2455.60	9,211,511	9,211,511
Total	6,077.24	5,273.95	4,433.22	19,052,993	19,052,993

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	16.80	7.10	7.90	32.90	18.00	49.10	86	11	3
General Office Building	14.70	6.60	6.60	33.00	48.00	19.00	77	19	4
Single Family Housing	16.80	7.10	7.90	32.90	18.00	49.10	86	11	3
Single Family Housing	16.80	7.10	7.90	32.90	18.00	49.10	86	11	3

4.4 Fleet Mix

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.462115	0.061823	0.181510	0.153742	0.057112	0.007288	0.019722	0.042680	0.001823	0.001665	0.006988	0.000686	0.002845

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.4857	4.1780				0.3356	0.3356		0.3356	0.3356						5,330.457 4
NaturalGas Unmitigated	0.4857	4.1780				0.3356	0.3356		0.3356	0.3356						5,330.457 4

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Low Rise	4645.91	0.0501	0.4282				0.0346	0.0346		0.0346	0.0346						549.9041
General Office Building	4713.65	0.0508	0.4621				0.0351	0.0351		0.0351	0.0351						557.9220
Single Family Housing	11010.9	0.1187	1.0147				0.0820	0.0820		0.0820	0.0820						1,303.281 2
Single Family Housing	24664.4	0.2660	2.2730				0.1838	0.1838		0.1838	0.1838						2,919.350 0
Total		**0.4857**	**4.1780**				**0.3356**	**0.3356**		**0.3356**	**0.3356**						**5,330.457 4**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Low Rise	4.64591	0.0501	0.4282				0.0346	0.0346		0.0346	0.0346						549.9041
General Office Building	4.71365	0.0508	0.4621				0.0351	0.0351		0.0351	0.0351						557.9220
Single Family Housing	11.0109	0.1187	1.0147				0.0820	0.0820		0.0820	0.0820						1,303.2812
Single Family Housing	24.6644	0.2660	2.2730				0.1838	0.1838		0.1838	0.1838						2,919.3500
Total		**0.4857**	**4.1780**				**0.3356**	**0.3356**		**0.3356**	**0.3356**						**5,330.4574**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1,461.3458	19.9250				247.8945	247.8945		247.8873	247.8873						38,073.3526
Unmitigated	1,461.3458	19.9250				247.8945	247.8945		247.8873	247.8873						38,073.3526

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	8.1146					0.0000	0.0000		0.0000	0.0000						0.0000
Consumer Products	20.9533					0.0000	0.0000		0.0000	0.0000						0.0000
Hearth	1,430.919 3	19.4138				247.6541	247.6541		247.6469	247.6469						37,992.95 24
Landscaping	1.3587	0.5112				0.2404	0.2404		0.2404	0.2404						80.4002
Total	**1,461.345 8**	**19.9250**				**247.8945**	**247.8945**		**247.8872**	**247.8872**						**38,073.35 26**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	8.1146					0.0000	0.0000		0.0000	0.0000						0.0000
Consumer Products	20.9533					0.0000	0.0000		0.0000	0.0000						0.0000
Hearth	1,430.919 3	19.4138				247.6541	247.6541		247.6469	247.6469						37,992.95 24
Landscaping	1.3587	0.5112				0.2404	0.2404		0.2404	0.2404						80.4002
Total	**1,461.345 8**	**19.9250**				**247.8945**	**247.8945**		**247.8872**	**247.8872**						**38,073.35 26**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Appendix B

Transportation Impact Study

MRO ENGINEERS

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March 10, 2016

Ms. Amanda Olekszulin
Ascent Environmental, Inc.
455 Capitol Mall, Suite 300
Sacramento, California 95814

Subject: ***Traffic Analysis for Folsom Heights Project – Folsom, California***

Dear Ms. Olekszulin:

MRO Engineers, Inc. is pleased to submit this letter report documenting the results of a traffic analysis for the proposed Folsom Heights project, which is to be located at the eastern end of the Folsom Plan Area (FPA), immediately south of U.S. Highway 50.

BACKGROUND

The environmental impacts associated with annexation of the FPA into the City of Folsom were addressed in the *Final EIR/EIS – Folsom South of U.S. Highway 50 Specific Plan Project* (AECOM and RMC Water and Environment, May 2011). That document was certified by the Folsom City Council on June 14, 2011.

Given current market conditions, the owners of the 189.7-acre Folsom Heights property have proposed certain modifications to the land use plan included in the approved environmental documentation. Those land use modifications are summarized below:

- The total residential acreage would increase by 13.8 acres, but the number of residential units would be unchanged at 530 single-family units. The distribution of the residential units within the specific zoning categories would be modified, but not in a way that would affect the project trip generation.
- The commercial area would be reduced from 34.5 acres to 11.8 acres.
- The amount of open space would be increased by roughly 9 acres.

Table 1 provides a more specific summary of the proposed changes in the Folsom Heights land use plan.

The purpose of the analysis presented here is to determine whether the traffic impacts of the modified Folsom Heights project have been adequately addressed in the environmental documentation prepared with respect to the entire Folsom Plan Area. This determination will be based primarily upon a comparison of the relative trip generation values for the two land use plans. If the proposed land use plan is estimated to generate an equal (or lower) number of trips in the key analysis periods, then its traffic impacts will similarly be equal to or lower than the impacts of the proposed project, which were documented in the Final EIR/EIS for the FPA annexation. If, on the other hand, the proposed land uses generate more traffic than the approved project, additional traffic analyses could be recommended.

In addition, this analysis considers whether projected traffic conditions have changed in the vicinity of the Folsom Heights project since the Final EIR/EIS was certified. Substantial changes in operating conditions might also indicate a need for updated traffic analyses.

Table 1
Land Use Comparison
Approved Plan vs. Proposed Plan

Land Use		Approved Plan		Proposed Plan		Difference	
		Acres	DU[1] or SF[2]	Acres	DU or SF	Acres	DU or SF
Residential	Single Family	35.0	106 DU	31.9	117 DU	-3.1	+11 DU
Residential	SF High Density	31.0	171 DU	60.8	285 DU	+29.8	+114 DU
Residential	Medium Low Density	27.9	253 DU	14.9	128 DU	-13.0	-125 DU
Residential Subtotal		*93.9*	*530 DU*	*107.6*	*530 DU*	*13.7*	*0 DU*
General Commercial		34.5	375,700 SF[3]	11.8	128,500 SF[3]	-22.7	-247,200 SF[3]
Open Space		43.1	--	52.4	--	+9.3	--
Roads/Highways		18.2	--	17.9	--	-0.3	--
TOTAL		**189.7**	**--**	**189.7**	**--**	**0.0**	**--**

Notes:
1 Dwelling units.
2 Square feet.
3 Assuming floor area ratio (FAR) of 0.25 (i.e., building square footage is 25 percent of total land area).

TRIP GENERATION COMPARISON

The volume of traffic associated with the Folsom Heights project was estimated using information presented in the *Trip Generation Manual* (Institute of Transportation Engineers, Ninth Edition, 2012). Estimates were developed for three time periods: daily, AM peak hour, and PM peak hour.

Approved Folsom Heights Project

Table 2 summarizes the estimated trip generation associated with the approved Folsom Heights land use plan. Although the land use plan specifies three types of single-family residential units, differing primarily in the density of development, the trip generation characteristics of all three types are believed to be similar. Consequently, the residential trip generation estimates are based on the total number of units, without regard to the development densities.

The commercial square footage was estimated using an assumed floor area ratio (FAR) of 0.25, which is considered to be typical for this type of development. In other words, it is assumed that the building square footage will equal 25 percent of the total land area. Applying that factor to the 11.8 acres of commercial land indicates that the commercial development will total approximately 375,700 square feet (SF).

The approved land use plan would generate about 21,100 daily trips, with about three-quarters of those associated with the commercial component of the project. In the AM peak hour, the approved land use plan would generate a total of 748 trips, with 316 inbound and 432 outbound. The PM peak hour trip generation is estimated to be 1,984 trips, with 1,032 inbound and 952 outbound.

Table 2 **Trip Generation Estimate**[1] **Approved Folsom Heights Land Use Plan**								
Land Use	Size	Daily Trips	AM Peak Hour Trips			PM Peak Hour Trips		
			In	Out	Total	In	Out	Total
Single-Family Residential[2]	530 DU	5,050	99	299	398	334	196	530
Commercial[3]	375,700 SF	16,055	217	133	350	698	756	1,454
	TOTAL	21,105	316	432	748	1,032	952	1,984

Notes:
1 Reference: Institute of Transportation Engineers, *Trip Generation Manual*, Ninth Edition, 2012.
2 ITE Land Use Code 210 – Single-Family Detached Housing.
3 ITE Land Use Code 820 – Shopping Center.

Proposed Folsom Heights Project

As described above, the proposed land use plan would retain the same number of single-family residential units (530 DU), while altering the distribution of those units among the various density categories. The commercial acreage and square footage would be substantially reduced (to 11.8 acres and 128,500 SF), while the amount of open space would be increased.

With regard to the commercial component of the project, the Development Permit Application indicates that the commercial site would be, ". . . sized and shaped to meet the needs of a grocery-anchored neighborhood center." Consequently, the trip generation estimate is based on the assumption that the retail center will consist of a supermarket combined with various other uses typical in such a center (e.g., retail stores, restaurants, and services such as banks, nail salons, real estate offices, etc.).

The assumed size of the supermarket was based on information presented in the ITE *Trip Generation Manual* as well as other sources. The ITE document indicates that the average sizes of the supermarkets surveyed in developing the trip rates presented there range from 37,000 SF (for the AM peak-hour rates) to 56,000 SF (for the PM peak-hour rates). In addition, the Food Marketing Institute (FMI) publishes various facts about supermarkets, including the median store size. For 2014, the median supermarket size was 46,000 SF. According to FMI, the median supermarket size has been between 46,000 and 47,000 SF since 2008. Based on this information, this analysis has assumed that the Folsom Heights supermarket will be 50,000 SF, leaving 78,500 SF of general retail/commercial uses.

To ensure that this approach represents a conservative assessment of the modified project's trip generation, Attachment A contains a table summarizing a comparison of the trip generation associated with the plan described above (i.e., a supermarket combined with general retail/commercial) to a land use plan that does not include a supermarket. For comparison, the commercial component of the approved Folsom Heights project is also shown in that table.

As shown, the supermarket-oriented commercial center would generate over 2,900 more daily trips than a similarly-sized center without a supermarket. In the AM peak hour, a retail center with a supermarket would generate over 300 trips, while a center without a supermarket would generate

182 trips. Finally, in the PM peak hour, the shopping center with a supermarket would generate almost 40 percent more trips than a center without a supermarket (983 trips vs. 709 trips).

Table 3 summarizes the trip generation estimate for the modified Folsom Heights land use plan, including both residential and commercial components.

Table 3
Trip Generation Estimate[1]
Proposed Folsom Heights Land Use Plan

Land Use	Size	Daily Trips	AM Peak Hour Trips			PM Peak Hour Trips		
			In	Out	Total	In	Out	Total
Single-Family Residential[2]	530 DU	5,050	99	299	398	334	196	530
Supermarket[3]	50,000 SF	5,115	105	65	170	242	232	474
Retail[4]	78,500 SF	5,800	83	51	134	244	265	509
Commercial Subtotal		*10,915*	*188*	*116*	*304*	*486*	*497*	*983*
TOTAL		15,965	287	415	702	820	693	1,513

Notes:
1 Reference: Institute of Transportation Engineers, *Trip Generation Manual*, Ninth Edition, 2012.
2 ITE Land Use Code 210 – Single-Family Detached Housing.
3 ITE Land Use Code 850 – Supermarket.
4 ITE Land Use Code 820 – Shopping Center.

The proposed Folsom Heights land use plan will generate almost 16,000 trips per day. The AM peak-hour trip generation will be just over 700 trips (287 inbound and 415 outbound), while the PM peak-hour total will be slightly more than 1,500 (820 inbound and 693 outbound).

Trip Generation Comparison

Based on the trip generation analyses presented above, Table 4 summarizes the comparison of the approved and proposed Folsom Heights land use plans.

The currently-proposed project is estimated to generate over 5,100 fewer daily trips than the approved version of the project. In the AM peak hour, the proposed land use plan will generate almost 50 fewer trips, and in the PM peak hour, it will generate about 470 fewer trips than the approved plan.

Thus, in all three key time periods, the currently-proposed land use plan will generate less traffic than the approved Folsom Heights project. Under daily and PM peak hour conditions, the difference is particularly pronounced, with the proposed land uses generating about three-quarters as many trips as the approved project.

This suggests that the traffic impact analysis incorporated into the environmental documentation for the FPA annexation, which addressed the approved Folsom Heights land use plan discussed above, remains valid with respect to the proposed land use plan. Specifically, all significant traffic impacts that might be associated with the proposed plan have already been identified in the analysis of the approved plan. Further, any necessary mitigation measures will also have been identified.

Table 4
Trip Generation Comparison[1]
Approved vs. Proposed Folsom Heights Land Use Plan

Land Use Plan	Daily Trips	AM Peak Hour Trips			PM Peak Hour Trips		
		In	Out	Total	In	Out	Total
Approved Project[2]	21,105	316	432	748	1,032	952	1,984
Proposed Project[3]	15,965	287	415	702	820	693	1,513
DIFFERENCE	5,140	29	17	46	212	259	471

Notes:
1 Reference: Institute of Transportation Engineers, *Trip Generation Manual*, Ninth Edition, 2012.
2 See Table 2.
3 See Table 3.

INTERSECTION LEVEL OF SERVICE COMPARISON

To further ensure that the traffic analysis for the FPA annexation EIR/EIS remains valid for the modified Folsom Heights project, a comparison of cumulative conditions level of service results for selected key intersections was performed. The intent of this comparison was to confirm that the results of recent traffic analyses are not substantially different from the FPA annexation analysis. If the recent level of service results are somewhat different, it would suggest that the projected study area traffic operations have changed and additional analyses might be required.

The traffic impact analysis incorporated into the *Final EIR/EIS – Folsom South of U.S. Highway 50 Specific Plan Project* was conducted by DKS Associates. With respect to cumulative conditions, it addressed traffic operations in the year 2030 at 26 intersections within the pre-existing Folsom city limits and an additional 30 intersections in the annexation area (including four existing intersections along White Rock Road).

More recently, a detailed traffic analysis was completed for the Russell Ranch project, which is located adjacent to Folsom Heights within the FPA. That analysis, which was completed by Fehr & Peers, addressed traffic operations at 32 intersections in the year 2035.

Comparison of the study areas for the two analyses revealed five intersections that were common to both studies and were located in the immediate vicinity of Folsom Heights. Those locations are:

- Empire Ranch Road/Broadstone Parkway,
- Empire Ranch Road/Iron Point Road,
- Empire Ranch Road/U.S. Highway 50 Westbound Ramps,
- Empire Ranch Road/U.S. Highway 50 Eastbound Ramps, and

- Empire Ranch Road/White Rock Road.

Table 5 illustrates the comparison of Cumulative Plus Project level of service results for those intersections for the AM and PM peak hours. The Cumulative Plus Project scenario includes buildout of the entire FPA land use plan (including the approved Folsom Heights land use plan), as well as expected growth throughout the Sacramento region.

Table 5
Level of Service Comparison for Selected Intersections

Intersection	Cumulative Plus Project Conditions							
	FPASP (Year 2030)[1]				Russell Ranch (Year 2035)[2]			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	Delay[3]	LOS[4]	Delay	LOS	Delay	LOS	Delay	LOS
Empire Ranch Rd./ Broadstone Pkwy.	19.9	B	24.4	C	16	B	11	B
Empire Ranch Rd./ Iron Point Rd.	82.2	F	79.9	E	122	F	89	F
Empire Ranch Rd./ U.S. Hwy. 50 WB Ramps	14.7	B	15.8	B	12	B	9	A
Empire Ranch Rd./ U.S. Hwy. 50 EB Ramps	15.8	B	19.2	B	7	A	11	B
Empire Ranch Rd./ White Rock Rd.	28.9	C	17.7	B	31	C	35	C

Notes;
1 Reference: AECOM and RMC Water and Environment, *Final EIR/EIS – Folsom South of U.S. Highway 50 Specific Plan Project*, May 2011.
2 Reference: Fehr & Peers, *Russell Ranch Final Transportation Impact Study*, December 2014.
3 Average control delay in seconds per vehicle.
4 Level of service.

Table 5 reveals that very little difference in intersection level of service is projected in the two analyses. In the AM peak hour, four of the five intersections will have identical levels of service. At the fifth location (Empire Ranch Road/U.S. Highway 50 Eastbound Ramps), the year 2035 projection indicates slightly better LOS, based on a lower delay value. At Empire Ranch Road/Iron Point Road, although the delay value is shown to be substantially higher in the year 2035, detailed examination of that location reveals that this finding is primarily related to differences in the LOS calculation assumptions employed in the two analyses. If those assumptions had been more consistent in the two studies, the delay values would be more similar.

More variation is seen in the PM peak hour, although the differences are not considered significant. At two locations (Empire Ranch Road/Broadstone Parkway and Empire Ranch Road/U.S. Highway 50 Westbound Ramps), the year 2035 LOS is projected to be better than the year 2030 values. Two additional locations (Empire Ranch Road/Iron Point Road and Empire Ranch Road/White Rock Road) are projected to have slightly worse LOS values.

In the case of Empire Ranch Road/Iron Point Road, this is primarily due to the fact that the boundary between LOS E and LOS F is an average delay value of 80.0 seconds/vehicle. As such, the year 2030 result is only 0.2 seconds/vehicle from exceeding that threshold and, consequently, operating at LOS F. In any event, the Final EIR/EIS for the annexation process identified this intersection as having a significant impact and designated a mitigation measure (No. 3A.15-4f) to address the projected efficiency.

At Empire Ranch Road/White Rock Road, even though the LOS is projected to be worse in 2035, it will remain acceptable under City of Folsom policies.

CONCLUSION

The owners of the Folsom Heights project have proposed a modified land use plan, which differs from the land use plan addressed in the certified Final EIR/EIS for the Folsom Plan Area, south of U.S. Highway 50. The analysis documented in this report has addressed whether the traffic impacts of the modified project have been adequately addressed in the FPA environmental documentation, based primarily upon a comparison of the relative trip generation values for the two land use plans. This analysis also considered whether projected traffic conditions have changed in the vicinity of the Folsom Heights project since the Final EIR/EIS was certified. Substantial changes in operating conditions might indicate a need for updated traffic analyses.

The analysis determined that, in all three key time periods, the currently-proposed, modified land use plan will generate less traffic than the approved Folsom Heights project. Under daily and PM peak hour conditions, the difference is particularly pronounced, with the proposed land uses generating about three-quarters as many trips as the approved project.

Based on a detailed review of the recently-completed traffic study for the adjacent Russell Ranch project, this analysis also determined that projected cumulative conditions traffic operating conditions have not changed substantially since the FPA EIR/EIS was certified.

Therefore, it is reasonable to conclude that the findings presented in the traffic analysis for the FPA annexation process remain valid for the modified version of the Folsom Heights project, and that no further traffic analysis is necessary for that project.

We appreciate having the opportunity to work with you on this project. Please call if you have any questions or need further information.

Sincerely,

MRO ENGINEERS, INC.

Neal K. Liddicoat

Neal K. Liddicoat, P.E.
Traffic Engineering Manager

ATTACHMENT A

COMMERCIAL TRIP GENERATION COMPARISON

Table A-1
Trip Generation Comparison[1]
Folsom Heights Commercial

Scenario	Land Use		Size[2]	Daily Trips	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total
Approved Commercial (34.5 Acres)	Shopping Center		375,700 SF	16,055	217	133	350	698	756	1,454
Proposed Commercial (11.8 Acres)	Option A - Shopping Center		128,500 SF	8,000	113	69	182	340	369	709
Proposed Commercial (11.8 Acres)	Option B	Supermarket	50,000 SF	5,115	105	65	170	242	232	474
		Retail	78,500 SF	5,800	83	51	134	244	265	509
		TOTAL	128,500 SF	10,915	188	116	304	486	497	983

Notes:
1 Reference: Institute of Transportation Engineers, *Trip Generation Manual*, Ninth Edition, 2012.
2 Assuming floor area ratio (FAR) of 0.25

Appendix C

FPASP MMRP

Mitigation Monitoring and Reporting Program

Folsom South of U.S. Highway 50 Specific Plan Project




SCH #2008092051

CITY OF FOLSOM
DISTINCTIVE BY NATURE

Prepared by:

AECOM

May 2011

Mitigation Monitoring and Reporting Program

Folsom South of U.S. Highway 50 Specific Plan Project




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May 2011

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MITIGATION MONITORING AND REPORTING PROGRAM

INTRODUCTION

In accordance with the California Environmental Quality Act (CEQA) (Public Resources Code Section 21000 et seq.) and the State CEQA Guidelines (14 California Code of Regulations [CCR] Section 15000 et seq.), the City of Folsom (City) and the U.S. Army Corps of Engineers (USACE) prepared an Environmental Impact Report / Environmental Impact Statement (EIR/EIS) that identifies adverse environmental impacts related to construction and operation of the Folsom South of U.S. Highway 50 Specific Plan Project. The EIR/EIS also identifies mitigation measures that would reduce these impacts to a less-than-significant level, or eliminate the adverse impacts altogether.

CEQA Guidelines require public agencies "to adopt a reporting and monitoring program for changes to the project which it has adopted or made a condition of project approval in order to mitigate or avoid significant effects on the environment." A Mitigation Monitoring and Reporting Program (MMRP) is required for the proposed project because the EIR identifies potentially significant adverse impacts related to project implementation, and mitigation measures have been identified to reduce those impacts. Adoption of the MMRP would occur along with approval of the proposed project.

PURPOSE OF MITIGATION MONITORING AND REPORTING PROGRAM

This MMRP has been prepared to ensure that all required mitigation measures are implemented and completed in a satisfactory manner before and during project construction and operation. The MMRP may be modified by the City during project implementation, as necessary, in response to changing conditions or other refinements. Table 1 (included at the end of this document) has been prepared to assist the responsible parties in implementing the mitigation measures. The table identifies individual mitigation measures, monitoring/mitigation timing, responsible person/agency for implementing the measure, monitoring and reporting procedure, and space to confirm implementation of the mitigation measures. The numbering of mitigation measures follows the numbering sequence found in the EIR/EIS.

ROLES AND RESPONSIBILITIES

Unless otherwise specified herein, the City is responsible for taking all actions necessary to implement the mitigation measures under its jurisdiction according to the specifications provided for each measure and for demonstrating that the action has been successfully completed. The City, at its discretion, may delegate implementation responsibility or portions thereof to a licensed contractor or other designated agent. Areas in grey shading indicate that enforcement is required by an agency other than the City, and therefore no verification is required.

The City would be responsible for overall administration of the MMRP and for verifying that City staff members and/or the construction contractor has completed the necessary actions for each measure. The City would designate a project manager to oversee implementation of the MMRP. Duties of the project manager include the following:

- Ensure that routine inspections of the construction site are conducted by appropriate City staff; check plans, reports, and other documents required by the MMRP; and conduct report activities.
- Serve as a liaison between the City and the contractor or project applicant regarding mitigation monitoring issues.
- Complete forms and maintain reports and other records and documents generated by the MMRP.
- Coordinate and ensure that corrective actions or enforcement measures are taken, if necessary.

The responsible party for implementation of each item would identify the staff members responsible for coordinating with the City on the MMRP.

REPORTING

The City's project manager shall prepare a monitoring report, upon completion of the project, on the compliance of the activity with the required mitigation measures. Information regarding inspections and other requirements shall be compiled and explained in the report. The report shall be designed to simply and clearly identify whether mitigation measures have been adequately implemented. At a minimum, each report shall identify the mitigation measures or conditions to be monitored for implementation, whether compliance with the mitigation measures or conditions has occurred, the procedures used to assess compliance, and whether further action is required. The monitoring report shall be presented to the City Council.

MITIGATION MONITORING AND REPORTING PLAN TABLE

The categories identified in Table 1 are described below.

- **Mitigation Measure –** This column provides the text of the mitigation measures identified in the EIR.
- **Timing –** This column identifies the time frame in which the mitigation will take place.
- **Enforcement –** This column identifies the party responsible for enforcing compliance with the requirements of the mitigation measure.
- **Dated Signature for Verification of Compliance –** This column is to be dated and signed by the person (either project manager or his/her designee) responsible for verifying compliance with the requirements of the mitigation measure. Areas in grey shading do not require verification.

Table 1 Mitigation Monitoring and Reporting Plan for the Folsom South of U.S. Highway 50 Specific Plan Project				
Mitigation Measure	Timing	Implementation	Enforcement	Dated Signature for Verification of Compliance
3A.1 AESTHETICS - LAND				
Mitigation Measure 3A.1-1: Construct and Maintain a Landscape Corridor Adjacent to U.S. 50. The project applicant(s) for any particular discretionary development application adjacent to U.S. 50 shall fund, construct, and maintain a landscaped corridor within the SPA, south of U.S. 50. This corridor shall be 50 feet wide, except that the landscaped corridor width shall be reduced to 25 feet adjacent to the proposed regional mall. Landscaping plans and specifications shall be approved by Caltrans and the City of Folsom, and constructed by the project applicant(s) before the start of earthmoving activities associated with residential or commercial units. Landscaped areas would not be required within the preserved oak woodlands. As practicable, landscaping shall primarily contain native and/or drought tolerant plants. Landscaped corridors shall be maintained in perpetuity to the satisfaction of the City of Folsom.	1. Plans and specifications: before approval of grading plans and building permits 2. Construction: before the approval of occupancy permits associated with residential and commercial units 3. Maintenance: in perpetuity	Project applicant(s) for any particular discretionary development application adjacent to U.S. 50.	City of Folsom Community Development Department	
Mitigation Measure 3A.1-4: Screen Construction Staging Areas. The project applicant(s) for any particular discretionary development application shall locate staging and material storage areas as far away from sensitive biological resources and sensitive land uses (e.g., residential areas, schools, parks) as feasible. Staging and material storage areas shall be approved by the appropriate agency (identified below) before the approval of grading plans for all project phases and shall be screened from adjacent occupied land uses in earlier development phases to the maximum extent practicable. Screens may include, but are not limited to, the use of such visual barriers such as berms or fences. The screen design shall be approved by the appropriate agency to further reduce visual effects to the extent possible. Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries shall be developed by the project applicant(s) of each applicable project phase in consultation with the affected oversight agency(ies) (i.e., El Dorado and/or Sacramento Counties, and Caltrans) to reduce to the extent feasible the visual effects of construction activities on adjacent project land uses that have already been developed.	Before approval of grading plans and during construction for all project phases.	Project applicant(s) for any particular discretionary development application.	1. For those improvements that would be located within the City of Folsom: City of Folsom Neighborhood Services Department and City of Folsom Community Development Department. 2. For the two local roadway connections from Folsom Heights into El Dorado Hills: El Dorado County Community Services Department. 3. For the U.S. 50 interchange improvements: Caltrans.	
Mitigation Measure 3A.1-5: Establish and Require Conformance to Lighting Standards and Prepare and Implement a Lighting Plan. To reduce impacts associated with light and glare, the City shall: ▸ Establish standards for on-site outdoor lighting to reduce high-intensity nighttime lighting and glare as part of the Folsom Specific Plan design guidelines/standards. Consideration shall be given to design features, namely directional shielding for street lighting, parking lot lighting, and other substantial light sources, that would reduce effects of nighttime lighting. In addition, consideration shall be given to the use of automatic shutoffs or motion sensors for lighting features to further reduce excess nighttime light. ▸ Use shielded or screened public lighting fixtures to prevent the light from shining off of the surface intended to be illuminated. To reduce impacts associated with light and glare, the project applicant(s) of all project phases shall: ▸ Shield or screen lighting fixtures to direct the light downward and prevent light spill on adjacent properties. ▸ Flood and area lighting needed for construction activities, nighttime sporting activities, and/or security shall be screened or aimed no higher than 45 degrees above straight down (half-way between straight down and straight to the side) when the source is visible from any off-site residential property or public roadway. ▸ For public lighting in residential neighborhoods, prohibit the use of light fixtures that are of unusually high intensity or brightness (e.g., harsh mercury vapor, low-pressure sodium, or fluorescent bulbs) or that blink or flash. ▸ Use appropriate building materials (such as low-glare glass, low-glare building glaze or finish, neutral, earth-toned colored paint and roofing materials), shielded or screened lighting, and appropriate signage in the office/commercial areas to prevent light and glare from adversely affecting motorists on nearby roadways.	Before approval of building permits.	Project applicant(s) for any particular discretionary development application.	1. For all on-site and off-site facilities that would be located within the City of Folsom: City of Folsom Neighborhood Services Department and City of Folsom Community Development Department. 2. For the off-site detention basin: Sacramento County Planning Department. 3. For the two local roadways off-site into El Dorado Hills: El Dorado County Community Services Department.	

Table 1 Mitigation Monitoring and Reporting Plan for the Folsom South of U.S. Highway 50 Specific Plan Project				
Mitigation Measure	Timing	Implementation	Enforcement	Dated Signature for Verification of Compliance
▸ Design exterior on-site lighting as an integral part of the building and landscape design in the Folsom Specific Plan area. Lighting fixtures shall be architecturally consistent with the overall site design. ▸ Lighting of off-site facilities within the City of Folsom shall be consistent with the City's General Plan standards. ▸ Lighting of the off-site detention basin shall be consistent with Sacramento County General Plan standards. ▸ Lighting of the two local roadway connections from Folsom Heights off-site into El Dorado Hills shall be consistent with El Dorado County General Plan standards. A lighting plan for all on- and off-site elements within the each agency's jurisdictional boundaries (specified below) shall be submitted to the relevant jurisdictional agency for review and approval, which shall include the above elements. The lighting plan may be submitted concurrently with other improvement plans, and shall be submitted before the installation of any lighting or the approval of building permits for each phase. The project applicant(s) for any particular discretionary development application shall implement the approved lighting plan. Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries must be coordinated by the project applicant(s) of each applicable project phase with the affected oversight agency(ies) (i.e., El Dorado and/or Sacramento Counties).				
3B.1 AESTHETICS - WATER				
Mitigation Measure 3B.1-2a: Enhance Exterior Appearance of Structural Facilities. The external appearance of above-ground facilities, including the choice of color and materials, shall seek to reduce the visual impact of the proposed WTP, 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 3B.2-2b for additional detail), and ▸ clustering of structural facilities to maximize open space buffering.	Prior to approval of grading plans and building permits for WTP, pump stations, and storage tank facilities.	City of Folsom Utilities Department	1. For structural improvements that would be located within the City of Folsom: City of Folsom Neighborhood Services Department and City of Folsom Community Development Department. 2. For structural improvements that would be located within unincorporated Sacramento County: Sacramento County Planning and Community Development Department. 3. For structural improvements that would be located within the City of Rancho Cordova: City of Rancho Cordova Planning Department.	
Mitigation Measure 3B.1-2b: Prepare Landscaping Plan. The City shall develop a landscaping plan for each structural facility site that uses a combination of 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 approval of grading plans and building permits for WTP, pump stations, and storage tank facilities.	City of Folsom Utilities Department	1. For structural improvements that would be located within the City of Folsom: City of Folsom Neighborhood Services Department and City of Folsom Community Development Department. 2. For structural improvements that would be located within unincorporated Sacramento County: Sacramento County Planning and Community Development Department.	

Table 1 Mitigation Monitoring and Reporting Plan for the Folsom South of U.S. Highway 50 Specific Plan Project				
Mitigation Measure	Timing	Implementation	Enforcement	Dated Signature for Verification of Compliance
			3. For structural improvements that would be located within the City of Rancho Cordova: City of Rancho Cordova Planning Department.	
Mitigation Measure 3B.1-3a: Conformance to Construction Lighting Standards. The City shall limit construction to daylight hours to the extent possible. If nighttime lighting or construction is necessary, the City shall ensure that unshielded lights, reflectors, or spotlights are not located and directed to shine toward or be directly visible from adjacent properties or streets. To the extent possible, the City shall minimize the use of nighttime construction lighting within 500 feet of existing residences. This measure shall be identified on grading plans and in construction contracts.	Prior to approval of grading plans and building permits for WTP, pump stations, and storage tank facilities.	City of Folsom Utilities Department	1. For structural improvements that would be located within the City of Folsom: City of Folsom Neighborhood Services Department and City of Folsom Community Development Department. 2. For structural improvements that would be located within unincorporated Sacramento County: Sacramento County Planning and Community Development Department. 3. For structural improvements that would be located within the City of Rancho Cordova: City of Rancho Cordova Planning Department.	
Mitigation Measure 3B.1-3b: Prepare and Submit a Lighting Master Plan. The City shall prepare a Lighting Master Plan that covers all Off-site Water Facilities-related outdoor light sources. The Lighting Master Plan shall include the following minimum requirements: ▸ outdoor lighting shall be properly shielded and installed to prevent light trespass on adjacent properties; ▸ flood or spot lamps installed as part of the Off-site Water Facilities shall be aimed no higher than 45 degrees above straight down (half-way between straight down and straight to the side) when the source is visible from any off-site residential property or public roadway; ▸ prohibit the use of harsh mercury vapor, low-pressure sodium, or fluorescent bulbs for public lighting in residential neighborhoods; and ▸ comply with requirements of local jurisdiction, if applicable.	Prior to approval of grading plans and building permits for WTP, pump stations, and storage tank facilities.	City of Folsom Utilities Department	1. For structural improvements that would be located within the City of Folsom: City of Folsom Neighborhood Services Department and City of Folsom Community Development Department. 2. For structural improvements that would be located within unincorporated Sacramento County: Sacramento County Planning and Community Development Department. 3. For structural improvements that would be located within the City of Rancho Cordova: City of Rancho Cordova Planning Department.	
3A.2 AIR QUALITY - LAND				
Mitigation Measure 3A.2-1a: Implement Measures to Control Air Pollutant Emissions Generated by Construction of On-Site Elements. To reduce short-term construction emissions, the project applicant(s) for any particular discretionary development application shall require their contractors to implement SMAQMD's list of Basic Construction Emission Control Practices, Enhanced Fugitive PM Dust Control Practices, and Enhanced Exhaust Control Practices (list below) in effect at the time individual portions of the site undergo	Before the approval of all grading plans by the City and throughout project construction,	The project applicant(s) of all project phases.	City of Folsom Community Development Department	

Table 1
Mitigation Monitoring and Reporting Plan for the Folsom South of U.S. Highway 50 Specific Plan Project

Mitigation Measure	Timing	Implementation	Enforcement	Dated Signature for Verification of Compliance
construction. In addition to SMAQMD-recommended measures, construction operations shall comply with all applicable SMAQMD rules and regulations. **Basic Construction Emission Control Practices** ▸ Water all exposed surfaces two times daily. Exposed surfaces include, but are not limited to soil piles, graded areas, unpaved parking areas, staging areas, and access roads. ▸ Cover or maintain at least two feet of free board space on haul trucks transporting soil, sand, or other loose material on the site. Any haul trucks that would be traveling along freeways or major roadways should be covered. ▸ Use wet power vacuum street sweepers to remove any visible trackout mud or dirt onto adjacent public roads at least once a day. Use of dry power sweeping is prohibited. ▸ Limit vehicle speeds on unpaved roads to 15 miles per hour (mph). ▸ All roadways, driveways, sidewalks, parking lots to be paved should be completed as soon as possible. In addition, building pads should be laid as soon as possible after grading unless seeding or soil binders are used. ▸ Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to 5 minutes (as required by the state airborne toxics control measure [Title 13, Section 2485 of the California Code of Regulations]). Provide clear signage that posts this requirement for workers at the entrances to the site. ▸ Maintain all construction equipment in proper working condition according to manufacturer's specifications. The equipment must be checked by a certified mechanic and determine to be running in proper condition before it is operated. **Enhanced Fugitive PM Dust Control Practices – Soil Disturbance Areas** ▸ Water exposed soil with adequate frequency for continued moist soil. However, do not overwater to the extent that sediment flows off the site. ▸ Suspend excavation, grading, and/or demolition activity when wind speeds exceed 20 mph. ▸ Plant vegetative ground cover (fast-germinating native grass seed) in disturbed areas as soon as possible. Water appropriately until vegetation is established. **Enhanced Fugitive PM Dust Control Practices – Unpaved Roads** ▸ Install wheel washers for all exiting trucks, or wash off all trucks and equipment leaving the site. ▸ Treat site accesses to a distance of 100 feet from the paved road with a 6 to 12-inch layer of wood chips, mulch, or gravel to reduce generation of road dust and road dust carryout onto public roads. ▸ Post a publicly visible sign with the telephone number and person to contact at the construction site regarding dust complaints. This person shall respond and take corrective action within 48 hours. The phone number of SMAQMD and the City contact person shall also be posted to ensure compliance. **Enhanced Exhaust Control Practices** ▸ The project shall provide a plan, for approval by the City of Folsom Community Development Department and SMAQMD, demonstrating that the heavy-duty (50 horsepower [hp] or more) off-road vehicles to be used in the construction project, including owned, leased, and subcontractor vehicles, will achieve a project wide fleet-average 20% NO_X reduction and 45% particulate reduction compared to the most current California Air Resources Board (ARB) fleet average that exists at the time of construction. 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 project applicant(s) of each project phase or its representative shall submit to the City of Folsom Community Development Department and SMAQMD a comprehensive inventory of all off-road construction equipment, equal to or greater than 50 hp, that would be used an aggregate of 40 or more hours during any portion of the construction project. The inventory shall include the horsepower rating, engine production year, and projected hours of use for each piece of equipment. The inventory shall be updated and submitted monthly throughout the duration of the project, except that an inventory shall not be required for any 30-day period in which no construction activity occurs. At least 48 hours prior to the use of heavy-duty off-road equipment, the project representative shall provide SMAQMD with the anticipated construction timeline including start date, and name and phone number of the project manager and on-site foreman. SMAQMD's Construction Mitigation Calculator can be used to identify an equipment fleet that achieves this reduction (SMAQMD 2007a). The project shall ensure that emissions from all off-road diesel powered equipment used on the SPA do not exceed 40% opacity for more than three minutes in any one hour. Any equipment found to exceed 40 percent opacity (or Ringelmann 2.0) shall be repaired immediately, and the City and SMAQMD shall be notified within 48 hours of identification of non-compliant equipment. A visual survey of all in-operation equipment shall be made at least weekly, and a monthly summary of the visual	where applicable, for all project phases.			

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Mitigation Measure	Timing	Implementation	Enforcement	Dated Signature for Verification of Compliance
survey results shall be submitted throughout the duration of the project, except that the monthly summary shall not be required for any 30-day period in which no construction activity occurs. The monthly summary shall include the quantity and type of vehicles surveyed as well as the dates of each survey. SMAQMD staff and/or other officials may conduct periodic site inspections to determine compliance. Nothing in this mitigation measure shall supersede other SMAQMD or state rules or regulations. ▸ If at the time of construction, SMAQMD has adopted a regulation or new guidance applicable to construction emissions, compliance with the regulation or new guidance may completely or partially replace this mitigation if it is equal to or more effective than the mitigation contained herein, and if SMAQMD so permits.				
Mitigation Measure 3A.2-1b: Pay Off-site Mitigation Fee to SMAQMD to Off-Set NO_X Emissions Generated by Construction of On-Site Elements. Implementation of the Proposed Project or the other four other action alternatives would result in construction-generated NO_X emissions that exceed the SMAQMD threshold of significance, even after implementation of the SMAQMD Enhanced Exhaust Control Practices (listed in Mitigation Measure 3A.2-1a). Additionally, Mitigation Measure 3A.4-1 (Implement Additional Measures to Control Construction-Generated GHG Emissions, pages 3A.4-14 to 15) has the potential to both reduce and increase NO_X emissions, depending on the types of alternative fuels and engine types employed. Therefore, the project applicant(s) shall pay SMAQMD an off-site mitigation fee for implementation of any of the five action alternatives for the purpose of reducing NO_X emissions to a less-than-significant level (i.e., less than 85 lb/day). All NO_X emission reductions and increases associated with GHG mitigation shall be added to or subtracted from the amount above the construction threshold to determine off-site mitigation fees, when possible. The specific fee amounts shall be calculated when the daily construction emissions can be more accurately determined: that is, if the City/USACE select and certify the EIR/EIS and approves the Proposed Project or one of the other four other action alternatives, the City and the applicants must establish the phasing by which development would occur, and the applicants must develop a detailed construction schedule. Calculation of fees associated with each project development phase shall be conducted by the project applicant(s) in consultation with SMAQMD staff before the approval of grading plans by the City. The project applicant(s) for any particular discretionary development application shall pay into SMAQMD's off-site construction mitigation fund to further mitigate construction-generated emissions of NO_X that exceed SMAQMD's daily emission threshold of 85 lb/day. The calculation of daily NO_X emissions shall be based on the cost rate established by SMAQMD at the time the calculation and payment are made. At the time of writing this EIR/EIS the cost rate is $16,000 to reduce 1 ton of NO_X plus a 5% administrative fee (SMAQMD 2008c). The determination of the final mitigation fee shall be conducted in coordination with SMAQMD before any ground disturbance occurs for any project phase. Based on information available at the time of writing this EIR/EIS, and assuming that construction would be performed at a consistent rate over a 19-year period (and averaging of 22 work days per month), it is estimated that the off-site construction mitigation fees would range from $517,410 to $824,149, depending on which alternative is selected. Because the fee is based on the mass quantity of emissions that exceed SMAQMD's daily threshold of significance of 85 lb/day, total fees would be substantially greater if construction activity is more intense during some phases and less intense during other phases of the 19-year build out period, and in any event, based on the actual cost rate applied by SMAQMD. (This 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.)	Before the approval of all grading plans by the City and throughout project construction for all project phases.	The project applicant(s) of all project phases.	The City of Folsom Community Development Department shall not grant any grading permits to the respective project applicant(s) until the respective project applicant(s) have paid the appropriate off-site mitigation fee to SMAQMD.	
Mitigation Measure 3A.2-1c: Analyze and Disclose Projected PM_{10} Emission Concentrations at Nearby Sensitive Receptors Resulting from Construction of On-Site Elements. Prior to construction of each discretionary development entitlement of on-site land uses, the project applicant shall perform a project-level CEQA analysis (e.g., supporting documentation for an exemption, negative declaration, or project-specific EIR) that includes detailed dispersion modeling of construction-generated PM_{10} to disclose what PM_{10} concentrations would be at nearby sensitive receptors. The dispersion modeling shall be performed in accordance with applicable SMAQMD guidance that is in place at the time the analysis is performed. At the time of writing this EIR/EIS, SMAQMD's most current and most detailed guidance for addressing construction-generated PM_{10} emissions is found in its Guide to Air Quality Assessment in Sacramento County (SMAQMD 2009a). The project-level analysis shall incorporate detailed parameters of the construction equipment and activities, including the year during which construction would be performed, as well as the proximity of potentially affected receptors, including receptors proposed by the project that exist at the time the construction activity would occur.	Before the approval of all grading plans by the City.	All detailed, project-level analysis shall be performed and funded by the project applicant(s) for each discretionary development entitlement. All feasible mitigation shall be also be funded by the project applicant(s).	City of Folsom Community Development Department	

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Mitigation Measure	Timing	Implementation	Enforcement	Dated Signature for Verification of Compliance
Mitigation Measure 3A.2-1d: Implement SMAQMD's Basic Construction Emission Control Practices during Construction of all Off-site Elements located in Sacramento County. The applicants responsible for the construction of each off-site element in Sacramento County shall require their contractors to implement SMAQMD's Basic Construction Emission Control Practices during construction. A list of SMAQMD's Basic Construction Emission Control Practices is provided under Mitigation Measure 3A.2-1a. Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries must be developed by the project applicant(s) of each applicable project phase with the affected oversight agency(ies) (i.e., Sacramento County or Caltrans) to implement SMAQMD's Basic Construction Emission Control Practices or comparable feasible measures.	Before the approval of all grading plans from SMAQMD.	The project applicant(s) responsible for construction of each off-site element in Sacramento County.	1. For all off-site improvements within Sacramento County: Sacramento County Planning and Community Development Department. 2. For the U.S. 50 interchange improvements: Caltrans.	
Mitigation Measure 3A.2-1e: Implement EDCAQMD-Recommended Measures for Controlling Fugitive PM_{10} dust During Construction of the Two Roadway Connections in El Dorado County. Prior to construction of each roadway extension in El Dorado County, the applicants or its contractors shall develop a fugitive dust control plan that is approved by EDCAQMD and the applicants shall require their contractors to implement the dust control measures identified in the EDCAQMD-approved fugitive dust control plan. The fugitive dust control plan shall contain measures that are recommended by EDCAQMD at the time the plan is developed, which may include, but is not limited to, the current list of EDCAQMD-recommended dust control measures provided in Table 3A.2-5 below. Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries must be developed by the project applicant(s) of each applicable project phase in consultation with the affected oversight agency(ies) (i.e., El Dorado County).	Before the approval of grading plans by EDCAQMD.	The project applicant(s) responsible for constructing the roadway connections in El Dorado County.	El Dorado County Development Services Department.	

Table 3A.2-5
EDCAQMD-Recommend Fugitive Dust Control Measures

Source	Mitigation Measure
Soil Piles	Enclose, cover, or water twice daily all soil piles
	Automatic sprinkler system installed on soil piles
Exposed Surface/Grading	Water all exposed soil twice daily
	Water exposed soil with adequate frequency to keep soil moist at all times
Truck Hauling Road	Water all haul roads twice daily
	Pave all haul roads
Truck Hauling Load	Maintain at least two feet of freeboard
	Cover load of all haul/dump trucks securely

Source: Table 4.12 of EDCAQMD's *Guide to Air Quality Assessment* (EDCAQMD 2002).

Mitigation Measure	Timing	Implementation	Enforcement	Dated Signature for Verification of Compliance
Mitigation Measure 3A.2-1f: Implement SMAQMD's Enhanced Exhaust Control Practices during Construction of all Off-site Elements. Implement SMAQMD's Enhanced Exhaust Control Practices, which are listed in Mitigation Measure 3A.2-1a, in order to control NO_X emissions generated by construction of all off-site elements (in Sacramento and El Dorado Counties, or Caltrans right-of-way).	Before the approval of all grading plans from the respective air district (i.e., SMAQMD or EDCAQMD).	The project applicant(s) responsible for construction of each off-site element in Sacramento and El Dorado counties.	1. For the two roadway connections in El Dorado Hills: El Dorado County Development Services Department. 2. For the detention basin west of Prairie City Road: Sacramento County Planning and Community Development Department. 3. For the U.S. 50 interchange improvements: Caltrans.	
Mitigation Measure 3A.2-1g: Pay Off-site Mitigation Fee to SMAQMD to Off-Set NO_X Emissions Generated by Construction of Off-site Elements. The off-site elements could result in construction-generated NO_X emissions that exceed the SMAQMD threshold of significance, even after implementation of the SMAQMD Enhanced Exhaust Control Practices (listed in Mitigation Measure 3A.2-1a). Therefore, the responsible project applicant(s) for each off-site element in Sacramento County shall pay SMAQMD an off-site mitigation fee for implementation of each off-site element in Sacramento County for the purpose of reducing NO_X emissions to a less-than-significant level (i.e., less than 85 lb/day). The specific fee amounts shall be calculated when the daily construction emissions can be more accurately determined. This calculation shall occur if the City/USACE certify the EIR/EIS and select and approves the Proposed Project or one of the	Before the approval of each grading plan for the off-site elements in Sacramento County.	The project applicant(s) of all off-site elements in Sacramento County.	1. For all off-site improvements within Sacramento County: Sacramento County Planning and Community Development Department shall not grant any grading	

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other four other action alternatives, the City, Sacramento County, and the applicants establish the phasing by which construction of the off-site elements would occur, and the applicants develop a detailed construction schedule. Calculation of fees associated with each off-site element shall be conducted by the project applicant(s) in consultation with SMAQMD staff before 'the approval of respective grading plans by Sacramento County. The project applicant(s) responsible for each off-site element in Sacramento County shall pay into SMAQMD's off-site construction mitigation fund to further mitigate construction-generated emissions of NO_X that exceed SMAQMD's daily emission threshold of 85 lb/day. The calculation of daily NO_X emissions shall be based on the cost rate established by SMAQMD at the time the calculation and payment are made. At the time of writing this EIR/EIS the cost rate is $16,000 to reduce 1 ton of NO_X plus a 5% administrative fee (SMAQMD 2008c). The determination of the final mitigation fee shall be conducted in coordination with SMAQMD before any ground disturbance occurs for any project phase. Because the fee is based on the mass quantity of emissions that exceed SMAQMD's daily threshold of significance of 85 lb/day, total fees for construction of the off-site elements would vary according to the timing and potential overlap of construction schedules for off-site elements. This measure applies only to those off-site elements located in SMAQMD's jurisdiction (i.e., in Sacramento County) because EDCAQMD does not offer a similar off-set fee program for construction-generated NO_X emissions in its jurisdiction. (This 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.) Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries must be developed by the project applicant(s) of each applicable project phase in consultation with the affected oversight agency(ies) (i.e., Sacramento County or Caltrans).			permits to the respective project applicant(s) until the respective project applicant(s) have paid the appropriate off-site mitigation fee to SMAQMD. 2. For the U.S. 50 interchange improvements: Caltrans shall not grant any grading permits to the respective project applicant(s) until the respective project applicant(s) have paid the appropriate off-site mitigation fee to SMAQMD.	
Mitigation Measure 3A.2-1h: Analyze and Disclose Projected PM_{10} Emission Concentrations at Nearby Sensitive Receptors Resulting from Construction of Off-site Elements. Prior to construction of each off-site element located in Sacramento County that would involve site grading or earth disturbance activity that would exceed 15 acres in one day, the responsible agency or its selected consultant shall conduct detailed dispersion modeling of construction-generated PM_{10} emissions pursuant to SMAQMD guidance that is in place at the time the analysis is performed. At the time of writing this EIR/EIS, SMAQMD's most current and most detailed guidance for addressing construction-generated PM_{10} emissions is found in its Guide to Air Quality Assessment in Sacramento County SMAQMD 2009a). SMAQMD emphasizes that PM_{10} emission concentrations at nearby sensitive receptors be disclosed in project-level CEQA analysis. Each project-level analysis shall incorporate detailed parameters of the construction equipment and activities, including the year during which construction would be performed, as well as the proximity of potentially affected receptors, including receptors proposed by the project that exist at the time the construction activity would occur. If the modeling analysis determines that construction activity would result in an exceedance or substantial contribution to the CAAQS and NAAQS at a nearby receptor, then the project applicant(s) shall require their respective contractors to implement additional measures for controlling construction-generated PM_{10} exhaust emission and fugitive PM_{10} dust emissions in accordance with SMAQMD guidance, requirements, and/or rules that apply at the time the project-level analysis is performed. It is likely that these measures would be the same or similar to those listed as Enhanced Fugitive PM Dust Control Practices for Soil Disturbance Areas and Unpaved Roads and Enhanced Exhaust Control Practices included in Mitigation Measure 3A.2-1a. Dispersion modeling is not required for the two El Dorado County roadway connections because the total amount of disturbed acreage is expected to be less than the EDCAQMD screening level of 12 acres. Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries must be developed by the project applicant(s) of each applicable project phase in consultation with the affected oversight agency(ies) (i.e., Sacramento County or Caltrans).	1. For all off-site improvements within unincorporated Sacramento County: Before the approval of the respective grading plans from the Sacramento County Planning and Community Development Department 2. For the U.S. 50 interchange improvements: Before the approval of construction plans from Caltrans.	All detailed, project-level analysis shall be performed by the responsible lead agency or its selected consultant and funded by the project applicant(s). Implementation of the project-level modeling analysis and any necessary additional mitigation shall be fully funded by the project applicant(s) responsible for each off-site improvement.	1. For all off-site improvements within Sacramento County: Sacramento County Planning and Community Development Department. 2. For the U.S. 50 interchange improvements: Caltrans.	
Mitigation Measure 3A.2-2: Implement All Measures Prescribed by the Air Quality Mitigation Plan to Reduce Operational Air Pollutant Emissions. To reduce operational emissions, the project applicant(s) for any particular discretionary development application shall implement all measures prescribed in the SMAQMD-approved *Folsom Plan Area Specific Plan Air Quality Mitigation Plan* (AQMP) (Torrence Planning 2008), a copy of which is included in Appendix C2. The AQMP is intended to improve mobility, reduce vehicle miles traveled, and improve air quality as required by AB 32 and SB 375. The AQMP includes, among others, measures designed to provide bicycle parking at commercial land uses, an integrated pedestrian/bicycle path network, transit stops with shelters, a prohibition against the use the wood-burning fireplaces, energy star roofing materials, electric lawnmowers provided to homeowners at no charge, and on-site transportation alternatives to passenger vehicles (including light rail) that provide connectivity with other local and regional alternative transportation networks.	Before issuance of subdivision maps or improvement plans.	The project applicant(s) any particular discretionary development application.	City of Folsom Community Development Department.	
Mitigation Measure 3A.2-4a: Develop and Implement a Plan to Reduce Exposure of Sensitive Receptors to Construction-Generated Toxic Air Contaminant Emissions. The project applicant(s) for any particular discretionary development application shall develop a plan to reduce the exposure of sensitive receptors to TACs generated by project construction activity associated with buildout of the selected alternative. Each plan shall be developed by the project applicant(s) in consultation with SMAQMD. The plan shall be submitted to the City	Before the approval of all grading plans by the City and throughout project construction,	The project applicant(s) any particular discretionary development	City of Folsom Community Development Department.	

Mitigation Measure	Timing	Implementation	Enforcement	Dated Signature for Verification of Compliance
for review and approval before the approval of any grading plans. The plan may include such measures as scheduling activities when the residences are the least likely to be occupied, requiring equipment to be shut off when not in use, and prohibiting heavy trucks from idling. Applicable measures shall be included in all project plans and specifications for all project phases. The implementation and enforcement of all measures identified in each plan shall be funded by the project applicant(s) for the respective phase of development.	where applicable, for all project phases.	application.		
Mitigation Measure 3A.2-4b: Implement Measures to Reduce Exposure of Sensitive Receptors to Operational Emissions of Toxic Air Contaminants. The following measures shall be implemented to reduce exposure of sensitive receptors to Toxic Air Contaminants. ▸ Proposed commercial and industrial land uses that have the potential to emit TACs or host TAC-generating activity (e.g., loading docks) shall be located away from existing and proposed on-site sensitive receptors such that they do not expose sensitive receptors to TAC emissions that exceed an incremental increase of 10 in 1 million for the cancer risk and/or a noncarcinogenic Hazard Index of 1.0. ▸ The multi-family residences planned across from the off-site corporation yard near the southwest corner of the SPA shall be set back as far as possible from the boundary of the corporation yard and/or relocated to another area. ▸ Where necessary to reduce exposure of sensitive receptors to an incremental increase of 10 in 1 million for the cancer risk and/or a noncarcinogenic Hazard Index of 1.0, proposed commercial and industrial land uses that would host diesel trucks shall incorporate idle reduction strategies that reduce the main propulsion engine idling time through alternative technologies such as, IdleAire, electrification of truck parking, and alternative energy sources for TRUs, to allow diesel engines to be completely turned off. ▸ Signs shall be posted in at all loading docks and truck loading areas which indicate that diesel-powered delivery trucks must be shut off when not in use for longer than 5 minutes on the premises in order to reduce idling emissions. This measure is consistent with the ATCM to Limit Diesel-Fueled Commercial Motor Vehicle Idling, which was approved by the California Office of Administrative Law in January 2005. ▸ Implement the following additional guidelines, which are recommended in ARB's *Land Use Handbook: A Community Health Perspective* (ARB 2005) and are considered to be advisory and not regulatory: • Sensitive receptors, such as residential units and daycare centers, shall not be located in the same building as dry-cleaning operations that use perchloroethylene. Dry-cleaning operations that use perchloroethylene shall not be located within 300 feet of any sensitive receptor. A setback of 500 feet shall be provided for operations with two or more machines. • Large gasoline stations (defined as facilities with a throughput of 3.6 million gallons per year or greater) and sensitive land uses shall not be sited within 300 feet of each other. Small gasoline-dispensing facilities (less than 3.6 million gallons of throughput per year) and sensitive land uses shall not be sited within 50 feet of each other.	Before the approval of all grading plans by the SMAQMD and throughout project construction, where applicable, for all project phases.	The project applicant(s) of all project phases.	City of Folsom Community Development Department.	
Mitigation Measure 3A.2-5: Implement A Site Investigation to Determine the Presence of NOA and, if necessary, Prepare and Implement an Asbestos Dust Control Plan. A site investigation shall be performed to determine whether and where NOA is present in the soil and rock on the SPA. The site investigation shall include the collection of soil and rock samples by a qualified geologist. If the site investigation determines that NOA is present on the SPA then the project applicant shall prepare an Asbestos Dust Control Plan for approval by SMAQMD as required in Title 17, Section 93105 of the California Code of Regulations, "Asbestos Airborne Toxic Control Measure for Construction, Grading, Quarrying, and Surface Mining Operations." The Asbestos Dust Control Plan shall specify measures, such as periodic watering to reduce airborne dust and ceasing construction during high winds. Measures in the Asbestos Dust Control Plan may include but shall not be limited to dust control measures required by Mitigation Measure 3A.2-1a. The project applicant shall submit the plan to the Folsom Community Development Department for review and SMAQMD for review and approval before construction of the first project phase. SMAQMD approval of the plan must be received before any asbestos-containing rock (serpentinite) can be disturbed. Upon approval of the Asbestos Dust Control Plan by SMAQMD, the applicant shall ensure that construction contractors implement the terms of the plan throughout the construction period.	Before the approval of all grading plans by the City and throughout project construction, where applicable, for all project phases.	The project applicant(s) of all project phases.	City of Folsom Community Development Department.	
Mitigation Measure 3A.2-6: Implement Measures to Control Exposure of Sensitive Receptors to Operational Odorous Emissions. The project applicant(s) for any particular discretionary development application shall implement the following measures: ▸ The odor-producing potential of land uses shall be considered when the exact type of facility that would occupy areas zoned for	Before the approval of building permits by the City and throughout project construction,	The project applicant(s) of all project phases.	City of Folsom Community Development Department.	

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commercial, industrial, or mixed-use land uses is determined. Facilities that have the potential to emit objectionable odors shall be located as far away as feasible from existing and proposed sensitive receptors. ▸ The multi-family residences planned across from the off-site corporation yard near the southwest corner of the SPA shall be set back as far as possible from the boundary of the corporation yard and/or relocated to another area. (This measure is also required by Mitigation Measure 3A.2-4b to limit exposure to TAC emissions.) ▸ Before the approval of building permits, odor control devices shall be identified to mitigate the exposure of receptors to objectionable odors if a potential odor-producing source is to occupy an area zoned for commercial, industrial, or mixed-use land uses. The identified odor control devices shall be installed before the issuance of certificates of occupancy for the potentially odor-producing use. The odor-producing potential of a source and control devices shall be determined in coordination with SMAQMD and based on the number of complaints associated with existing sources of the same nature. ▸ The deeds to all properties located within the plan area that are within one mile of an on- or off-site area zoned or used for agricultural use (including livestock grazing) shall be accompanied by a written disclosure from the transferor, in a form approved by the City of Folsom, advising any transferee of the potential adverse odor impacts from surrounding agricultural operations, which disclosure shall direct the transferee to contact the County of Sacramento concerning any such property within the County zoned for agricultural uses within one mile of the subject property being transferred. ▸ Truck loading docks and delivery areas shall be located as far away as feasible from existing and proposed sensitive receptors. ▸ Signs shall be posted at all loading docks and truck loading areas which indicate that diesel-powered delivery trucks must be shut off when not in use for longer than 5 minutes on the premises in order to reduce idling emissions. This measure is consistent with the ATCM to Limit Diesel-Fueled Commercial Motor Vehicle Idling, which was approved by California's Office of Administrative Law in January 2005. (This measure is also required by Mitigation Measure 3A.2-4b to limit TAC emissions.) ▸ Proposed commercial and industrial land uses that have the potential to host diesel trucks shall incorporate idle reduction strategies that reduce the main propulsion engine idling time through alternative technologies such as, IdleAire, electrification of truck parking, and alternative energy sources for TRUs, to allow diesel engines to be completely turned off. (This measure is also required by Mitigation Measure 3A.2-4b to limit TAC emissions.)	where applicable, for all project phases.			
3B.2 AIR QUALITY - WATER				
Mitigation Measure 3B.2-1a: Develop and Implement a Construction NO_X Reduction Plan. Consistent with SMAQMD requirements, the City of Folsom shall provide a plan for demonstrating that the heavy-duty (> 50 horsepower) off-road vehicles to be used in the construction project, including owned, leased and subcontractor vehicles, will achieve a project wide fleet-average 20% NO_X reduction. Prior to construction, the City's contractor shall submit to the SMAQMD a comprehensive inventory of all off-road construction equipment, equal to or greater than 50 horsepower, that will be used an aggregate of 40 or more hours during any portion of the construction of the Off-site Water Facilities. The inventory shall include the horsepower rating, engine production year, and projected hours of use or fuel throughput for each piece of equipment. The inventory shall be updated and submitted quarterly throughout the duration of the project, except that an inventory shall not be required for any 30-day period in which no construction activity occurs. At least 48 hours prior to the use of subject heavy-duty off-road equipment, the Off-site Water Facilities representative shall provide SMAQMD with the anticipated construction timeline including start date, and name and phone number of the project manager and on-site foreman.	Prior to construction of the Off-site Water Facilities.	City of Folsom Utilities Department	1. For improvements that would be located within the City of Folsom: City of Folsom Neighborhood Services Department, City of Folsom Community Development Department, and SMAQMD. 2. For improvements that would be located within unincorporated Sacramento County: Sacramento County Planning and Community Development Department and SMAQMD. 3. For improvements that would be located within the City of Rancho Cordova: City of Rancho Cordova Planning Department and SMAQMD.	

Table 1 Mitigation Monitoring and Reporting Plan for the Folsom South of U.S. Highway 50 Specific Plan Project				
Mitigation Measure	Timing	Implementation	Enforcement	Dated Signature for Verification of Compliance
Mitigation Measure 3B.2-1b: Conduct Visible Emissions Testing and if Non-Compliance, Repair Equipment Immediately. Controlling visible emissions from off-road diesel powered equipment. The City shall ensure that emissions from all off-road diesel powered equipment used on the project site do not exceed 40% opacity for more than three minutes in any one hour. Any equipment found to exceed 40% opacity (or Ringelmann 2.0) shall be repaired immediately, and the City and SMAQMD shall be notified within 48 hours of identification of non-compliant equipment. A visual survey of all in-operation equipment shall be made at least monthly, and a quarterly summary of the visual survey results shall be submitted throughout the duration of the project, except that the monthly summary shall not be required for any 30-day period in which no construction activity occurs. The monthly summary shall include the quantity and type of vehicles surveyed as well as the dates of each survey.	During construction of all Off-site Water Facilities.	City of Folsom Utilities Department	1. For improvements that would be located within the City of Folsom: City of Folsom Neighborhood Services Department, City of Folsom Community Development Department, and SMAQMD. 2. For improvements that would be located within unincorporated Sacramento County: Sacramento County Planning and Community Development Department and SMAQMD. 3. For improvements that would be located within the City of Rancho Cordova: City of Rancho Cordova Planning Department and SMAQMD.	
Mitigation Measure 3B.2-1c: Implement Fugitive Dust Control Measures and a Particulate Matter Monitoring Program during Construction. The City shall implement fugitive dust control measures and a particulate matter monitoring program during construction. The City shall ensure implementation of dust control measures and a particulate matter monitoring program during each phase of construction. Dust control measures may include, but are not limited to, the following: ▸ minimize on-site construction vehicle speeds on unpaved surfaces; ▸ post speed limits; ▸ suspend grading operations when wind is sufficient to generate visible dust clouds; ▸ pave, water, use gravel, cover, or spray a dust-control agent on all haul roads; ▸ Prohibit no open burning of vegetation during project construction; ▸ Chip or deliver vegetative material to waste-to-energy facilities; ▸ reestablish vegetation as soon as possible after construction and maintain vegetation consistent with the parameters established in Mitigation Measure 3B.2.1a; ▸ clean earthmoving construction equipment with water once daily and clean all haul trucks leaving the site; and ▸ water and keep moist exposed earth surfaces, graded areas, storage piles, and haul roads as needed to prevent fugitive dust.	During construction of all Off-site Water Facilities.	City of Folsom Utilities Department	1. For improvements that would be located within the City of Folsom: City of Folsom Neighborhood Services Department, City of Folsom Community Development Department, and SMAQMD. 2. For improvements that would be located within unincorporated Sacramento County: Sacramento County Planning and Community Development Department and SMAQMD. 3. For improvements that would be located within the City of Rancho Cordova: City of Rancho Cordova Planning Department and SMAQMD.	
Mitigation Measure 3B.2-3a: Cite Pump Siting Buffers Away from Sensitive Receptors. New pumping stations including back-up diesel generators shall be located more than 200 feet away from sensitive receptors. Electrically-powered pumps shall be used to power new pumps, to the extent practicable.	Prior to the approval of grading plans and building permits for all off-site water pumping facilities.	City of Folsom Utilities Department	1. For improvements that would be located within the City of Folsom: City of Folsom Neighborhood Services Department, City of Folsom Community Development Department	

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Mitigation Measure	Timing	Implementation	Enforcement	Dated Signature for Verification of Compliance
			and SMAQMD. 2. For improvements that would be located within unincorporated Sacramento County: Sacramento County Planning and Community Development Department and SMAQMD. 3. For improvements that would be located within the City of Rancho Cordova: City of Rancho Cordova Planning Department and SMAQMD.	
Mitigation Measure 3B.2-3b: Conduct Project-Level DPM Screening and Implement Measures to Reduce Annual DPM to Acceptable Concentrations. Screening-level DPM assessments shall be conducted for diesel-powered pump operations proposed within 200 feet of residences or other sensitive receptors. These analyses should include exact distances between the receptors and operations, and include the actual DPM emissions for the engines proposed. If the analysis shows an annual average DPM concentration from project operations at residences within 200 feet of the DPM source to be greater than 0.024 µg/m^3, the engine location shall be moved to a location where the annual average DPM concentration from project emissions at the residences is less than 0.024 µg/m^3. The acceptable concentration of 0.024 µg/m^3 was determined using the current OEHHA cancer potency factor and methodology for diesel exhaust (OEHHA 2003). If diesel exhaust concentrations at the affected receptor would be below 0.024 µg/m^3, then the cancer health risk would be less than 9.9 cancers in a million population.	Prior to the approval of grading plans and building permits for all off-site water pumping facilities.	City of Folsom Utilities Department	1. For improvements that would be located within the City of Folsom: City of Folsom Community Development Department and SMAQMD. 2. For improvements that would be located within unincorporated Sacramento County: Sacramento County Planning and Community Development Department and SMAQMD. 3. For improvements that would be located within the City of Rancho Cordova: City of Rancho Cordova Planning Department and SMAQMD.	
3A.3 BIOLOGICAL RESOURCES - LAND				
Mitigation Measure 3A.3-1a: 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 on the SPA and Use Low Impact Development Features. To minimize indirect effects on water quality and wetland hydrology, the project applicant(s) for any particular discretionary development application shall include stormwater drainage plans and erosion and sediment control plans in their improvement plans and shall submit these plans to the City Public Works Department for review and approval. For off-site elements within Sacramento County or El Dorado County jurisdiction (e.g., off-site detention basin and off-site roadway connections to El Dorado Hills), plans shall be submitted to the appropriate county planning department. Before approval of these improvement plans, the project applicant(s) for any particular discretionary development application 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. Detailed information about stormwater runoff standards and relevant City and County regulation is provided in Chapter 3A.9, "Hydrology and Water Quality." The project applicant(s) for any particular discretionary development entitlement shall implement stormwater quality treatment controls consistent with the Stormwater Quality Design Manual for Sacramento and South Placer Regions in effect at the time the application is submitted. Appropriate runoff controls such as berms, storm gates, off-stream detention basins, overflow collection areas, filtration systems,	Before approval of improvement and drainage plans, and on an ongoing basis throughout and after project construction, as required for all project phases.	Project applicant(s) of all project phases and on-site and off-site elements.	1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Public Works Department. 2. For the two roadway connections in El Dorado Hills: El Dorado County Development Services Department. 3. For the detention basin west of Prairie City Road: Sacramento County Planning and Community Development Department.	

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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 and is specified as a method for protecting water quality in the proposed specific plan. 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, as specified in the 404 permit. In addition to compliance with City ordinances, the project applicant(s) for any particular discretionary development application shall prepare a Stormwater Pollution Prevention Plan (SWPPP), and implement Best Management Practices (BMPs) that comply with the General Construction Stormwater Permit from the Central Valley RWQCB, to reduce water quality effects during construction. Detailed information about the SWPPP and BMPs are provided in Chapter 3A.9, "Hydrology and Water Quality." Each project development 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(s) shall establish a baseline of conditions for drainage on-site. The baseline-flow conditions shall be established for 2-, 5-, and 100-year storm events. These baseline conditions shall be used to develop monitoring standards for the stormwater system on the SPA. 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, which are described in Chapter 3A.9, "Hydrology and Water Quality," 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 preproject 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. See FEIR/FEIS Appendix S showing that the detention basin in the northeast corner of the SPA has been moved off stream. Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries must be coordinated by the project applicant(s) of each applicable project phase in consultation with the affected oversight agency(ies) (i.e., El Dorado County for the roadway connections, Sacramento County for the detention basin west of Prairie City Road, and Caltrans for the U.S. 50 interchange improvements) such that the performance standards described in Chapter 3A.9, "Hydrology and Water Quality," are met.			4. For the U.S. 50 interchange improvements: Caltrans. 5. U.S. Army Corps of Engineers, Sacramento District. 6. Central Valley Regional Water Quality Control Board.	
Mitigation Measure 3A.3-1b: Secure Clean Water Act Section 404 Permit and Implement All Permit Conditions; Ensure No Net Loss of Functions and Values 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 discretionary development entitlement, the project applicant(s) for any particular discretionary development application requiring fill of wetlands or other waters of the U.S. or waters of the state shall obtain all necessary permits under Sections 401 and 404 of the CWA or the state's Porter-Cologne Act for the respective phase. For each respective discretionary development entitlement, all 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 or lesser distance deemed sufficiently protective by a qualified biologist with approval from USFWS, including waters of the state, that potentially support Federally listed species. The project applicant(s) 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 plans for that development increment. 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 part of the Section 404 permitting process, a draft wetland mitigation and monitoring plan (MMP) shall be developed for the project on behalf of the project applicant(s). Before any ground-disturbing activities in an area that would adversely affect wetlands and before engaging in mitigation activities associated with each discretionary development entitlement, the project applicant(s) shall submit the draft wetland MMP to USACE, the Central Valley RWQCB, Sacramento County, El Dorado County, and the City for review and approval of those portions of the plan over which they have jurisdiction. The MMP would have to be finalized prior to impacting any wetlands. Once the final MMP is approved and implemented, mitigation monitoring shall continue for a minimum of 5 years from completion of mitigation, or human intervention (including recontouring and grading), or until the performance standards identified in the approved MMP have been met, whichever is longer. As part of the MMP, the project applicant(s) shall prepare and submit plans for the creation of aquatic habitat in order to adequately offset	Before the approval of grading or improvement plans or any ground-disturbing activities for any project development phase containing wetland features or other waters of the U.S.. The MMP must be approved before any impact on wetlands can occur. Mitigation shall be implemented on an ongoing basis throughout and after construction, as required.	Project applicant(s) for each discretionary development entitlement requiring fill of wetlands or other waters of the U.S. or waters of the state.	1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department. 2. For the two roadway connections in El Dorado Hills: El Dorado County Development Services Department. 3. For the detention basin west of Prairie City Road: Sacramento County Planning and Community Development Department. 4. For the U.S. 50 interchange improvements: Caltrans. 5. U.S. Army Corps of Engineers, Sacramento District; Central Valley Regional Water Quality Control Board as	

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and replace the aquatic functions and services that would be lost at the SPA, account for the temporal loss of habitat, and contain an adequate margin of safety to reflect anticipated success. Restoration of previously altered and degraded wetlands shall be a priority of the MMP for offsetting losses of aquatic functions on the SPA because it is typically easier to achieve functional success in restored wetlands than in those created from uplands. The MMP must demonstrate how the aquatic functions and values that would be lost through project implementation will be replaced. The habitat MMP for jurisdictional wetland features shall be consistent with USACE's and EPA's April 10, 2008 Final Rule for Compensatory Mitigation for Losses of Aquatic Resources (33 CFR Parts 325 and 332 and 40 CFR Part 230) and USACE's October 26, 2010 *Memorandum Re: Minimum Level of Documentation Required for Permit Decisions*. According to the Final Rule, mitigation banks should be given preference over other types of mitigation because a lot of the risk and uncertainty regarding mitigation success is alleviated by the fact that mitigation bank wetlands must be established and demonstrating functionality before credits can be sold. The use of mitigation credits also alleviates temporal losses of wetland function while compensatory wetlands are being established. Mitigation banks also tend to be on larger, more ecologically valuable parcels and are subjected to more rigorous scientific study and planning and implementation procedures than typical permittee-responsible mitigation sites (USACE and EPA, 2008). Permittee-responsible on-site mitigation areas can be exposed to long-term negative effects of surrounding development since they tend to be smaller and less buffered than mitigation banks. The Final Rule also establishes a preference for a "watershed approach" in selecting locations for compensatory mitigation project locations, that mitigation selection must be "appropriate and practicable" and that mitigation banks must address watershed needs based on criteria set forth in the Final Rule. The watershed approach accomplishes this objective by expanding the informational and analytic basis of mitigation project site selection decisions and ensuring that both authorized impacts and mitigation are considered on a watershed scale rather than only project by project. This requires a degree of flexibility so that district engineers can authorize mitigation projects that most effectively address the case-specific circumstances and needs of the watershed, while remaining practicable for the permittee. The SPA includes portions of the Alder Creek, Buffalo Creek, Coyote Creek, and Carson Creek Watersheds. The majority of the SPA is within the Alder Creek Watershed. Alder Creek and Buffalo Creek are part of the Lower American River Watershed. Carson Creek and Coyote Creek are part of the Cosumnes River Watershed. Mitigation credits may be available within the Cosumnes Watershed, but not within the American River Watershed and not within the sub-watersheds of the SPA. Therefore aquatic habitats may need to be restored or created on the SPA and adjacent off-site lands, preferably within the affected watersheds, in order to successfully replace lost functions at the appropriate watershed scale where loss of function would occur. It is not likely feasible to provide compensatory mitigation for all aquatic resource impacts on site. Therefore, a combination of on-site and off-site permittee-responsible mitigation and mitigation banking would likely be necessary to achieve the no-net-loss standard. The SPA is located within the service areas of several approved mitigation banks (e.g., Bryte Ranch, Clay Station, Fitzgerald Ranch, and Twin City Mitigation Bank). The majority of compensatory mitigation for wetland impacts is proposed to be accomplished at an agency-approved mitigation bank or banks authorized to sell credits to offset impacts in the SPA. The applicants' biological consultant, ECORP, has identified availability of approximately 31 vernal pool credits and 228 seasonal wetland credits at mitigation banks whose service area includes the SPA. Additional credits may also be available from pending, but not yet approved, mitigation banks. However, availability is subject to change and, as noted above, a combination of mitigation bank credits and permittee-responsible on and off-site mitigation may be necessary to fully offset project impacts on wetlands and other waters of the U.S. If USACE determines that the use of mitigation bank credits is not sufficient mitigation to offset impacts within the SPA, the October 26, 2010 Memorandum Re: Minimum Level of Documentation Required for Permit Decisions requires USACE to specifically demonstrate why the use of bank credits is not acceptable to USACE in accordance with Section 33 CFR 332.3(a)(1). Compensatory mitigation for losses of stream and intermittent drainage channels shall follow the Final Rule Guidelines , which specify that compensatory mitigation should be achieved through in-kind preservation, restoration, or enhancementwithin the same watershed, subject to practicability considerations. The wetland MMP shall address how to mitigate impacts on vernal pool, seasonal swale, seasonal wetland, seep, marsh, pond, and intermittent and perennial stream habitat, and shall describe specific method(s) to be implemented to avoid and/or mitigate any off-site project-related impacts. The wetland compensation section of the habitat MMP shall include the following: ► Compensatory mitigation sites and criteria for selecting these mitigation sites. In General, compensatory mitigation sites should meet the following criteria, based on the Final Rule; • located within the same watershed as the wetland or other waters that would be lost, as appropriate and practicable; • located in the most likely position to successfully replace wetland functions lost on the impact site considering watershed-scale features such as aquatic habitat diversity, habitat connectivity, available water sources and hydrologic relationships, land use trends, ecological benefits, and compatibility with adjacent land uses, and the likelihood for success and sustainability; ► A complete assessment of the existing biological resources in both the on-site preservation areas and off-site compensatory mitigation			appropriate depending on agency jurisdiction, and as determined during the Section 401 and Section 404 permitting processes and in compliance with the City's Grading Ordinance (Folsom Municipal Code 14.29), or appropriate county grading ordinance for off-site detention basin and roadway connections from Folsom Heights to El Dorado Hills.	

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areas, including wetland functional assessment using the California Rapid Assessment Method (CRAM) (Collins et al. 2008), or other appropriate wetland assessment protocol as determined through consultation with USACE and the USFWS, to establish baseline conditions; ▸ Specific creation and restoration plans for each mitigation site; ▸ Use of CRAM to compare compensatory wetlands to the baseline CRAM scores from wetlands in the SPA. The compensatory wetland CRAM scores shall be compared against the highest quality wetland of each type from the SPA; ▸ CRAM scores, or other wetland assessment protocol scores, from the compensatory wetlands shall be compared against the highest quality wetland scores for each wetland type to document success of compensatory wetlands in replacing the functions of the affected wetlands to be replaced; ▸ Monitoring protocol, including schedule and annual report requirements, and the following elements: • ecological performance standards, based on the best available science, that can be assessed in a practicable manner (e.g., performance standards proposed by Barbour et al. 2007). Performance standards must be based on attributes that are objective and verifiable; • assessments conducted annually for 5 years after construction or restoration of compensatory wetlands to determine whether these areas are acquiring wetland functions and to plot the performance trajectory of preserved, restored, or created wetlands over time. Assessments results for compensatory wetlands shall also be compared against scores for reference wetlands assessed in the same year; • assessments analysis conducted annually for 5 years after any construction adjacent to wetlands preserved on the SPA to determine whether these areas are retaining functions and values. Assessments results for wetlands preserved on site shall also be compared against scores for reference wetlands assessed in the same year; • analysis of assessments data, including assessment of potential stressors, to determine whether any remedial activities may be necessary; • corrective measures if performance standards are not met; • monitoring of plant communities as performance criteria (annual measure of success, during monitoring period) and success criteria (indicative of achievement of mitigation habitat requirement at end of monitoring period) for hydrologic function have become established and the creation site “matures” over time; • GIS analysis of compensatory wetlands to demonstrate actual acreage of functioning wetland habitat; • adaptive management measures to be applied if performance standards and acreage requirements are not being met; • responsible parties for monitoring and preparing reports; and • responsible parties for receiving and reviewing reports and for verifying success or prescribing implementation or corrective actions. A final operations and management plan (OMP) for all on- and off-site permittee-sponsored wetland preservation and mitigation areas shall be prepared and submitted to USACE and USFWS for review, comment and preliminary approval prior to the issuance of any permits under Section 404 of the CWA. The plan shall include detailed information on the habitats present within the preservation and mitigation areas, the long-term management and monitoring of these habitats, legal protection for the preservation and mitigation areas (e.g., conservation easement, declaration of restrictions), and funding mechanism information (e.g., endowment). A final OMP for each discretionary development entitlement affecting wetlands must be approved prior to construction. USACE has determined that the project will require an individual permit. In its final stage and once approved by USACE, the MMP for the project is expected to detail proposed wetland restoration, enhancement, and/or replacement activities that would ensure no net loss of aquatic functions in the project vicinity. Approval and implementation of the wetland MMP shall aim to fully mitigate all unavoidable impacts on jurisdictional waters of the U.S., including jurisdictional wetlands. In addition to USACE approval, approval by the City, Sacramento County, El Dorado County, and the Central Valley RWQCB, as appropriate depending on agency jurisdiction, and as determined during the Section 401 and Section 404 permitting processes, will also be required. Approvals from Sacramento County and El Dorado County shall be required for impacts resulting from off-site project elements occurring in these counties, such as the off-site detention basin in Sacramento County and the roadway connections into El Dorado County. To satisfy the requirements of the City and the Central Valley RWQCB, mitigation of impacts on the nonjurisdictional wetlands beyond the jurisdiction of USACE shall be included in the same MMP. All mitigation requirements determined through this process shall be implemented before grading plans are approved. The MMP shall be submitted to USACE and approved prior to the issuance of any permits under Section 404 of the CWA.				

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Water quality certification pursuant to Section 401 of the CWA will be required before issuance of a 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. Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries must be developed by the project applicant(s) of each applicable project phase in consultation with the affected oversight agency(ies) (i.e., Caltrans, El Dorado and/or Sacramento Counties).				
Mitigation Measure 3A.3-2a: Avoid Direct Loss of Swainson's Hawk and Other Raptor Nests. To mitigate impacts on Swainson's hawk and other raptors (including burrowing owl), the project applicant(s) of all project phases shall retain a qualified biologist to conduct preconstruction surveys and to identify active nests on and within 0.5 mile of the SPA and active burrows on the SPA. 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 for all project phases. 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 and other 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 consultation with DFG that reducing the buffer would not result in nest abandonment. DFG 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 DFG, 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 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 DFG. 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 50 feet of the burrow until young have fledged. Once it is confirmed that there are no owls inside burrows, these burrows may be collapsed. Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries must be developed by the project applicant(s) of each applicable project phase in consultation with the affected oversight agency(ies) (i.e., El Dorado and/or Sacramento Counties, or Caltrans), such that the performance criteria set forth in DFG's guidelines are determined to be met.	Before the approval of grading and improvement plans, before any ground-disturbing activities, and during project construction as applicable for all project phases.	Project applicant(s) of all project phases.	1. California Department of Fish and Game. 2. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department. 3. For the two roadway connections in El Dorado Hills: El Dorado County Development Services Department. 4. For the U.S. 50 interchange improvements: Caltrans. 5. For the detention basin west of Prairie City Road: Sacramento County Planning and Community Development Department.	
Mitigation Measure 3A.3-2b: Prepare and Implement a Swainson's Hawk Mitigation Plan. To mitigate for the loss of Swainson's hawk foraging habitat, the project applicant(s) of all project phases shall 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 or Sacramento County, as appropriate depending on agency jurisdiction, suitable Swainson's hawk foraging habitat to ensure 1:1 mitigation of habitat value for Swainson's hawk foraging habitat lost as a result of the project, as determined by the City, or Sacramento County, after consultation with DFG 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*, which call for the following mitigation ratios for loss of foraging habitat in these categories: 1:1 if within 1 mile of an active nest site, 0.75:1 if over 1 mile but less than 5 miles, and 0.5:1 if over 5 miles but less than 10 miles from an active nest site. Such mitigation shall be accomplished through credit purchase from an established mitigation bank approved to sell Swainson's hawk foraging habitat credits to mitigate losses in the SPA, if available, or through 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, or Sacramento County if outside City jurisdiction, after consultation with DFG, will determine the appropriateness of the mitigation land. Before approval of such proposed mitigation, the City, or Sacramento County for the off-site detention basin, shall consult with DFG regarding the appropriateness of the mitigation. If mitigation is accomplished through conservation easement, then such an easement shall ensure the continued management of the land to maintain Swainson's hawk foraging values, including but not limited to ongoing agricultural uses and the maintenance of all existing water rights associated with the land. The conservation easement shall be recordable and shall prohibit any activity that substantially impairs or diminishes the land's capacity as suitable Swainson's hawk habitat.	Before the approval of grading, improvement, or construction plans and before any ground-disturbing activity in any project development phase that would affect Swainson's hawk foraging habitat.	Project applicant(s) of all project phases.	1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department. 2. For the detention basin west of Prairie City Road: Sacramento County Planning and Community Development Department. 3. For the U.S. 50 interchange improvements: Caltrans.	

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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 DFG 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 DFG. The City, or County, after consultation with DFG and the Conservation Operator, shall approve the content and form of the conservation easement. The City, or County, DFG, 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, or County of jurisdiction, DFG, 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 or Sacramento County for the off-site detention basin to be distributed 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 DFG. Mitigation lands established or acquired for impacts incurred at the off-site detention basin 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 DFG, or Sacramento County and DFG depending on jurisdiction of the affected habitat. 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 reviewing regular monitoring reports prepared by the Conservation Operator of the mitigation site(s). Monitoring of the mitigation site(s) shall continue for the first 10 years after establishment of the easement and shall be funded through the endowment, or other appropriate funding mechanism, established by the project applicant(s). Sacramento County shall review the monitoring reports for impacts on habitat at the off-site detention basin. Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries must be coordinated by the project applicant(s) of each applicable project phase with the affected oversight agency(ies) (i.e., Sacramento County and Caltrans).				
Mitigation Measure 3A.3-2c: Avoid and Minimize Impacts to Tricolored Blackbird Nesting Colonies. To avoid and minimize impacts to tricolored blackbird, the project applicant(s) of all project phases 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 by a qualified biologist 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 DFG. 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. Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries (i.e., U.S. 50 interchange improvements) must be developed by the project applicant(s) of each applicable project phase in consultation with the affected oversight agency(ies) (i.e., Caltrans) and must be sufficient to achieve the performance criteria described above.	Before the approval of any ground-disturbing activity within 500 feet of suitable nesting habitat as applicable for all project phases.	Project applicant(s) of all project phases.	1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department. 2. For the U.S. 50 interchange improvements: Caltrans.	
Mitigation Measure 3A.3-2d: Avoid and Minimize Impacts to Special-Status Bat Roosts. The project applicant of all project phases containing potential bat roosting habitat shall retain a qualified biologist to conduct surveys for roosting bats. Surveys shall be conducted in the fall to determine if the mine shaft is 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 DFG 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	Before the approval of removal or fill of the mine shaft on the SPA.	Project applicant(s) of all project phases containing potential bat roosting habitat.	City of Folsom Community Development Department.	

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Mitigation Measure	Timing	Implementation	Enforcement	Dated Signature for Verification of Compliance
young). The loss of each roost (if any) will be replaced in consultation with DFG 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.				
Mitigation Measure 3A.3-2e: Obtain an Incidental Take Permit under Section 10(a) of ESA; Develop and Implement a Habitat Conservation Plan to Compensate for the Loss of Vernal Pool Habitat. The project applicant(s) for all project phases shall obtain an incidental take permit under Section 10(a) of ESA. 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 a BO has been issued by USFWS and the project applicant(s) have abided by conditions in the BO (including all conservation and minimization measures). Conservation and minimization measures are likely to include preparation of supporting documentation describing methods to protect existing vernal pools during and after project construction. Under the No Federal Action Alternative, interagency consultation under Section 7 of ESA would not occur; therefore, the project applicant(s) would be required to develop a habitat conservation plan to mitigate impacts on Federally listed vernal pool invertebrates. The project applicant(s) shall complete and implement, or participate in, a habitat conservation plan that shall compensate for the loss of acreage, function, and value of affected vernal pool habitat. The habitat conservation plan shall be consistent with the goals of the Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon (USFWS 2005) and must be approved by USFWS. The project applicant(s) for all project phases shall ensure that there is sufficient upland habitat within the target areas for creation and restoration of vernal pools and vernal pool complexes to provide ecosystem health. The land used to satisfy this mitigation measure shall be protected through a fee title or conservation easement acceptable to the City and USFWS. The project applicant(s) for all project phases shall identify the extent of indirectly affected vernal pool and seasonal wetland habitat, either by identifying all such habitat within 250 feet of project construction activities or by providing an alternative technical evaluation in support of a lesser indirect impact distance. If a lesser distance is pursued, this distance shall be approved by USFWS. The project applicant(s) shall preserve 2 wetted acres of vernal pool habitat for each wetted acre of any indirectly affected vernal pool habitat. This mitigation shall occur before the approval of any grading or improvement plans for any project phase that would allow work within 250 feet of such habitat, and before any ground-disturbing activity within 250 feet of the habitat. The project applicant(s) will not be required to complete this mitigation measure for direct or indirect impacts that have already been mitigated to the satisfaction of USFWS through another BO or mitigation plan. A standard set of BMPs shall be applied to construction occurring in areas within 250 feet of off-site vernal pool habitat, or within any lesser distance deemed adequate by a qualified biologist (with approval from USFWS) to constitute a sufficient buffer from such habitat. Refer to Section 3A.9, "Hydrology and Water Quality - Land" for the details of BMPs to be implemented. Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries must be coordinated by the project applicant(s) of each applicable project phase with the affected oversight agency(ies) (i.e., El Dorado and/or Sacramento Counties or Caltrans).	Before the approval of any grading or improvement plans, before any ground-disturbing activities within 250 feet of said habitat, and on an ongoing basis throughout construction as applicable for all project phases as required by the habitat conservation plan and/or BO.	Project applicant(s) of all project phases and on-site and off-site elements.	1. U.S. Fish and Wildlife Service. 2. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department. 3. For the two roadway connections in El Dorado Hills: El Dorado County Development Services Department. 4. For the detention basin west of Prairie City Road: Sacramento County Planning and Community Development Department. 5. For the U.S. 50 interchange improvements: Caltrans.	
Mitigation Measure 3A.3-2f: Obtain an Incidental Take Permit under Section 10(a) of ESA; Develop and Implement a Habitat Conservation Plan to Compensate for the Loss of VELB Habitat. As long as valley elderberry longhorn beetle remains a species protected under ESA, the project applicant(s) of all project phases containing elderberry shrubs shall obtain an incidental take permit under Section 10(a) of ESA for valley elderberry longhorn beetle. No project construction shall proceed in areas potentially containing valley elderberry longhorn beetle until a BO has been issued by USFWS, and the project applicant(s) for all project phases have abided by all pertinent conditions in the take permit relating to the proposed construction, including all conservation and minimization measures. Conservation and minimization measures are likely to include preparation of supporting documentation that describes methods for relocation of existing shrubs and maintaining existing shrubs and other vegetation in a conservation area. Under the No Federal Action Alternative, interagency consultation under Section 7 of ESA would not occur; therefore, the project applicant(s) would be required to develop a habitat conservation plan to mitigate impacts on valley elderberry longhorn beetle. The project applicant(s) shall complete and implement a habitat conservation plan that will compensate for the loss of valley elderberry longhorn beetle. Relocation of existing elderberry shrubs and planting of new elderberry seedlings shall be implemented on a no-net-loss basis. Detailed information on monitoring success of relocated and planted shrubs and measures to compensate (should success criteria not be met) would also likely be required in the BO. Ratios for mitigation of valley elderberry longhorn beetle habitat will ultimately be determined through the ESA Section 10(a) consultation process with USFWS, but shall be a minimum of "no net loss." Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries (i.e., U.S. 50 interchange improvements) must be coordinated by the project applicant(s) of each applicable project phase with the affected oversight agency(ies) (i.e., Caltrans).	Before the approval of any grading or improvement plans or any ground-disturbing activity within 100 feet of valley elderberry longhorn beetle habitat as applicable for all project phases, and on an ongoing basis as required by the habitat conservation plan and/or BO.	Project applicant(s) of all project phases potentially containing elderberry shrubs.	1. U.S. Fish and Wildlife Service 2. City of Folsom Community Development Department. 3. For the U.S. 50 interchange improvements: Caltrans.	

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Mitigation Measure	Timing	Implementation	Enforcement	Dated Signature for Verification of Compliance
Mitigation Measure 3A.3-2g: Secure Take Authorization for Federally Listed Vernal Pool Invertebrates and Implement All Permit Conditions. 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 a biological opinion (BO) or Not Likely to Adversely Affect (NLAA) letter has been issued by USFWS and the project applicant(s) for any particular discretionary development entitlements affecting such areas have abided by conditions in the BO (including conservation and minimization measures) intended to be completed before on-site construction. Conservation and minimization measures shall include preparation of supporting documentation describing methods to protect existing vernal pools during and after project construction, a detailed monitoring plan, and reporting requirements. As described under Mitigation Measure 3A.3-1a, an MMP shall be developed that describes details how loss of vernal pool and other wetland habitats shall be offset, including details on creation of habitat, account for the temporal loss of habitat, contain performance standards to ensure success, and outline remedial actions if performance standards are not met. The project applicant(s) for any particular discretionary development application potentially affecting vernal pool habitat shall complete and implement a habitat MMP that will result in no net loss of acreage, function, and value of affected vernal pool habitat. The final habitat MMP shall be consistent with guidance provided in *Programmatic Formal Endangered Species Act Consultation on Issuance of 404 Permits for Projects with Relatively Small Effects on Listed Vernal Pool Crustaceans within the Jurisdiction of the Sacramento Field Office, California* (USFWS 1996) or shall provide an alternative approach that is acceptable to the City, USACE, and USFWS and accomplishes no net loss of habitat acreage, function, and value. The project applicant(s) for any particular discretionary development application “potentially affecting vernal pool habitat” shall ensure that there is sufficient upland habitat within the target areas for creation and restoration of vernal pools and vernal pool complexes to provide ecosystem health. This standard shall be accomplished by requiring the project applicant(s) for any discretionary development application affecting vernal pool or seasonal wetland habitat to identify the extent of indirectly affected vernal pool and seasonal wetland habitat, either by identifying all such habitat within 250 feet of project construction activities or by providing an alternative technical evaluation. If a lesser distance is pursued, this distance shall be approved by USFWS. The project applicant(s) shall preserve acreage of vernal pool habitat for each wetted acre of any indirectly affected vernal pool habitat at a ratio approved by USFWS at the conclusion of the Section 7 consultation. This mitigation shall occur before the approval of any grading or improvement plans for any project phase that would allow work within 250 feet of such habitat or lesser distance deemed sufficiently protective by a qualified biologist with approval from USFWS, and before any ground-disturbing activity within 250 feet of the habitat or lesser distance deemed sufficiently protective by a qualified biologist with approval from USFWS. The project applicant(s) will not be required to complete this mitigation measure for direct or indirect impacts that have already been mitigated to the satisfaction of USFWS through another BO or mitigation plan (i.e., if impacts on specific habitat acreage are mitigated by one project phase or element, the project applicant(s) will not be required to mitigate for it again in another phase of the project). A standard set of BMPs shall be applied to construction occurring in areas within 250 feet of off-site vernal pool habitat, or within any lesser distance deemed adequate by a qualified biologist (with approval from USFWS) to constitute a sufficient buffer from such habitat. Refer to Section 3A.9, “Hydrology and Water Quality - Land” for the details of BMPs to be implemented. Mitigation for the off-site elements outside of the City of Folsom’s jurisdictional boundaries must be developed by the project applicant(s) of each applicable project phase in consultation with the affected oversight agency(ies) (i.e., El Dorado and/or Sacramento Counties, or Caltrans).	Before the approval of any grading or improvement plans, before any ground-disturbing activities within 250 feet of said habitat or lesser distance deemed sufficiently protective by a qualified biologist with approval from USFWS, and on an ongoing basis throughout construction as applicable for all project phases as required by the mitigation plan, BO, and/or BMPs.	Project applicant(s) of all project phases.	1. U.S. Army Corps of Engineers, Sacramento District; U.S. Fish and Wildlife Service. 2. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department. 3. For the two roadway connections in El Dorado Hills: El Dorado County Development Services Department. 4. For the U.S. 50 interchange improvements: Caltrans. 5. For the detention basin west of Prairie City Road: Sacramento County Planning and Community Development Department.	
Mitigation Measure 3A.3-2h: Obtain Incidental Take Permit for Impacts on Valley Elderberry Longhorn Beetle and Implement All Permit Conditions. Before each phase of the project, the project applicant(s) shall have a qualified biologist identify any elderberry shrubs within 100 feet of the project footprint and conduct a survey for valley elderberry longhorn beetle exit holes in stems greater than 1 inch in diameter. If no project activity, including grading or use of herbicides, would occur within 100 feet of an elderberry shrub, then no further mitigation shall be required for valley elderberry longhorn beetle in those areas. If project activities would occur within 100 feet of any elderberry shrubs, consultation with USFWS under Section 7 will be required. No project construction shall proceed in areas potentially containing valley elderberry longhorn beetle until a BO has been issued by USFWS, and the project applicant(s) of all project phases have abided 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. Conservation and minimization measures are likely to include preparation of supporting documentation that describes methods for relocation of existing shrubs and maintaining existing shrubs and other vegetation in a conservation area. Relocation of existing elderberry shrubs and planting of new elderberry seedlings shall be implemented consistent with the mitigation ratios	Before the approval of any grading or improvement plans or any ground-disturbing activity within 100 feet of valley elderberry longhorn beetle habitat as applicable for all project phases, and on an ongoing basis as required by BO.	Project applicant(s) of all project phases.	1. U.S. Army Corps of Engineers, Sacramento District; U.S. Fish and Wildlife Service. 2. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department. 3. For the U.S. 50 interchange improvements: Caltrans.	

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described in the Conservation Guidelines for the Valley Elderberry Longhorn Beetle (USFWS 1999). The 1999 conservation guidelines mitigation ratios are based on whether the affected shrub is located in riparian or non riparian habitat, the size of stems affected, and the presence of beetle exit holes. Compensatory mitigation for elderberry shrubs that would be removed from their current locations would be developed in consultation with USFWS during the Section 7 consultation process. Compensatory mitigation may include planting replacement elderberry seedlings or cuttings and associated native plants within the open space areas of the SPA, planting replacement elderberry seedlings or cuttings and associated native plants at a suitable off-site location, purchasing credits at an approved mitigation bank, or a combination thereof. Relocated and replacement shrubs and associated native plantings shall be placed in conservation areas providing a minimum of 1,800 square feet per transplanted shrub. These conservation areas shall be preserved in perpetuity as habitat for valley elderberry longhorn beetle. The number of elderberry shrubs that would be affected by implementing the project is expected to be low because there are currently a total of less than 10 shrubs known to be present on the SPA. Ratios for mitigation of valley elderberry longhorn beetle habitat will ultimately be determined through the ESA Section 7 consultation process with USFWS, but shall be a minimum of “no net loss.” USFWS uses stem count data, presence or absence of exit holes, and whether the affected elderberry shrubs are located in riparian habitat to determine the number of elderberry seedlings or cuttings and associated riparian vegetation that would need to be planted as compensatory mitigation for affected elderberry longhorn beetle habitat. The final VELB mitigation plan, including transplanting procedures, long-term protection, management of the mitigation areas, and monitoring procedures shall be consistent with the Conservation Guidelines for the Valley Elderberry Longhorn Beetle (USFWS 1999). 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 applicant(s) 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 BO. Mitigation for the off-site elements outside of the City of Folsom’s jurisdictional boundaries (i.e., U.S. 50 interchange improvements) must be developed by the project applicant(s) of each applicable project phase in consultation with the affected oversight agency(ies) (i.e., Caltrans) and must be sufficient to achieve the performance criteria described above.				
Mitigation Measure 3A.3-3: Conduct Special-Status Plant Surveys; Implement Avoidance and Mitigation Measures or Compensatory Mitigation. To mitigate for the potential loss or degradation of special-status plant species and habitat, the project applicant(s) for any particular discretionary development application shall adhere to the requirements described below. ▸ The project applicant(s) for any particular discretionary development application, including the proposed off-site elements, shall retain a qualified botanist to conduct protocol level preconstruction special-status plant surveys for all potentially occurring species. Preconstruction special-status plant surveys shall not be required for those portions of the SPA that have already been surveyed according to DFG and USFWS guidelines. If no special-status plants are found during focused surveys, the botanist shall document the findings in a letter report to USFWS, DFG, the City of Folsom, Caltrans (for interchange improvements to U.S. 50), El Dorado County (for roadway connections in El Dorado County), and Sacramento County (for the off-site detention basin) and no further mitigation shall be required. ▸ If special-status plant populations are found, the project applicant(s) of affected developments shall consult with DFG 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 Caltrans (for interchange improvements to U.S. 50), El Dorado County (for impacts in roadway connections in El Dorado County), Sacramento County (for impacts in the off-site detention basin footprint), or the City of Folsom (for on-site impacts and all other off-site elements), for review and approval. It shall be submitted concurrently to DFG or USFWS, as appropriate depending on species status, for review and comment. 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	Before approval of grading or improvement plans or any ground disturbing activities, including grubbing or clearing, for any project phase, including off-site elements.	Project applicant(s) of all project phases and on- and off-site elements.	1. U.S. Fish and Wildlife Service, California Department of Fish and Game. 2. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department. 3. For the two roadway connections in El Dorado Hills: El Dorado County Development Services Department. 4. For the detention basin west of Prairie City Road: Sacramento County Planning and Community Development Department. 5. For the U.S. 50 interchange improvements: Caltrans.	

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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. Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries must be coordinated by the project applicant(s) of each applicable project phase with the affected oversight agency(ies) (i.e., Caltrans, El Dorado and/or Sacramento Counties).				
Mitigation Measure 3A.3-4a: Secure and Implement Section 1602 Streambed Alteration Agreement. The project applicant(s) for any particular discretionary development application shall obtain a Section 1602 streambed alteration agreement from DFG for all construction activities that would occur in the bed and bank of Alder Creek and other drainage channels and ponds on the SPA. As a condition of issuance of the streambed alteration agreement, the project applicant(s) for any particular discretionary development application affecting riparian habitat shall hire a qualified restoration ecologist to prepare a riparian habitat MMP. The draft MMP shall describe specific method(s) to be implemented to avoid and/or compensate for impacts on the stream channel of Alder Creek and other drainage channels within DFG jurisdiction, and the bed and banks of the on-site ponds. Mitigation measures may include establishment or restoration of riparian habitat within the project's open space areas along preserved stream corridors, riparian habitat restoration off-site, or preservation and enhancement of existing riparian habitat either on or off the SPA. The compensation habitat shall be similar in composition and structure to the habitat to be removed and shall be at ratios adequate to offset the loss of riparian habitat functions and services at the SPA. The riparian habitat compensation section of the habitat MMP shall include the following: ▸ compensatory mitigation sites and criteria for selecting these mitigation sites; ▸ complete assessment of the existing biological resources in both the on-site and off-site preservation and restoration areas; ▸ site-specific management procedures to benefit establishment and maintenance of native riparian plant species, including black willow, arroyo willow, white alder, and Fremont cottonwood; ▸ a planting and irrigation program if needed for establishment of native riparian trees and shrubs at strategic locations within each mitigation site (planting and irrigation may not be necessary if preservation of functioning riparian habitat is chosen as mitigation or if restoration can be accomplished without irrigation or planting); ▸ in kind reference habitats for comparison with compensatory riparian habitats (using performance and success criteria) to document success; ▸ monitoring protocol, including schedule and annual report requirements (compensatory riparian habitats shall be monitored for a minimum period of five years); ▸ ecological performance standards, based on the best available science and including specifications for native riparian plant densities, species composition, amount of dead woody vegetation gaps and bare ground, and survivorship; at a minimum, compensatory mitigation planting sites must achieve 80% survival of planted riparian trees and shrubs by the end of the five-year maintenance and monitoring period or dead and dying trees shall be replaced and monitoring continued until 80% survivorship is achieved; ▸ corrective measures if performance standards are not met; ▸ responsible parties for monitoring and preparing reports; and ▸ responsible parties for receiving and reviewing reports and for verifying success or prescribing implementation or corrective actions. Any conditions of issuance of the 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 DFG jurisdiction. The agreement shall be executed by the project applicant(s) and DFG 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 DFG jurisdiction and their associated freshwater marsh and riparian habitat. Mitigation for the U.S. 50 interchange improvements must be coordinated by the project applicant(s) of each applicable project phase with the Caltrans.	Before the approval of grading or improvement plans or any construction activities (including clearing and grubbing) that affect the bed and bank or riparian and freshwater marsh habitat associated with Alder Creek and other on-site or off-site drainage channels and ponds.	Project applicant(s) of all project phases and the off-site Prairie City Road and Oak Avenue interchange improvements.	1. California Department of Fish and Game, 2. City of Folsom Community Development Department. 3. Caltrans for interchange improvements to U.S. 50.	

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Mitigation Measure	Timing	Implementation	Enforcement	Dated Signature for Verification of Compliance
Mitigation Measure 3A.3-4b: Conduct Surveys to Identify and Map Valley Needlegrass Grassland; Implement Avoidance and Minimization Measures or Compensatory Mitigation. The project applicant(s) of all project phases shall retain a qualified botanist to conduct preconstruction surveys to determine if valley needlegrass grassland is present on the SPA. 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, and require preparation of a plant community map. If valley needlegrass grassland is not found on the SPA, the botanist shall document the findings in a letter report to the City of Folsom, and no further mitigation shall be required. Valley needlegrass grassland was not found in any of the off-site project elements. If valley needlegrass grassland is found on the SPA, 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) for any particular discretionary development application affecting valley needlegrass grassland shall consult with DFG and the City of Folsom to determine appropriate mitigation for removal of valley needlegrass grassland resulting from project implementation. Mitigation measures shall include one or more of the following components sufficient to achieve no net loss of valley needlegrass grassland acreage: 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 SPA. The applicant(s) shall compensate for any loss of valley needlegrass grassland resulting from project implementation at a minimum 1:1 replacement ratio.	Before approval of grading or improvement plans or any ground-disturbing activities, including grubbing or clearing, for any project phase.	Project applicant(s) for any particular discretionary development application affecting valley needlegrassland.	1. California Department of Fish and Game, 2. City of Folsom Community Development Department.	
Mitigation Measure 3A.3-5: 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 Retained On Site. The project applicant(s) shall prepare an oak woodland mitigation and monitoring plan. The project applicant(s) of all on- and off-site project phases containing oak woodland habitat or individual trees shall adhere to the requirements described below, which are consistent with those 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 was 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 were considered isolated trees and not part of the blue oak woodland community. Mitigation for impacts on isolated oak trees is discussed separately below. ▸ Preserve approximately 399 acres of existing oak woodland habitat in the SPA (this acreage is based on the extent of oak woodland habitat as determined from aerial photograph interpretation; however, following completion of ground verification by a qualified arborist, the actual amount of oak woodland present within impact areas could be slightly greater or lesser than the amount calculated from aerial photograph and, therefore, the amount preserved could also be slightly greater or lesser than 399 acres). ▸ Create 243 acres of oak woodland habitat in the SPA by planting a combination of blue oak acorns, seedlings, and trees in the following SPA locations: • Non-wooded areas that are adjacent to or contiguous with the existing oak woodland habitat. • Preserve and passive open space zones throughout the SPA. • Open space areas that are adjacent to existing oak woodlands that will be impacted by project grading (i.e. catch slopes). • Other practical locations within the SPA in or adjacent to open space. **Oak Woodlands Mitigation Planting Criteria** The following oak woodland mitigation planting criteria shall be used to create oak woodland habitat: • A minimum of 55 planting sites per acre (with a total of 70 units, as defined below) will mitigate for one acre of oak woodland impacts. A combination of acorns, seedlings, and various sizes of container trees (#1 container, #5 container, #15 container) or transplanted trees shall be incorporated into the planting design. Mitigation acreage that is planted solely with larger oak trees (no acorns) shall have a minimum of 35 planting sites per acre. The units are defined as follows: - One established acorn equals one unit (acorns will be over planted to maximize potential germination). - One oak seedling equals one unit. - One #1 container oak tree equals two units. - One #5 container oak tree equals three units. - One #15 container oak tree equals four units. - One 24-inch boxed oak tree equals six units. - One transplanted oak tree equals four units per trunk diameter inch (dbh).	Before approval of grading or improvement plans or any ground disturbing activities, including grubbing or clearing, for any project phase containing protected trees or oak woodland.	Project applicant(s) of all project phases and off-site elements affecting blue oak woodland and protected trees.	1. City of Folsom Community Development Department. 2. Caltrans for interchange improvements to U.S. 50.	

Table 1 Mitigation Monitoring and Reporting Plan for the Folsom South of U.S. Highway 50 Specific Plan Project				
Mitigation Measure	Timing	Implementation	Enforcement	Dated Signature for Verification of Compliance
- Native non oak species characteristic of oak woodlands shall be included in the mitigation planting plan to augment overall habitat values. Each non oak tree species shall represent unit values described above for oak trees, but non oak species shall comprise no more than 10% of the mitigation plantings. ▸ 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), if needed to achieve the creation goal of 243 acres of new blue oak woodland habitat. This measure would only be needed if 243 acres of blue oak woodland could not be created in the SPA. 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 in the SPA 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 in sufficient numbers to achieve 80% survival rate for planted trees by the end of the eight-year maintenance and monitoring period. 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. **Isolated Oak Tree Mitigation** The project applicant(s) of all on-site project phases containing oak woodland habitat or isolated trees and the off-site Prairie City Road and Oak Avenue interchange improvements to U.S. 50; Rowberry Drive Overcrossing; and the underground sewer force main 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 applicants have developed a plan, as set forth Section 10 of the Folsom Plan Area Specific Plan (attached to this EIR/EIS as Appendix N) specifically to avoid and minimize adverse effects on isolated oak trees from project development and to provide compensatory mitigation for removal of protected trees in the SPA. 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 applicants and agreed upon by the City: ▸ Project applicant(s) of projects containing isolated oak trees 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.				

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Mitigation Monitoring and Reporting Plan for the Folsom South of U.S. Highway 50 Specific Plan Project

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• 1 = Hazardous or non correctable condition – the tree is in extremely poor condition and in non-reversible 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). **Isolated Oak Tree Mitigation Planting Criteria** ► The determination for whether an isolated 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 isolated oaks measuring 24 inches or greater dbh for a single trunk or 40 inches or more for a multi-trunked tree and rated a 3 to5 shall be retained, 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 of the SPA properties. • Native oaks measuring between 12 and 24 inches dbh and rated a 4 or 5 shall not be removed or mitigated unless 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 of the SPA properties. 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 cost of implementing the isolated oak tree mitigation planting criteria described here) 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 cost of implementing the isolated oak tree mitigation planting criteria described here) 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 container 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 — Three #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 an 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 on the SPA, the project applicant(s) of all affected project phases shall install high visibility fencing outside the outer edge of the drip lines of all trees to be retained on the SPA during project construction. The fencing may be installed around groups or stands of trees or whole wooded areas bust must be installed so that the drip				

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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 (for County off-site impacts only) and/or the City of Folsom. Mitigation for the U.S. 50 interchange improvements must be coordinated by the project applicant(s) of each applicable project phase with Caltrans.				
3B.3 BIOLOGICAL RESOURCES- WATER				
Mitigation Measure 3B.3-1a: Secure Clean Water Act Section 404 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 the Off-site Water Facilities requiring fill of wetlands or other waters of the U.S. or waters of the state, the City shall obtain all necessary permits under Sections 401 and 404 of the CWA or the state's Porter-Cologne Water Quality Control Act for the respective phase. For each respective Off-site Water Facility component, all 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. The City 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 plans for that phase. 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 part of the Section 404 permitting process, a draft wetland mitigation and monitoring plan (MMP) shall be developed for the selected Off-site Water Facility Alternative on behalf of the City. Before any ground-disturbing activities that would adversely affect wetlands and before engaging in mitigation activities associated with each phase of development, the City shall submit the draft wetland MMP to USACE and the Central Valley RWQCB for review and approval of those portions of the plan over which they have jurisdiction. The MMP would have to be approved prior to issuance of a Section 404 permit. Once the final MMP is approved and implemented, mitigation monitoring shall continue for a minimum of 5 years from completion of mitigation, or human intervention (including recontouring and grading), or until the performance standards identified in the approved MMP have been met, whichever is longer. As part of the MMP, the City shall prepare and submit plans for the creation of aquatic habitat in order to adequately offset and replace the aquatic functions and services that would be lost, account for the temporal loss of habitat, and contain an adequate margin of safety to reflect anticipated success. Restoration of previously altered and degraded wetlands shall be a priority of the MMP for offsetting losses of aquatic functions on the project site because it is typically easier to achieve functional success in restored wetlands than in those created from uplands. The MMP must demonstrate how the aquatic functions and values that would be lost through project implementation will be replaced. The habitat MMP for jurisdictional wetland features shall be consistent with USACE's and EPA's April 10, 2008 Final Rule for Compensatory Mitigation for Losses of Aquatic Resources (33 CFR Parts 325 and 332 and 40 CFR Part 230). According to the Final Rule, mitigation banks should be given preference over other types of mitigation because a lot of the risk and uncertainty regarding mitigation success is alleviated by the fact that mitigation bank wetlands must be established and demonstrating functionality before credits can be sold. This also alleviates temporal losses of wetland function while compensatory wetlands are being established. Mitigation banks also tend to be on larger, more ecologically valuable parcels and are subjected to more rigorous scientific study and planning and implementation procedures than typical permittee-responsible mitigation sites (USACE and EPA 2008). It is not likely feasible to provide compensatory mitigation for all aquatic resource impacts on site. Therefore, a combination of on-site and off-site permittee-responsible mitigation and mitigation banking would likely be necessary to achieve the no-net-loss standard. Compensatory mitigation for losses of stream and intermittent drainage channels shall be achieved through in-kind preservation, restoration, or enhancement, as specified in the Final Rule guidelines. The wetland MMP shall address how to mitigate impacts on all aquatic resource types and shall describe specific method(s) to be implemented to avoid and/or mitigate any Off-site Water Facility-related impacts. The	Before the approval of grading or improvement plans or any ground-disturbing activities for all the Off-site Water Facilities containing wetland features or other waters of the U.S. The MMP must be approved before any impact on wetlands can occur. Mitigation shall be implemented on an ongoing basis throughout and after construction, as required.	City of Folsom Utilities Department	U.S. Army Corps of Engineers, Regional Water Quality Control Board, California Department of Fish and Game.	

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wetland compensation section of the habitat MMP shall include all the contents identified in Mitigation Measure 3A.3-1A. USACE has determined that the Off-site Water Facilities may require an individual permit. In its final stage and once approved by USACE, the MMP for the Off-site Water Facilities is expected to detail proposed wetland restoration, enhancement, and/or replacement activities that would ensure no net loss of aquatic functions in the project vicinity. Approval and implementation of the wetland MMP shall aim to fully mitigate all unavoidable impacts on jurisdictional waters of the U.S., including jurisdictional wetlands. To satisfy the requirements of the City and the Central Valley RWQCB, mitigation of impacts on the non-jurisdictional wetlands beyond the jurisdiction of USACE shall be included in the same MMP. All mitigation requirements determined through this process shall be implemented before grading plans are approved. The MMP shall be submitted to USACE and approved prior to the issuance of any permits under Section 404 of the CWA. Water quality certification pursuant to Section 401 of the CWA will be required before issuance of the Section 404 permit. Before construction in any areas containing wetland features, the City shall obtain water quality certification for the Off-site Water Facilities. Any measures required as part of the issuance of water quality certification shall be implemented.				
Mitigation Measure 3B.3-1b: Maximum Use of Trenchless Technology for Conveyance Pipeline Design. Following the selection of a Off-site Water Facility Alternative, the City shall design and route the water conveyance pipeline to avoid waters of the U.S and State, including wetlands and vernal pools, to the maximize extent practical. Where avoidance is not practical, the City shall maximize the use of trenchless technologies (micro-tunneling or jack-and-bore), where feasible. All trenchless construction crossings will include the preparation of a Frac-Out (or inadvertent return of drilling lubricants) Contingency Plan for tunneling activities that use drilling lubricants (e.g., construction of pipelines using jack-and-bore methods). The purpose of the plan will be to minimize the potential for a frac-out associated with tunneling activities, provide for the timely detection of frac-outs, and ensure an organized, timely, and “minimum-impact” response in the event of a frac-out and release of drilling lubricant (i.e., bentonite). Preparation and implementation of a Frac-Out Contingency Plan will be reflected in contract documents.	Prior to and during construction of all Off-Site Water Facilities	City of Folsom Utilities Department	U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, Regional Water Quality Control Board, California Department of Fish and Game.	
Mitigation Measure 3B.3-1c: Restore All Waters Impacted by Trenching and Temporary Construction Staging Areas to Pre-Project Contours and Conditions. For all water line crossings of waters of the U.S. or State in which the use of trenchless technologies are not feasible, the City shall ensure that all waters impacted by trenching activities are restored to pre-project contours and conditions. In addition, within 30 days following project construction, the City shall ensure that all temporary construction staging areas within waters of the U.S. or State are restored to pre-project contours and conditions. At minimum, the City shall ensure that the following measures are implemented during construction: ▸ Conduct trenching and construction activities across drainages during low-flow (e.g., <1 to 2 cfs) or dry periods as feasible; ▸ If working in active channels, install cofferdam upstream and downstream of stream crossing to separate construction area from flowing waterway; ▸ Place sediment curtains upstream and downstream of the construction zone to prevent sediment disturbed during trenching activities from being transported and deposited outside of the construction zone; ▸ Locate spoil sites such that they do not drain directly into the drainages or seasonal wetlands; ▸ Store equipment and materials away from the drainages and wetland areas. No debris will be deposited within 250 feet of the drainages and wetland areas; ▸ Prepare and implement a revegetation plan to restore vegetation in all temporarily disturbed wetlands and other waters using native species seed mixes and container plant material that are appropriate for existing hydrological conditions. Before the approval of grading and improvement plans and before any groundbreaking activity associated with the Off-site Water Facilities requiring fill of wetlands or other waters of the U.S. or waters of the state, the City shall submit a wetland mitigation and monitoring plan (MMP) for the restoration of these waters within the selected water alignment to the USACE and Central Valley RWQCB for review and approval of those portions of the plan over which they have jurisdiction. The MMP would have to be approved prior to issuance of a Section 404 permit. Once the final MMP is approved and implemented, mitigation monitoring shall continue for a minimum of 5 years from completion of restoration activities, or human intervention (including recontouring and grading), or until the performance standards identified in the approved MMP have been met, whichever is longer. At minimum, the MMP shall provide the following information: ▸ A description and drawings showing the existing contours (elevation) and existing vegetation of the waters of the U.S. and State that would be impacted through trenching activities. This information shall include site photographs taken at each impacted water.	Before the approval of grading or improvement plans or any ground-disturbing activities for all the Off-site Water Facilities containing wetland features or other waters of the U.S.	City of Folsom Utilities Department	1. U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, Regional Water Quality Control Board, California Department of Fish and Game. 2. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department. 3. For improvements within Sacramento County or City of Rancho Cordova: Sacramento County Planning and Community Development Department or City of Rancho Cordova Planning Department.	

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▸ Methods used to ensure that trenching within waters of the U.S. and State do not adversely alter existing hydrology, including the draining of the waters (e.g., use of cut-off walls). ▸ The methods used to restore the site to the original contour and condition, as well as a plan for the revegetation of the site following installation of the water line. ▸ Proposed schedule for restoration activities				
Mitigation Measure 3B.3-2: Conduct Preconstruction Survey for Western Spadefoot Toad and Northwestern Pond Turtle and if Found, Implement Avoidance and Compensation Measures. Prior to construction, a qualified biologist retained by the City shall conduct protocol-level surveys for the western spadefoot toad and northwestern pond turtle to determine if these species are currently using water features crossed by the selected alignment. If either of these species is detected, then the City shall consult with the DFG (and USFWS if appropriate) to develop additional minimization measures prior to project construction (if necessary). These additional measures may include timing restrictions for groundwater dewatering activities, construction monitoring, and long-term monitoring. If temporary fencing is used, it shall take the form of silt fencing and temporary plastic construction fencing placed no closer than 25 feet from the edge of the protected habitat. Protective fencing around vernal pools identified as potential habitat for special-status species shall be constructed in a way that allows western spadefoot toad to access these wetlands. Impacted western spadefoot toad habitat shall be mitigated and compensated in accordance with USFWS and DFG requirements.	Prior to and during construction of all Off-site Water Facilities	City of Folsom Utilities Department	1. U.S. Fish and Wildlife Service, California Department of Fish and Game. 2. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department. 3. For improvements within Sacramento County or City of Rancho Cordova: Sacramento County Planning and Community Development Department or City of Rancho Cordova Planning Department.	
3A.4 CLIMATE CHANGE – LAND				
Mitigation Measure 3A.4-1: Implement Additional Measures to Control Construction-Generated GHG Emissions. To further reduce construction-generated GHG emissions, the project applicant(s) any particular discretionary development application shall implement all feasible measures for reducing GHG emissions associated with construction that are recommended by SMAQMD at the time individual portions of the site undergo construction. Such measures may reduce GHG exhaust emissions from the use of on-site equipment, worker commute trips, and truck trips carrying materials and equipment to and from the SPA, as well as GHG emissions embodied in the materials selected for construction (e.g., concrete). Other measures may pertain to the materials used in construction. Prior to releasing each request for bid to contractors for the construction of each discretionary development entitlement, the project applicant(s) shall obtain the most current list of GHG reduction measures that are recommended by SMAQMD and stipulate that these measures be implemented in the respective request for bid as well as the subsequent construction contract with the selected primary contractor. The project applicant(s) for any particular discretionary development application may submit to the City and SMAQMD a report that substantiates why specific measures are considered infeasible for construction of that particular development phase and/or at that point in time. The report, including the substantiation for not implementing particular GHG reduction measures, shall be approved by the City, in consultation with SMAQMD prior to the release of a request for bid by the project applicant(s) for seeking a primary contractor to manage the construction of each development project. By requiring that the list of feasible measures be established prior to the selection of a primary contractor, this measure requires that the ability of a contractor to effectively implement the selected GHG reduction measures be inherent to the selection process. SMAQMD's recommended measures for reducing construction-related GHG emissions at the time of writing this EIR/EIS are listed below and the project applicant(s) shall, at a minimum, be required to implement the following: ▸ 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	Before approval of small-lot final maps and building permits for all discretionary development project, including all on- and off-site elements and implementation throughout project construction.	Project applicant(s) during all discretionary development project phases and on-site and off-site elements.	1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department. 2. For all on- and off-site project-related activities within the City of Folsom and Sacramento County. 3. For the two roadway extensions into El Dorado Hills: El Dorado County Development Services Department.	

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Mitigation Measure	Timing	Implementation	Enforcement	Dated Signature for Verification of Compliance
• 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 an ARB-approved low-carbon fuel, such as biodiesel or renewable diesel for construction equipment. (Emissions of oxides of nitrogen [NO_X] emissions from the use of low carbon fuel must be reviewed and increases mitigated.) Additional information about low-carbon fuels is available from ARB's Low Carbon Fuel Standard Program (ARB 2009b). ▸ Encourage and provide carpools, shuttle vans, transit passes and/or secure bicycle parking for construction worker commutes. ▸ Reduce electricity use in the construction office by using compact fluorescent bulbs, powering off computers every day, and replacing heating and cooling units with more efficient ones. ▸ Recycle or salvage non-hazardous construction and demolition debris (goal of at least 75% by weight). ▸ Use locally sourced or recycled materials for construction materials (goal of at least 20% 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 plan in consultation with SMAQMD to efficiently use water for adequate dust control. This may consist of the use of non-potable water from a local source. In addition to SMAQMD-recommended measures, construction activity shall comply with all applicable rules and regulations established by SMAQMD and ARB.				
Mitigation Measure 3A.4-2a: Implement Additional Measures to Reduce Operational GHG Emissions. Each increment of new development within the project site requiring a discretionary approval (e.g., proposed tentative subdivision map, conditional use permit), shall be subject to a project-specific environmental review (which could support an applicable exemption, negative or mitigated negative declaration or project-specific EIR) and will require that GHG emissions from operation of each phase of development, including supporting roadway and infrastructure improvements that are part of the selected action alternative, will be reduced by an amount sufficient to achieve the 2020-based threshold of significance of 4.36 CO_2e/SP/year for development that would become operational on or before the year 2020, and the 2030-based threshold of significance of 2.86 CO2e/SP/year for development that would become operational on or before the year 2030. The above-stated thresholds of significance may be subject to change if SMAQMD approves its own GHG significance thresholds, in which case, SMAQMD-adopted thresholds will be used. The amount of GHG reduction required to achieve the applicable significance thresholds will furthermore depend on existing and future regulatory measures including those developed under AB 32). For each increment of new discretionary development, the City shall submit to the project applicant(s) a list of potentially feasible GHG reduction measures to be considered in the development design. The City's list of potentially feasible GHG reduction measures shall reflect the current state of the regulatory environment, available incentives, and thresholds of significance that may be developed by SMAQMD, which will evolve under the mandate of AB 32 and Executive Order S-3-05. If the project applicant(s) asserts it cannot meet the 2020-based goal, then the report shall also demonstrate why measures not selected are considered infeasible. The City shall review and ensure inclusion of the design features in the proposed project before applicant(s) can receive the City's discretionary approval for the any increment of development. In determining what measures should appropriately be imposed by the City under the circumstances, the City shall consider the following factors: ▸ the extent to which rates of GHG emissions generated by motor vehicles traveling to, from, and within the SPA are projected to decrease over time as a result of regulations, policies, and/or plans that have already been adopted or may be adopted in the future by ARB or other public agency pursuant to AB 32, or by EPA; ▸ the extent to which mobile-source GHG emissions, which at the time of writing this EIR/EIS comprise a substantial portion of the state's GHG inventory, can also be reduced through design measures that result in trip reductions and reductions in trip length; ▸ the extent to which GHG emissions emitted by the mix of power generation operated by SMUD, the electrical utility that will serve the SPA, are projected to decrease pursuant to the Renewables Portfolio Standard required by SB 1078 and SB 107, as well as any future regulations, policies, and/or plans adopted by the federal and state governments that reduce GHG emissions from power generation;	Before approval of final maps and building permits for all project phases, including all on- and off-site elements.	The project applicant(s) for any particular discretionary development.	City of Folsom Community Development Department.	

Table 1
Mitigation Monitoring and Reporting Plan for the Folsom South of U.S. Highway 50 Specific Plan Project

Mitigation Measure	Timing	Implementation	Enforcement	Dated Signature for Verification of Compliance
▸ the extent to which any stationary sources of GHG emissions that would be operated on a proposed land use (e.g., industrial) are already subject to regulations, policies, and/or plans that reduce GHG emissions, particularly any future regulations that will be developed as part of ARB's implementation of AB 32, or other pertinent regulations on stationary sources that have the indirect effect of reducing GHG emissions; ▸ the extent to which other mitigation measures imposed on the project to reduce other air pollutant emissions may also reduce GHG emissions; ▸ the extent to which the feasibility of existing GHG reduction technologies may change in the future, and to which innovation in GHG reduction technologies will continue, effecting cost-benefit analyses that determine economic feasibility; and ▸ whether the total costs of proposed mitigation for GHG emissions, together with other mitigation measures required for the proposed development, are so great that a reasonably prudent property owner would not proceed with the project in the face of such costs. In considering how much, and what kind of, mitigation is necessary in light of these factors, the City shall consider the following list of options, though the list is not intended to be exhaustive, as GHG emission reduction strategies and their respective feasibility are likely to evolve over time. These measures are derived from multiple sources including the Mitigation Measure Summary in Appendix B of the California Air Pollution Control Officer's Association (CAPCOA) white paper, CEQA & Climate Change (CAPCOA 2009a); CAPCOA's Model Policies for Greenhouse Gases in General Plans (CAPCOA 2009b); and the California Attorney General's Office publication, The California Environmental Quality Act: Addressing Global Warming Impacts at the Local Agency Level (California Attorney General's Office 2008). **Energy Efficiency** ▸ Include clean alternative energy features to promote energy self-sufficiency (e.g., photovoltaic cells, solar thermal electricity systems, small wind turbines). ▸ Design buildings to meet CEC Tier II requirements (e.g., exceeding the requirements of the Title 24 [as of 2007] by 35%). ▸ Site buildings to take advantage of shade and prevailing winds and design landscaping and sun screens to reduce energy use. ▸ Install efficient lighting in all buildings (including residential). Also install lighting control systems, where practical. Use daylight as an integral part of lighting systems in all buildings. ▸ Install light-colored "cool" pavements, and strategically located shade trees along all bicycle and pedestrian routes. **Water Conservation and Efficiency** ▸ With the exception of ornamental shade trees, use water-efficient landscapes with native, drought-resistant species in all public area and commercial landscaping. Use water-efficient turf in parks and other turf-dependant spaces. ▸ Install the infrastructure to use reclaimed water for landscape irrigation and/or washing cars. ▸ Install water-efficient irrigation systems and devices, such as soil moisture-based irrigation controls. ▸ Design buildings and lots to be water-efficient. Only install water-efficient fixtures and appliances. ▸ Restrict watering methods (e.g., prohibit systems that apply water to nonvegetated surfaces) and control runoff. Prohibit businesses from using pressure washers for cleaning driveways, parking lots, sidewalks, and street surfaces. These restrictions should be included in the Covenants, Conditions, and Restrictions of the community. ▸ Provide education about water conservation and available programs and incentives. ▸ To reduce stormwater runoff, which typically bogs down wastewater treatment systems and increases their energy consumption, construct driveways to single-family detached residences and parking lots and driveways of multifamily residential uses with pervious surfaces. Possible designs include Hollywood drives (two concrete strips with vegetation or aggregate in between) and/or the use of porous concrete, porous asphalt, turf blocks, or pervious pavers. **Solid Waste Measures** ▸ Reuse and recycle construction and demolition waste (including, but not limited to, soil, vegetation, concrete, lumber, metal, and cardboard). ▸ Provide interior and exterior storage areas for recyclables and green waste at all buildings. ▸ Provide adequate recycling containers in public areas, including parks, school grounds, golf courses, and pedestrian zones in areas of mixed-use development.				

Table 1 Mitigation Monitoring and Reporting Plan for the Folsom South of U.S. Highway 50 Specific Plan Project				
Mitigation Measure	Timing	Implementation	Enforcement	Dated Signature for Verification of Compliance
▸ Provide education and publicity about reducing waste and available recycling services. **Transportation and Motor Vehicles** ▸ Promote ride-sharing programs and employment centers (e.g., by designating a certain percentage of parking spaces for ride-sharing vehicles, designating adequate passenger loading and unloading zones and waiting areas for ride-share vehicles, and providing a Web site or message board for coordinating ride-sharing). ▸ Provide the necessary facilities and infrastructure in all land use types to encourage the use of low- or zero-emission vehicles (e.g., electric vehicle charging facilities and conveniently located alternative fueling stations). ▸ At industrial and commercial land uses, all forklifts, "yard trucks," or vehicles that are predominately used on-site at non-residential land uses shall be electric-powered or powered by biofuels (such as biodiesel [B100]) that are produced from waste products, or shall use other technologies that do not rely on direct fossil fuel consumption.				
Mitigation Measure 3A.4-2b: Participate in and Implement an Urban and Community Forestry Program and/or Off-Site Tree Program to Off-Set Loss of On-Site Trees. The trees on the project site contain sequestered carbon and would continue to provide future carbon sequestration during their growing life. For all harvestable trees that are subject to removal, the project applicant(s) for any particular discretionary development application shall participate in and provide necessary funding for urban and community forestry program (such as the UrbanWood program managed by the Urban Forest Ecosystems Institute [Urban Forest Ecosystems Institute 2009]) to ensure that wood with an equivalent carbon sequestration value to that of all harvestable removed trees is harvested for an end-use that would retain its carbon sequestration (e.g., furniture building, cabinet making). For all nonharvestable trees that are subject to removal, the project applicant(s) shall develop and fund an off-site tree program that includes a level of tree planting that, at a minimum, increases carbon sequestration by an amount equivalent to what would have been sequestered by the blue oak woodland during its lifetime. This program shall be funded by the project applicant(s) of each development phase and reviewed for comment by an independent Certified Arborist unaffiliated with the project applicant(s) and shall be coordinated with the requirements of Mitigation Measure 3.3-5, as stated in Section 3A.3, "Biological Resources - Land." Final approval of the program shall be provided by the City. Components of the program may include, but not be limited to, providing urban tree canopy in the City of Folsom, or reforestation in suitable areas outside the City. Reforestation in natural habitat areas outside the City of Folsom would simultaneously mitigate the loss of oak woodland habitat while planting trees within the urban forest canopy would not. The California Urban Forestry Greenhouse Gas Reporting Protocol shall be used to assess this mitigation program (CCAR 2008). All unused vegetation and tree material shall be mulched for use in landscaping on the project site, shipped to the nearest composting facility, or shipped to a landfill that is equipped with a methane collection system, or combusted in a biomass power plant. Tree and vegetative material should not be burned on- or off-site unless used as fuel in a biomass power plant.	Before approval of final maps and/or building permits for all project phases requiring discretionary approval, including all on- and off-site elements.	The project applicant(s) for any particular discretionary development application.	The City of Folsom Community Development Department.	
3B.4 CLIMATE CHANGE – WATER				
Mitigation Measure 3B.4-1a: Implement GHG Reduction Measures during Construction. The bid specifications for construction of the Off-site Water Facilities shall require that bidders demonstrate how they will comply with each of the following measures during all construction and demolition activities: 1) Construction vehicles and equipment will be properly maintained at all times in accordance with manufacturer's specifications, including proper tuning and timing of engines. Equipment maintenance records and equipment design specification data sheets shall be kept on-site during construction and demolition activities and subject to inspection by the SMAQMD. 2) Operators will turn off all construction vehicles and equipment and all delivery vehicles when not in use, and not allow idling for more than 5 minutes or for such other more restrictive time as may be required in law or regulation. 3) On-site construction vehicles and equipment will use ARB-certified biodiesel fuel if available (a minimum of B20, or 20 percent of biodiesel) except for those with warranties that would be voided if B20 biodiesel fuel were used. Prior to issuance of grading or demolition permits, the contractor shall provide documentation to the City that verifies whether any equipment is exempt; that a biodiesel supply has been secured; and that the construction contractor is aware that the use of biodiesel is required. 4) A City-approved Solid Waste Diversion and Recycling Plan (or such other documentation to the satisfaction of the City) will be in place for the Off-site Water Facilities that demonstrates the diversion from landfills and recycling of all nonhazardous, salvageable and re-useable wood, metal, plastic and paper products during construction and demolition activities. The Plan or other documentation shall include the name of the waste hauler, their assumed destination for all waste and recycled materials, and the procedures that will be followed to ensure implementation of this measure.	Prior to the approval of grading plans and building permits for all off-site water facilities.	City of Folsom Utilities Department	1. For improvements that would be located within the City of Folsom: City of Folsom Neighborhood Services Department, City of Folsom Community Development Department and SMAQMD. 2. For improvements that would be located within unincorporated Sacramento County: Sacramento County Planning and Community Development Department and SMAQMD. 3. For improvements that would be located within the City of Rancho Cordova: City of Rancho Cordova	

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Mitigation Measure	Timing	Implementation	Enforcement	Dated Signature for Verification of Compliance
			Planning Department and SMAQMD.	
Mitigation Measure 3B.4-1b Prepare and Implement an Off-site Water Facilities Climate Action Plan. Prior to operation, the City shall have in place a Off-site Water Facilities Climate Action Plan and Greenhouse Reduction Strategy (Plan) that has been adopted by the City following an opportunity for review and recommendation by the SMAQMD. At a minimum, the Plan shall include: ▸ Designation of Person Responsible for Implementation. The Plan shall designate the name and contact information of the person(s) responsible for ensuring continuous and on-going implementation of the Plan. ▸ GHG Inventory and Reduction Target. The City shall prepare a complete GHG Inventory for the Offsite Water Facilities components within one year following occupancy and a GHG reduction target based on State guidance. ▸ Off-site Water Facilities Design Features. The Off-site Water Facilities shall include design features to reduce operational GHG emissions, as well as an estimate of the reduction in GHG emissions that is expected to result from each facility. Initial measures that may be considered include, but are not limited to: • design all conditioned occupancies with "cool roofs" using products certified by the Cool Roof Rating Council, and other exposed roof surfaces coated with “cool paints”; • design all conditioned occupancies to take advantage of shade through the planting of deciduous canopy-type trees and/or prevailing winds to reduce energy use; • make maximum use of EnergyStar-qualified energy efficient appliances, heating and cooling systems, office equipment and lighting products; • install a photovoltaic array (solar panels) or other source of renewable energy generation on-site, or otherwise acquire energy that has been generated by renewable sources to meet a portion of the electricity needs of the Offsite Water Facilities; and • in an effort to reduce GHG emissions from transportation sources, the bid specifications for the Offsite Water Facilities should require that bidders demonstrate that they have given preference to local sources of building materials or offer evidence to support why such local sources have not been used.	Prior to the approval of grading plans and building permits for all off-site water facilities.	City of Folsom Utilities Department	1. For improvements that would be located within the City of Folsom: City of Folsom Neighborhood Services Department, City of Folsom Community Development Department and SMAQMD. 2. For improvements that would be located within unincorporated Sacramento County: Sacramento County Planning and Community Development Department and SMAQMD. 3. For improvements that would be located within the City of Rancho Cordova: City of Rancho Cordova Planning Department and SMAQMD.	
3A.5 CULTURAL RESOURCES – LAND				
Mitigation Measure 3A.5-1a: Comply with the Programmatic Agreement. The PA for the proposed project is incorporated by reference. The PA provides a management framework for identifying historic properties, determining adverse effects, and resolving those adverse effects as required under Section 106 of the NHPA. This document is incorporated by reference. The PA is available for public inspection and review at the California Office of Historic Preservation 1725 23rd Street Sacramento, CA 95816.	The PA shall be prepared and executed (signed) prior to issuance of any Federal permit or authorization for any aspect or component of the specific plan project.	USACE (or designee) and the project applicant(s) of all project phases (as directed by USACE)	USACE and the project applicant(s) of all project phases (as directed by USACE), with oversight by the SHPO.	
Mitigation Measure 3A.5-1b: Perform an Inventory and Evaluation of Cultural Resources for the California Register of Historic Places, Minimize or Avoid Damage or Destruction, and Perform Treatment Where Damage or Destruction Cannot be Avoided. 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 PA also clearly reference the CRHR listing criteria and significance thresholds that apply under CEQA. Prior to ground-disturbing work for each individual development phase or off-site element, the applicable oversight agency (City of Folsom, El Dorado County, Sacramento County, or Caltrans), or the project applicant(s) of all project phases, with applicable agency oversight, shall perform the following actions: ▸ Retain the services of a qualified archaeologist to perform an inventory of cultural resources within each individual development phase or off-site element subject to approval under CEQA. Identified resources shall be evaluated for listing on the CRHR. The inventory report shall also identify locations that are sensitive for undiscovered cultural resources based upon the location of known resources, geomorphology, and topography. The inventory report shall specify the location of monitoring of ground-disturbing work in these areas by a qualified archaeologist, and monitoring in the vicinity of identified resources that may be damaged by construction, 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 PA to minimize the potential for conflicting requirements.	Before issuance of building permits and ground-disturbing activities.	The applicable oversight agency and the project applicant(s) (at the agency’s direction) of all project phases.	1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department. 2. For the two roadway connections in El Dorado Hills: El Dorado County Development Services Department. 3. For the detention basin west of Prairie City Road: Sacramento County Planning and Community	

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▸ For each resource that is determined eligible for the CRHR, the applicable agency or the project applicant(s) for any particular discretionary development (under the agency's direction) shall obtain the services of a qualified archaeologist who shall determine if implementation of the individual project development would result in damage or destruction of "significant" (under CEQA) cultural resources. These findings shall be reviewed by the applicable agency for consistency with the significance thresholds and treatment measures provided in this EIR/EIS. ▸ Where possible, the project shall be configured or redesigned to avoid impacts on eligible or listed resources. Alternatively, these resources may be preserved in place if possible, as suggested under California Public Resources Code Section 21083.2. Avoidance of historic properties is required under certain circumstances under the Public Resource Code and 36 CFR Part 800. ▸ Where impacts cannot be avoided, the applicable agency or the project applicant(s) of all project phases (under the applicable agency's direction) shall prepare and implement treatment measures that are determined to be necessary by a qualified archaeologist. These measures may consist of data recovery excavations for resources that are eligible for listing because of the data they contain (which may contribute to research). Alternatively, for historical architectural, engineered, or landscape features, treatment measures may consist of a preparation of interpretive, narrative, or photographic documentation. These measures shall be reviewed by the applicable oversight agency for consistency with the significance thresholds and standards provided in this EIR/EIS. ▸ To support the evaluation and treatment required under this mitigation measure, the archaeologist retained by either the applicable oversight agency or the project applicant(s) of all project phases shall prepare an appropriate prehistoric and historic context that identifies relevant prehistoric, ethnographic, and historic themes and research questions against which to determine the significance of identified resources and appropriate treatment. ▸ These steps and documents may be combined with the phasing of management and documents prepared pursuant to the PA to minimize the potential for inconsistency and duplicative management efforts. Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries must be coordinated by the project applicant(s) of each applicable project phase with the affected oversight agency(ies) (i.e., El Dorado and/or Sacramento Counties, or Caltrans).			Development Department. 4. For the U.S. 50 interchange improvements: Caltrans.	
Mitigation Measure 3A.5-2: Conduct Construction Personnel Education, Conduct On-Site Monitoring if Required, 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) of all project phases shall do the following: ▸ Before the start of ground-disturbing activities, the project applicant(s) of all project phases shall retain a qualified archaeologist to conduct training for construction workers as necessary based upon the sensitivity of the project APE, to educate them about the possibility of encountering buried cultural resources, and inform them of the proper procedures should cultural resources be encountered. ▸ As a result of the work conducted for Mitigation Measures 3A.5-1a and 3A.5-1b, if the archaeologist determines that any portion of the SPA or the off-site elements should be monitored for potential discovery of as-yet-unknown cultural resources, the project applicant(s) of all project phases shall implement such monitoring in the locations specified by the archaeologist. USACE should review and approve any recommendations by archaeologists with respect to monitoring. ▸ Should any cultural resources, such as structural features, unusual amounts of bone or shell, artifacts, or architectural remains be encountered during any construction activities, work shall be suspended in the vicinity of the find and the appropriate oversight agency(ies) (identified below) shall be notified immediately. The appropriate oversight agency(ies) shall retain a qualified archaeologist who shall conduct a field investigation of the specific site and shall assess 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 actions required in Mitigation Measures 3A.5-1a and 3A.5-1b shall be implemented. The oversight agency 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 before resuming construction activities at the archaeological site. Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries must be coordinated by the project applicant(s) of each applicable project phase with the affected oversight agency(ies) (i.e., El Dorado and/or Sacramento Counties, or Caltrans).	Before and during ground-disturbing activities.	Project applicant(s) of all project phases.	1. For actions taken to satisfy the requirements of Section 106: the SHPO and USACE. 2. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department. 3. For the two roadway connections off-site into El Dorado Hills: El Dorado County Development Services Department. 4. For the detention basin west of Prairie City Road: Sacramento County Planning and Community Development Department. 5. For the U.S. 50 interchange improvements: Caltrans.	
Mitigation Measure 3A.5-3: Suspend Ground-Disturbing Activities if Human Remains are Encountered and Comply with California Health and Safety Code Procedures. In accordance with the California Health and Safety Code, if human remains are uncovered during ground-disturbing activities, including those associated with off-site elements, the project applicant(s) of all project phases shall immediately halt all ground-disturbing activities in the area of the find and notify the applicable county coroner and a professional archaeologist skilled in osteological analysis to determine the nature of the remains. The coroner is required to examine all discoveries of human remains within 48	Upon the discovery of suspected human remains.	Project applicant(s) of all project phases.	1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development	

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hours of receiving notice of a discovery on private or public lands (California Health and Safety Code Section 7050.5[b]). If the coroner determines that the remains are those of a Native American, he or she must contact the NAHC by phone within 24 hours of making that determination (California Health and Safety Code Section 7050[c]). After the coroner's findings are complete, the project applicant(s), an archaeologist, and the NAHC-designated MLD shall determine the ultimate treatment and disposition of the remains and take appropriate steps to ensure that additional human interments are not disturbed. The responsibilities for acting on notification of a discovery of Native American human remains are identified in Section 5097.9 of the California Public Resources Code. Upon the discovery of Native American remains, the procedures above regarding involvement of the applicable county coroner, notification of the NAHC, and identification of an MLD shall be followed. The project applicant(s) of all project phases shall ensure that the immediate vicinity (according to generally accepted cultural or archaeological standards and practices) is not damaged or disturbed by further development activity until consultation with the MLD has taken place. The MLD shall have at least 48 hours after being granted access to the site to inspect the site and make recommendations. A range of possible treatments for the remains may be discussed: nondestructive removal and analysis, preservation in place, relinquishment of the remains and associated items to the descendants, or other culturally appropriate treatment. As suggested by Assembly Bill (AB) 2641 (Chapter 863, Statutes of 2006), the concerned parties may extend discussions beyond the initial 48 hours to allow for the discovery of additional remains. AB 2641(e) includes a list of site protection measures and states that the project applicant(s) shall comply with one or more of the following requirements: ▸ record the site with the NAHC or the appropriate Information Center, ▸ use an open-space or conservation zoning designation or easement, or ▸ record a document with the county in which the property is located. The project applicant(s) or its authorized representative of all project phases shall rebury the Native American human remains and associated grave goods with appropriate dignity on the property in a location not subject to further subsurface disturbance if the NAHC is unable to identify an MLD or if the MLD fails to make a recommendation within 48 hours after being granted access to the site. The project applicant(s) or its authorized representative may also reinter the remains in a location not subject to further disturbance if it rejects the recommendation of the MLD and mediation by the NAHC fails to provide measures acceptable to the landowner. Ground disturbance in the zone of suspended activity shall not recommence without authorization from the archaeologist. Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries must be coordinated by the project applicant(s) of each applicable project phase with the affected oversight agency(ies) (i.e., El Dorado and/or Sacramento Counties, or Caltrans).			Department. 2. For the two roadway connections in El Dorado Hills: El Dorado County Development Services Department. 3. For the detention basin west of Prairie City Road: Sacramento County Planning and Community Development Department. 4. For the U.S. 50 interchange improvements: Caltrans.	
3A.7 GEOLOGY, SOILS, MINERALS, AND PALEONTOLOGICAL RESOURCES - LAND				
Mitigation Measure 3A.7-1a: Prepare Site-Specific Geotechnical Report per CBC Requirements and Implement Appropriate Recommendations. Before building permits are issued and construction activities begin any project development phase, the project applicant(s) of each project phase shall hire a licensed geotechnical engineer to prepare a final geotechnical subsurface investigation report for the on- and off-site facilities, which shall be submitted for review and approval to the appropriate City or county department (identified below). The final geotechnical engineering report 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. 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 designs that are consistent with the version of the CBC that is applicable at the time building and grading permits are applied for. All recommendations contained in the final geotechnical engineering report shall be implemented by the project applicant(s) of each project phase. Special recommendations contained in the geotechnical engineering report	Before issuance of building permits and ground-disturbing activities.	Project applicant(s) of all project phases.	1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department. 2. For the two off-site roadway connections from Folsom Heights into El Dorado Hills: El Dorado County Public Works Department. 3. For the off-site detention basin west of Prairie City Road: Sacramento County Planning and Community Development Department. 4. For the U.S. 50 interchange improvements: Caltrans.	

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shall be noted on the grading plans and implemented as appropriate before construction begins. Design and construction of all new project development 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.				
Mitigation Measure 3A.7-1b: Monitor Earthwork during Earthmoving Activities. All earthwork shall be monitored by a qualified geotechnical or soils engineer retained by the project applicant(s) of each project phase. The geotechnical or soils engineer shall provide oversight during all excavation, placement of fill, and disposal of materials removed from and deposited on both on- and off-site construction areas. Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries must be coordinated by the project applicant(s) of each applicable project phase with the affected oversight agency(ies) (i.e., El Dorado and/or Sacramento Counties, or Caltrans).	Before issuance of building permits and ground-disturbing activities.	Project applicant(s) of all project phases.	1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department. 2. For the two off-site roadway connections from Folsom Heights into El Dorado Hills: El Dorado County Public Works Department. 3. For the off-site detention basin west of Prairie City Road: Sacramento County Planning and Community Development Department. 4. For the U.S. 50 interchange improvements: Caltrans.	
Mitigation Measure 3A.7-3: Prepare and Implement the Appropriate Grading and Erosion Control Plan. Before grading permits are issued, the project applicant(s) of each project phase that would be located within the City of Folsom 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 before issuance of grading permits for all new development. 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 development for all project phases. For the two off-site roadways into El Dorado Hills, the project applicant(s) of that phase 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 El Dorado County Public Works Department and the El Dorado Hills Community Service District before issuance of grading permits for roadway construction in El Dorado Hills. The plan shall be consistent with El Dorado County's Grading, Erosion, and Sediment Control Ordinance and the state's NPDES permit, and shall include the site-specific grading associated with roadway development. For the off-site detention basin west of Prairie City Road, the project applicant(s) of that phase 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 Sacramento County Public Works Department before issuance of a grading permit. The plan shall be consistent with Sacramento County's Grading, Erosion, and Sediment Control Ordinance and the state's NPDES permit, and shall include the site-specific grading associated with construction of the detention basin. The plans referenced above shall 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 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 1 foot. The project applicant(s) shall ensure that the construction contractor is responsible for securing a source of transportation and deposition of excavated materials. Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries must be coordinated by the project applicant(s) of each applicable project phase with the affected oversight agency(ies) (i.e., El Dorado and/or Sacramento Counties). Implementation of Mitigation Measure 3A.9-1 (discussed in Section 3A.9, "Hydrology and Water Quality – Land") would also help reduce erosion-related impacts.	Before the start of construction activities.	Project applicant(s) of all project phases.	1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department. 2. For the two off-site roadway connections from Folsom Heights into El Dorado Hills: El Dorado County Public Works Department. 3. For the off-site detention basin west of Prairie City Road: Sacramento County Planning and Community Development Department.	

Table 1 Mitigation Monitoring and Reporting Plan for the Folsom South of U.S. Highway 50 Specific Plan Project				
Mitigation Measure	Timing	Implementation	Enforcement	Dated Signature for Verification of Compliance
Mitigation Measure 3A.7-4: Prepare a Seismic Refraction Survey and Obtain Appropriate Permits for all On-Site and Off-site Elements East of Old Placerville Road. Before the start of all construction activities east of Old Placerville Road, the project applicant(s) for any discretionary development application 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. Excavation may include the use of heavy-duty equipment such as large bulldozers or large excavators, and may include blasting. Appropriate permits for blasting operations shall be obtained from the relevant City or county jurisdiction prior to the start of any blasting activities. Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries must be coordinated by the project applicant(s) of each applicable project phase with the affected oversight agency(ies) (i.e., El Dorado and/or Sacramento Counties).	Before or during earthmoving activities.	Project applicant(s) of all project phases for on-site and off-site elements east of Old Placerville Road.	1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department. 2. For the two off-site roadway connections from Folsom Heights into El Dorado Hills: El Dorado County Public Works Department.	
Mitigation Measure 3A.7-5: Divert Seasonal Water Flows Away from Building Foundations. The project applicant(s) of all project phases shall either install subdrains (which typically consist of perforated pipe and gravel, surrounded by nonwoven geotextile fabric), or take such other actions as recommended by the geotechnical or civil engineer for the project that would serve to divert seasonal flows caused by surface infiltration, water seepage, and perched water during the winter months away from building foundations.	Before and during earthmoving activities.	Project applicant(s) of all project phases.	1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department. 2. For the two roadway connections in El Dorado Hills: El Dorado County Public Works Department.	
Mitigation Measure 3A.7-9: Conduct Soil Sampling in Areas of the SPA Designated as MRZ-3 for Kaolin Clay and if Found, Delineate its Location and Notify Lead Agency and the California Division of Mines and Geology. The project applicant(s) of all applicable project phases shall retain a licensed geotechnical or soils engineer to analyze soil core samples that shall be extracted from that portion of the SPA zoned MRZ-3 for kaolin clay, as shown on Exhibit 3A.7-3. In the event that kaolin clay is discovered, the City of Folsom, Sacramento County, and CDMG shall be notified. In addition, the approximate horizontal and vertical extent of available kaolin clay shall be delineated by the geotechnical or soils engineer.	Before issuance of building permits for development within the Ione Formation.	Project applicant(s) of all project phases in the Ione Formation.	City of Folsom Community Development Department, Sacramento County Planning and Community Development Department, California Division of Mines and Geology.	
Mitigation Measure 3A.7-10: Conduct Construction Personnel Education, Stop Work if Paleontological Resources are Discovered, Assess the Significance of the Find, and Prepare and Implement a Recovery Plan as Required. To minimize potential adverse impacts on previously unknown potentially unique, scientifically important paleontological resources, the project applicant(s) of all project phases where construction would occur in the Ione and Mehrten Formations shall do the following: ▸ Before the start of any earthmoving activities for any project phase in the Ione or Mehrten Formations, the project applicant(s) shall retain a qualified paleontologist or archaeologist 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. ▸ If paleontological resources are discovered during earthmoving activities, the construction crew shall immediately cease work in the vicinity of the find and notify the appropriate lead agency (identified below). 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. Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries must be coordinated by the project applicant(s) of each applicable project phase with the affected oversight agency(ies) (i.e., Sacramento County).	During earthmoving activities in the Ione and Mehrten Formations.	Project applicant(s) of all project phases within the Ione and Mehrten Formations.	1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department. 2. For the off-site detention basin west of Prairie City Road: Sacramento County Planning and Community Development Department.	

Table 1
Mitigation Monitoring and Reporting Plan for the Folsom South of U.S. Highway 50 Specific Plan Project

Mitigation Measure	Timing	Implementation	Enforcement	Dated Signature for Verification of Compliance
Mitigation Measure 3B.7-1a: Prepare Geotechnical Report(s) for the Off-site Water Facilities and Implement Required Measures. Facility design for all Off-site Water Facility components shall comply with the site-specific design recommendations as provided by a licensed geotechnical or civil engineer to be retained by the City. The final geotechnical and/or civil engineering report 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. 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 designs that are consistent with the version of the CBC that is applicable at the time building and grading permits are applied for. All recommendations contained in the final geotechnical engineering report shall be implemented by the City.	Prior to completion of engineering plans for all Off-site Water Facilities.	City of Folsom Utilities Department	1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department. 2. For the off-site water facilities within Unincorporated Sacramento County or the City of Rancho Cordova: Sacramento County Planning and Community Development Department or City of Rancho Cordova Planning Department.	
Mitigation Measure 3B.7-1b: Incorporate Pipeline Failure Contingency Measures Into Final Pipeline Design. Isolation valves or similar devices shall be incorporated into all pipeline facilities to prevent substantial losses of surface water in the event of pipeline rupture, as recommended by a licensed geotechnical or civil engineer. The specifications of the isolation valves shall conform to the CBC and American Water Works Association standards.	Prior to completion of engineering plans for all Off-site Water Facilities.	City of Folsom Utilities Department	1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department. 2. For the off-site water facilities within Unincorporated Sacramento County or the City of Rancho Cordova: Sacramento County Planning and Community Development Department or City of Rancho Cordova Planning Department.	
Mitigation Measure 3B.7-4: Implement Corrosion Protection Measures. As determined appropriate by a licensed geotechnical or civil engineer, the City shall ensure that all underground metallic fittings, appurtenances, and piping include a cathodic protection system to protect these facilities from corrosion.	Prior to completion of engineering plans for all Off-site Water Facilities	Implementation: City of Folsom Utilities Department	1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department. 2. For the off-site water facilities within Unincorporated Sacramento County or the City of Rancho Cordova: Sacramento County Planning and Community	

Table 1 Mitigation Monitoring and Reporting Plan for the Folsom South of U.S. Highway 50 Specific Plan Project				
Mitigation Measure	Timing	Implementation	Enforcement	Dated Signature for Verification of Compliance
			Development Department or City of Rancho Cordova Planning Department.	
Mitigation Measure 3B.7-5: Conduct Construction Personnel Education, Stop Work if Paleontological Resources are Discovered, Assess the Significance of the Find, and Prepare and Implement a Recovery Plan as Required. To minimize potential adverse impacts on previously unknown potentially unique, scientifically important paleontological resources, the City shall implement appropriate measures during construction of the Offsite Water Facility improvements. These measures shall be required for construction activities at the following locations: (1) Grant Line Road, south of SR 16; (2) Florin road, east of Excelsior Road; (3) Gerber Road, east of Excelsior Road; (4) White Rock Road, east of Prairie City Road; and (5) Prairie City Road and shall include: ▸ Before the start of any earthmoving activities for any project phase in the Riverbank Formation, the project applicant(s) shall retain a qualified paleontologist or archaeologist 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. ▸ If paleontological resources are discovered during earthmoving activities, the construction crew shall immediately cease work in the vicinity of the find and notify Sacramento County Planning and Community Development Department. 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 County to be necessary and feasible shall be implemented before construction activities can resume at the site where the paleontological resources were discovered.	During earthmoving activities in the Roverbank, Ione, and Mehrten Formations as shown in Wagner et al, 1981.	City of Folsom Utilities Department	1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department. 2. For the off-site water facilities within Unincorporated Sacramento County or the City of Rancho Cordova: Sacramento County Planning and Community Development Department or City of Rancho Cordova Planning Department.	
3A.8 HAZARDS AND HAZARDOUS MATERIALS - LAND				
Mitigation Measure 3A.8-2: Complete Investigations Related to the Extent to Which Soil and/or Groundwater May Have Been Contaminated in Areas Not Covered by the Phase I and II Environmental Site Assessments and Implement Required Measures. The project applicant(s) for any discretionary development application shall conduct Phase I Environmental Site Assessments (where an Phase I has not been conducted), and if necessary, Phase II Environmental Site Assessments, and/or other appropriate testing for all areas of the SPA and include, as necessary, analysis of soil and/or groundwater samples for the potential contamination sites that have not yet been covered by previous investigations (as shown in Exhibit 3A.8-1) before construction activities begin in those areas. Recommendations in the Phase I and II Environmental Site Assessments to address any contamination that is found shall be implemented before initiating ground-disturbing activities in these areas. The project applicant(s) shall implement the following measures before ground-disturbing activities to reduce health hazards associated with potential exposure to hazardous substances: ▸ Prepare a plan that identifies any necessary remediation activities appropriate for proposed on- and off-site uses, including excavation and removal of on-site contaminated soils, redistribution of clean fill material in the SPA, and closure of any abandoned mine shafts. The plan shall include measures that ensure the safe transport, use, and disposal of contaminated soil and building debris removed from the site. In the event that contaminated groundwater is encountered during site excavation activities, the contractor shall report the contamination to the appropriate regulatory agencies, dewater the excavated area, and treat the contaminated groundwater to remove contaminants before discharge into the sanitary sewer system. The project applicant(s) shall be required to comply with the plan and applicable Federal, state, and local laws. The plan shall outline measures for specific handling and reporting procedures for hazardous materials and disposal of hazardous materials removed from the site at an appropriate off-site disposal facility. ▸ Notify the appropriate Federal, state, and local agencies if evidence of previously undiscovered soil or groundwater contamination (e.g., stained soil, odorous groundwater) is encountered during construction activities. Any contaminated areas shall be remediated in accordance with recommendations made by the Sacramento County Environmental Management Department, Central Valley RWQCB, DTSC, and/or other appropriate Federal, state, or local regulatory agencies. ▸ Obtain an assessment conducted by PG&E and SMUD pertaining to the contents of any existing pole-mounted transformers located in the SPA. The assessment shall determine whether existing on-site electrical transformers contain PCBs and whether there are any records of spills from such equipment. If equipment containing PCB is identified, the maintenance and/or disposal of the transformer shall be subject to the regulations of the Toxic Substances Control Act under the authority of the Sacramento County Environmental Health Department.	Project applicant(s) of all project phases for any discretionary development application.	Before and during earthmoving activities.	1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department. 2. For the off-site detention basin west of Prairie City Road: Sacramento County Environmental Management Department. 3. Other regulatory agencies, such as California Department of Toxic Substances Control, or Central Valley Regional Water Quality Control Board, as appropriate.	

Table 1
Mitigation Monitoring and Reporting Plan for the Folsom South of U.S. Highway 50 Specific Plan Project

Mitigation Measure	Timing	Implementation	Enforcement	Dated Signature for Verification of Compliance
Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries must be coordinated by the project applicant(s) of each applicable project phase with the affected oversight agency(ies) (i.e., Sacramento County).				
Mitigation Measure 3A.8-3a: Require the Project Applicant(s) to Cooperate with Aerojet and Regulatory Agencies to Preserve, Modify, or Close Existing Groundwater Monitoring Wells. The project applicant(s) for any particular discretionary development that would occur in or adjacent to the Area 40 boundary shall consult with Aerojet, EPA, DTSC, and/or the Central Valley RWQCB or any successor in interest to establish the preservation, modification, or closure of existing groundwater monitoring wells. If necessary, Aerojet, or any successor may purchase lots or obtain access agreements from the project applicant(s) to maintain access to monitoring wells and/or remediation systems. If groundwater wells are to be affected by proposed tentative maps, then the project applicant(s) or successors shall provide the City with evidence that the relocation, modification, or closure of the well(s) is approved by the appropriate agencies as part of the City's final map approval process and before development. The project applicant(s) for activities related to the off-site detention basin located outside of the City of Folsom's jurisdictional boundaries must be coordinated by the project applicant(s) with Sacramento County.	Ongoing to the satisfaction of EPA DTSC and/or the Central Valley RWQCB.	Project applicants(s) for activities that would occur in the Area 40 boundary or on areas used for groundwater monitoring and other remediation activities.	1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department. 2. For the off-site detention basin west of Prairie City Road: Sacramento County Planning and Community Development Department.	
Mitigation Measure 3A.8-3b: Coordinate Development Activities to Avoid Interference with Remediation Activities. The project applicant(s) for any particular discretionary development that would occur in or adjacent to the Area 40 boundary shall provide notice to Aerojet or any successor in interest and DTSC, the Central Valley RWQCB, and the City of Folsom of the location, nature, and duration of construction activities least 30 days before construction activities begin in areas on or near property with current or planned remediation activities (Area 40). Remedial actions, as required by DTSC, RWQCB, and/or the EPA, may include, but are not limited to: ▸ deed restrictions on land and groundwater use; ▸ requirements for building ventilation, heating, and air conditioning design; ▸ monitoring; ▸ installation of vertical barriers; ▸ biological, chemical, and/or physical treatment; ▸ extraction or excavation; and/or ▸ pump and treat activities. Before the approval of grading plans which include areas within the Area 40 boundary or the off-site detention basin, the project applicant(s) shall consult with Aerojet, EPA, DTSC, and/or the Central Valley RWQCB or any successor to schedule the timing of construction activities to prevent potential conflicts with investigation and remediation activities. The project applicant(s) for activities related to the off-site detention basin located outside of the City of Folsom's jurisdictional boundaries must be coordinated by the project applicant(s) with Sacramento County.	Before the approval of grading plans and during construction activities within the Area 40 boundary, off-site detention basin, or on lands used for monitoring or other remediation-related activities.	Project applicant(s) for activities within the Area 40 boundary or on lands used for monitoring or other remediation-related activities.	1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department. 2. For the off-site detention basin west of Prairie City Road: Sacramento County Planning and Community Development Department. 3. U.S. Environmental Protection Agency, California Department of Toxic Substances Control, and/or Central Valley Regional Water Quality Control Board, Aerojet General Corporation, as appropriate.	
Mitigation Measure 3A.8-3c: Provide Written Notification to the City that, as required by EPA, DTSC, and the Central Valley RWQCB, -Required Notification Obligations and/or Easements Have Been Fulfilled to Ensure that Construction Activities Do Not Interfere with Remedial Actions. Pursuant to their oversight over investigations of hazardous substances and determination of remedial action, EPA and/or DTSC establish, as appropriate, deed restrictions (e.g., restrictions on future groundwater uses or future land uses) or easements (e.g., continued access to groundwater wells and pipelines) on property with associated notice requirements. The project applicant(s) for all such affected project activities, located within the Area 40 boundary, the off-site detention basin, or lands subject to monitoring or other remediation activities shall provide notification in writing to the City (or Sacramento County for the off-site detention basin) that said required notification obligations have been fulfilled. Evidence of the method of notification required by EPA and/or DTSC shall be submitted to the City before approval of tentative maps or improvement plans. The project applicant(s) for such affected project activities shall coordinate with the City to include this provision as part of tentative map approval within the Area 40 boundary or lands subject to monitoring or other remediation activities. The project applicant(s) shall coordinate with Sacramento County for such affected project activities pertaining to the off-site detention basin. Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries must be coordinated by the project applicant(s) of each applicable project phase with the affected oversight agency(ies) (i.e., Sacramento County). Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries must be coordinated by the project applicant(s) of each applicable project phase with the affected oversight agency(ies) (i.e., Sacramento County).	Before approval of final maps and/or issuance of permits for sales trailers and model homes within the Area 40 boundary, the off-site detention basin, or lands subject to monitoring or other remediation activities.	Project applicant(s) for activities that would occur in the Area 40 boundary or on areas used for groundwater monitoring and other remediation activities.	1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department. 2. For the off-site detention basin west of Prairie City Road: Sacramento County Planning and Community Development Department.	

Table 1
Mitigation Monitoring and Reporting Plan for the Folsom South of U.S. Highway 50 Specific Plan Project

Mitigation Measure	Timing	Implementation	Enforcement	Dated Signature for Verification of Compliance
Mitigation Measure 3A.8-3d: Land Use Restrictions for Contaminated Soil and Groundwater within Area 40 as depicted on the Remedial Restrictions Area Exhibit 3A.8-9. Prior to approval of any tentative maps, improvement plans, or discretionary project approvals for locations within Area 40, as depicted in the Remedial Restrictions Area (Exhibit 3A.8-9), the project applicant(s) shall designate those areas that are subject to off-gassing hazards in excess of an indoor air standard, as open space or park use, as required by the City and Aerojet in consultation with the EPA. Areas designated for open space or park under this mitigation measure shall be determined by the City and by Aerojet in consultation with the EPA using risk calculations (completed in accordance with EPA's 1989 *Risk Assessment Guidance for Superfund* [EPA/540/1-89-002] and DTSC's 1992 *Supplemental Guidance for Human Health Multimedia Risk Assessments of Hazardous Waste Sites and Permitted Facilities* and 1994 *Preliminary Endangerment Assessment Guidance Manual*, or such guidance as may be in place at the time risk assessment is performed) for exposure to off-gassing from either soil or groundwater based on detected PCE and TCE concentrations. The project applicant(s) for such affected areas located within Area 40 as depicted on the Remedial Restrictions Area Exhibit 3A.8-9 shall implement this measure as part of tentative map applications or other discretionary project approvals when such applications are submitted to the City. If the portions of Area 40 that are designated for park and open space use are not available for use as park and open space as identified in the SPA concurrently with surrounding development that creates demand for park and open space use, the project applicant(s), and the owners of land within the SPA shall identify and the City may rezone equivalent acreage of suitable park and open space land within the SPA for development as interim or permanent park and open space to meet the then current demand.	Prior to approval of tentative maps within the Community Park West area.	Project applicant(s) in consultation with the City, Aerojet, and U.S. Environmental Protection Agency for activities that would occur in the Community Park West area.	For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department; U.S. Environmental Protection Agency.	
Mitigation Measure 3A.8-5: Prepare and Implement a Blasting Safety Plan in Consultation with a Qualified Blaster. To reduce the potential for accidental injury or death related to blasting, contractors whose work on the SPA will include blasting shall prepare and implement a blasting safety plan. This plan shall be created in coordination with a qualified blaster, as defined by the Construction Safety and Health Outreach Program, Subpart U, Section 1926.901, and distributed to all appropriate members of construction teams. The plan shall apply to project applicant(s) of all project phases in which blasting would be employed. The plan shall include, but is not limited to: ▸ storage locations that meet ATF standards contained in 27 CFR Part 55; ▸ safety requirements for workers (e.g., daily safety meetings, personal protective equipment); ▸ an accident management plan that considers misfires (i.e. explosive fails to detonate), unexpected ignition, and flyrock; and ▸ measures to protect surrounding property (e.g., netting, announcement of dates of expected blasting, barricades, and audible and visual warnings). Upon completion of a blasting safety plan, the project applicant(s) contractor shall secure any required permits from the City of Folsom Fire Department and the El Dorado County Sheriff's Department for blasting activities in Sacramento County and El Dorado County, respectively. Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries must be coordinated by the project applicant(s) of each applicable project phase with the affected oversight agency(ies) (i.e., El Dorado County).	At the submission of tentative map applications.	Project applicant(s) and contractor(s) of all project phases in which blasting would be employed.	1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Fire Department. 2. For the off-site roadway connections in El Dorado County: El Dorado County Sheriff's Department.	
Mitigation Measure P3A.8-6: Prudent Avoidance and Notification of EMF Exposure. Potential purchasers of residential properties near the transmission lines shall be made aware of the controversy surrounding EMF exposure. The California Department of Real Estate shall be requested to insert an appropriate notification into the applicant's final Subdivision Public Report application, which shall be provided to purchasers of properties within 100 feet from the 100-115kV power line , or within 150 feet from the 220-230 kV power line . The notification would include a discussion of the scientific studies and conclusions reached to date, acknowledge that the notification distance is not based on specific biological evidence, but rather, the distance where background levels may increase, and provide that, given some uncertainty in the data, this notification is merely provided to allow purchasers to make an informed decision.	At the submission of tentative map applications.	Project applicant(s) of all project phases for any particular discretionary development entitlement in the vicinity of high-tension transmission lines.	1. City of Folsom Community Development Department. 2. Folsom Cordova Unified School District.	
Mitigation Measure 3A.8-7: Prepare and Implement a Vector Control Plan in Consultation with the Sacramento-Yolo Mosquito and Vector Control District. To ensure that operation and design of the stormwater system, including multiple planned detention basins, is consistent with the recommendations of the Sacramento-Yolo Mosquito and Vector Control District regarding mosquito control, the project applicant(s) of all project phases shall prepare and implement a Vector Control Plan. This plan shall be prepared in coordination with the Sacramento-Yolo Mosquito and Vector Control District and shall be submitted to the City for approval before issuance of the grading permit for the detention basins under the City's jurisdiction. For the off-site detention basin, the plan shall be submitted to Sacramento County for approval before issuance of the grading permit for the off-site detention basin. The plan shall incorporate specific measures deemed sufficient by the City to minimize public health risks from mosquitoes, and as contained within the Sacramento-Yolo Mosquito and Vector Control District BMP Manual (Sacramento-Yolo Mosquito and Vector Control District 2008). The plan shall include, but is not limited to, the following components:	Before issuance of grading permits for the project water features.	Project applicant(s) of all project phases containing water features.	1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department. 2. For the off-site detention basin west of Prairie City Road: Sacramento-Yolo Mosquito and Vector	

Table 1 Mitigation Monitoring and Reporting Plan for the Folsom South of U.S. Highway 50 Specific Plan Project				
Mitigation Measure	Timing	Implementation	Enforcement	Dated Signature for Verification of Compliance
▸ Description of the project. ▸ Description of detention basins and all water features and facilities that would control on-site water levels. ▸ Goals of the plan. ▸ Description of the water management elements and features that would be implemented, including: • BMPs that would implemented on-site; • public education and awareness; • sanitary methods used (e.g., disposal of garbage); • mosquito control methods used (e.g., fluctuating water levels, biological agents, pesticides, larvacides, circulating water); and • stormwater management (consistent with Stormwater Management Plan). ▸ Long-term maintenance of the detention basins and all related facilities (e.g., specific ongoing enforceable conditions or maintenance by a homeowner's association). To reduce the potential for mosquitoes to reproduce in the detention basins, the project applicant(s) shall coordinate with the Sacramento-Yolo Mosquito and Vector Control District to identify and implement BMPs based on their potential effectiveness for SPA conditions. Potential BMPs could include, but are not limited to, the following: • build shoreline perimeters as steep and uniform as practicable to discourage dense plant growth; • perform routine maintenance to reduce emergent plant densities to facilitate the ability of mosquito predators (i.e., fish) to move throughout vegetated area; • design distribution piping and containment basins with adequate slopes to drain fully and prevent standing water. The design slope should take into consideration buildup of sediment between maintenance periods. Compaction during grading may also be needed to avoid slumping and settling; • coordinate cleaning of catch basins, drop inlets, or storm drains with mosquito treatment operations; • enforce the prompt removal of silt screens installed during construction when no longer needed to protect water quality; • if the sump, vault, or basin is sealed against mosquitoes, with the exception of the inlet and outlet, submerge the inlet and outlet completely to reduce the available surface area of water for mosquito egg–laying (female mosquitoes can fly through pipes); and • design structures with the appropriate pumping, piping, valves, or other necessary equipment to allow for easy dewatering of the unit if necessary (Sacramento Yolo Mosquito and Vector Control District 2008). The project applicant(s) of the project phase containing the off-site detention basin shall coordinate mitigation for the off-site with the affected oversight agency (i.e., Sacramento County).			Control District.	
3B.8 HAZARDS AND HAZARDOUS MATERIALS – WATER				
Mitigation Measure 3B.8-1a: Transport, Store, and Handle Construction-Related Hazardous Materials in Compliance with Relevant Regulations and Guidelines. The City shall ensure, through the enforcement of contractual obligations, that all contractors transport, store, and handle construction-related hazardous materials in a manner consistent with relevant regulations and guidelines, including those recommended and enforced by Caltrans, Central Valley RWQCB, local fire departments, and the County environmental health department. Recommendations shall include as appropriate transporting and storing materials in appropriate and approved containers, maintaining required clearances, and handling materials using applicable Federal, state and/or local regulatory agency protocols. In addition, all precautions required by the Central Valley RWQCB-issued NPDES construction activity stormwater permits shall be taken to ensure that no hazardous materials enter any nearby waterways. In the event of a spill, the City shall ensure, through the enforcement of contractual obligations, that all contractors immediately control the source of any leak and immediately contain any spill utilizing appropriate spill containment and countermeasures. If required by the local fire departments, the local environmental health department, or any other regulatory agency, contaminated media shall be collected and disposed of at an off-site facility approved to accept such media. The storage, handling, and use of the construction-related hazardous materials shall be in accordance with applicable Federal, state, and local laws. Construction-related hazardous materials and hazardous wastes (e.g., fuels and waste oils) shall be stored away from stream channels and steep banks to prevent these materials from entering surface waters in the event of an accidental release. These materials shall be kept at sufficient distance (at least 500 feet) from nearby residences or other sensitive land uses. This includes materials stored for expected use, materials in equipment and vehicles, and waste materials.		City of Folsom Utilities Department	1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department. 2. For the off-site water facilities constructed within Sacramento County or the City of Rancho Cordova: Sacramento County Environmental Management Department. 3. Other regulatory agencies, such as California Department of Toxic Substances Control, or Central Valley Regional Water Quality Control Board, as appropriate.	

Table 1 Mitigation Monitoring and Reporting Plan for the Folsom South of U.S. Highway 50 Specific Plan Project				
Mitigation Measure	Timing	Implementation	Enforcement	Dated Signature for Verification of Compliance
Mitigation Measure 3B.8-1b: Prepare and Implement a Hazardous Materials Management Plan. The City shall prepare a Hazardous Materials Management Plan (HMMP) for the proposed WTP. The HMMP shall provide for safe storage, containment, and disposal of chemicals and hazardous materials related to WTP operations, including waste materials. The plan shall include, but shall not be limited to, the following: ▸ a description of hazardous materials and hazardous wastes; ▸ a description of handling, transport, treatment, and disposal procedures, as relevant for each hazardous material or hazardous waste; ▸ preparedness, prevention, contingency, and emergency procedures, including emergency contact information; ▸ A description of personnel training including, but not limited to: (1) recognition of existing or potential hazards resulting from accidental spills or other releases; (2) implementation of evacuation, notification, and other emergency response procedures; (3) management, awareness, and handling of hazardous materials and hazardous wastes, as required by their level of responsibility; ▸ Instructions on keeping Materials Safety and Data Sheets (MSDS) on-site for each on-site, hazardous chemical; ▸ Identification of the locations of hazardous material storage areas, including temporary storage areas, which shall be equipped with secondary containment sufficient in size to contain the volume of the largest container or tank; and ▸ A description of equipment maintenance procedures. The HMMP shall be made a condition of contractual obligation and shall be available for review by construction inspectors and implementation compliance shall be monitored.	Prior to construction and operation of all Off-site Water Facilities	City of Folsom Utilities Department	1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department. 2. For the off-site water facilities constructed within Sacramento County or the City of Rancho Cordova: Sacramento County Environmental Management Department. 3. Other regulatory agencies, such as California Department of Toxic Substances Control, or Central Valley Regional Water Quality Control Board, as appropriate.	
Mitigation Measure 3B.8-5a: Conduct Phase 1 Environmental Site Assessment for Selected Alignment. Prior to construction, the City shall conduct a Phase 1 Environmental Site Assessment according to American Society for Testing and Materials (ASTM) protocol for the selected conveyance pipeline alignment, pump station, well, and WTP site. If any hazardous materials or waste sites are identified during the Phase 1 Environmental Site Assessment, the City shall implement Mitigation Measure 3.8-5b.	Prior to construction of all Off-site Water Facilities	City of Folsom Utilities Department	1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department. 2. For the off-site water facilities constructed within Sacramento County or the City of Rancho Cordova: Sacramento County Environmental Management Department. 3. Other regulatory agencies, such as California Department of Toxic Substances Control, or Central Valley Regional Water Quality Control Board, as appropriate.	
Mitigation Measure 3B.8-5b: Develop and Implement a Remediation Plan. If determined necessary to mitigate for potential hazards resulting from disturbance of existing contaminated areas, the extent of contamination from hazardous materials sites within or adjacent to the Off-site Water Facilities construction area shall be delineated during final design. Disturbance to contaminated areas during Off-site Water Facilities construction shall be avoided, or any work done within contaminated areas shall be undertaken in compliance with standards approved by the DTSC or Sacramento County Department of Environmental Health to ensure that hazardous materials will not be released as a result of the ground disturbance. Additionally, if unidentified contaminated soil or groundwater are encountered, or if suspected contamination is encountered during any construction activities, work shall be halted in the area of potential exposure, and the type and extent of contamination shall be identified. A qualified professional, in consultation with appropriate regulatory agencies, will then develop and implement a plan to remediate the contamination and properly dispose of the contaminated material.	Prior to construction of all Off-site Water Facilities	City of Folsom Utilities Department	1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department. 2. For the off-site water facilities constructed within Sacramento County or the City of Rancho Cordova:	

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Mitigation Monitoring and Reporting Plan for the Folsom South of U.S. Highway 50 Specific Plan Project

Mitigation Measure	Timing	Implementation	Enforcement	Dated Signature for Verification of Compliance
			Sacramento County Environmental Management Department. 3. Other regulatory agencies, such as California Department of Toxic Substances Control, or Central Valley Regional Water Quality Control Board, as appropriate.	
Mitigation Measure 3B.8-7a: Keep Construction Area Clear of Combustible Materials. The City shall ensure, through the enforcement of contractual obligations that during construction, staging areas, welding areas, or areas slated for development using spark-producing equipment shall be cleared of dried vegetation or other materials that could serve as fire fuel. The contractor shall keep these areas clear of combustible materials in order to maintain a firebreak. Any construction equipment that normally includes a spark arrester shall be equipped with an arrester in good working order. This includes, but is not limited to, vehicles, heavy equipment, and chainsaws.	Prior to construction and operation of all Off-site Water Facilities	City of Folsom Utilities Department	1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department. 2. For the off-site water facilities constructed within Sacramento County or the City of Rancho Cordova: Sacramento County Fire Department	
Mitigation Measure 3B.8-7b: Provide Accessible Fire Suppression Equipment. Work crews shall be required to carry or have sufficient fire suppression equipment to ensure that any fire resulting from construction activities is immediately extinguished. All off-road equipment using internal combustion engines shall be equipped with spark arrestors.	Prior to construction and operation of all Off-site Water Facilities	City of Folsom Utilities Department	1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department. 2. For the off-site water facilities constructed within Sacramento County or the City of Rancho Cordova: Sacramento County Fire Department.	
3A.9 HYDROLOGY AND WATER QUALITY - LAND				
Mitigation Measure 3A.9-1: Acquire Appropriate Regulatory Permits and Prepare and Implement SWPPP and BMPs. Prior to the issuance of grading permits, 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) shall obtain coverage under the SWRCB's NPDES stormwater permit for general construction activity (Order 2009-0009-DWQ), including preparation and submittal of a project-specific SWPPP at the time the NOI is filed. The project applicant(s) shall also prepare and submit any other necessary erosion and sediment control and engineering plans and specifications for pollution prevention and control to Sacramento County, City of Folsom, El Dorado County (for the off-site roadways into El Dorado Hills under the Proposed Project Alternative). The SWPPP and other appropriate plans shall identify and specify: ▸ the use of an effective combination of robust erosion and sediment control BMPs and construction techniques accepted by the local jurisdictions for use in the project area at the time of construction, that shall reduce the potential for runoff and the release, mobilization, and exposure of pollutants, including legacy sources of mercury from project-related construction sites. These may include but would not be limited to temporary erosion control and soil stabilization measures, sedimentation ponds, inlet protection, perforated riser pipes,	Submittal of the State Construction General Permit NOI and SWPPP (where applicable) and development and submittal of any other locally required plans and specifications before the issuance of grading permits for all on-site project phases and off-site elements	Project applicant(s) during all project phases and on-site and off-site elements.	1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department. 2. For the two roadway connections in El Dorado Hills: El Dorado County Department of Transportation. 3. For the detention basin west	

Table 1
Mitigation Monitoring and Reporting Plan for the Folsom South of U.S. Highway 50 Specific Plan Project

Mitigation Measure	Timing	Implementation	Enforcement	Dated Signature for Verification of Compliance
check dams, and silt fences ▸ the implementation of approved local plans, non-stormwater management controls, permanent post-construction BMPs, and inspection and maintenance responsibilities; ▸ the pollutants that are likely to be used during construction that could be present in stormwater drainage and nonstormwater discharges, including fuels, lubricants, and other types of materials used for equipment operation; ▸ spill prevention and contingency measures, including measures to prevent or clean up spills of hazardous waste and of hazardous materials used for equipment operation, and emergency procedures for responding to spills; ▸ personnel training requirements and procedures that shall be used to ensure that workers are aware of permit requirements and proper installation methods for BMPs specified in the SWPPP; and ▸ the appropriate personnel responsible for supervisory duties related to implementation of the SWPPP. Where applicable, BMPs identified in the SWPPP shall be in place throughout all site work and construction/demolition activities and shall be used in all subsequent site development activities. BMPs may include, but are not limited to, such measures as those listed below. ▸ Implementing temporary erosion and sediment control measures in disturbed areas to minimize discharge of sediment into nearby drainage conveyances, in compliance with state and local standards in effect at the time of construction. These measures may include silt fences, staked straw bales or wattles, sediment/silt basins and traps, geofabric, sandbag dikes, and temporary vegetation. ▸ Establishing permanent vegetative cover to reduce erosion in areas disturbed by construction by slowing runoff velocities, trapping sediment, and enhancing filtration and transpiration. ▸ Using drainage swales, ditches, and earth dikes to control erosion and runoff by conveying surface runoff down sloping land, intercepting and diverting runoff to a watercourse or channel, preventing sheet flow over sloped surfaces, preventing runoff accumulation at the base of a grade, and avoiding flood damage along roadways and facility infrastructure. A copy of the approved SWPPP shall be maintained and available at all times on the construction site. For those areas that would be disturbed as part of the U.S. 50 interchange improvements, Caltrans shall coordinate with the development and implementation of the overall project SWPPP, or develop and implement its own SWPPP specific to the interchange improvements, to ensure that water quality degradation would be avoided or minimized to the maximum extent practicable. Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries must be coordinated by the project applicant(s) of each applicable project phase with the affected oversight agency(ies) (i.e., El Dorado and/or Sacramento Counties, or Caltrans).	and implementation throughout project construction.		of Prairie City Road: Sacramento County Planning and Community Development Department. 4. For the U.S. 50 interchange improvements: Caltrans. 5. For all construction activities subject to the state's Construction General Permit and violators of local ordinances referred to the state for enforcement: Central Valley Regional Water Quality Control Board.	
Mitigation Measure 3A.9-2: Prepare and Submit Final Drainage Plans and Implement Requirements Contained in Those Plans. Before the approval of grading plans and building permits, the project applicant(s) of all project phases shall submit final drainage plans to the City, and to El Dorado County for the off-site roadway connections into El Dorado Hills, demonstrating that off-site upstream runoff would be appropriately conveyed through the SPA, and that project-related on-site runoff would be appropriately contained in detention basins or managed with through other improvements (e.g., source controls, biotechnical stream stabilization) to reduce flooding and hydromodification impacts. The plans shall include, but not be limited to, the following items: ▸ an accurate calculation of pre-project and post-project runoff scenarios, obtained using appropriate engineering methods, that accurately evaluates potential changes to runoff, including increased surface runoff; ▸ runoff calculations for the 10-year and 100-year (0.01 AEP) storm events (and other, smaller storm events as required) shall be performed and the trunk drainage pipeline sizes confirmed based on alignments and detention facility locations finalized in the design phase; ▸ a description of the proposed maintenance program for the on-site drainage system; ▸ project-specific standards for installing drainage systems; ▸ City and El Dorado County flood control design requirements and measures designed to comply with them; Implementation of stormwater management BMPs that avoid increases in the erosive force of flows beyond a specific range of conditions needed to limit hydromodification and maintain current stream geomorphology. These BMPs will be designed and constructed in accordance with the forthcoming SSQP Hydromodification Management Plan (to be adopted by the RWQCB) and may include, but are not limited to, the following:	Before approval of grading plans and building permits of all project phases.	Project applicant(s) during all on-site project phases and off-site elements.	1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Public Works Department. 2. For the two roadway connections in El Dorado Hills: El Dorado County Department of Transportation.	

Table 1 Mitigation Monitoring and Reporting Plan for the Folsom South of U.S. Highway 50 Specific Plan Project				
Mitigation Measure	Timing	Implementation	Enforcement	Dated Signature for Verification of Compliance
• use of Low Impact Development (LID) techniques to limit increases in stormwater runoff at the point of origination (these may include, but are not limited to: surface swales; replacement of conventional impervious surfaces with pervious surfaces [e.g., porous pavement]; impervious surfaces disconnection; and trees planted to intercept stormwater); • enlarged detention basins to minimize flow changes and changes to flow duration characteristics; • bioengineered stream stabilization to minimize bank erosion, utilizing vegetative and rock stabilization, and inset floodplain restoration features that provide for enhancement of riparian habitat and maintenance of natural hydrologic and channel to floodplain interactions; • minimize slope differences between any stormwater or detention facility outfall channel with the existing receiving channel gradient to reduce flow velocity; and • minimize to the extent possible detention basin, bridge embankment, and other encroachments into the channel and floodplain corridor, and utilize open bottom box culverts to allow sediment passage on smaller drainage courses. ▸ The final drainage plan shall demonstrate to the satisfaction of the City of Folsom Community Development and Public Works Departments and El Dorado County Department of Transportation that 100-year (0.01 AEP) flood flows would be appropriately channeled and contained, such that the risk to people or damage to structures within or down gradient of the SPA would not occur, and that hydromodification would not be increased from pre-development levels such that existing stream geomorphology would be changed (the range of conditions should be calculated for each receiving water if feasible, or a conservative estimate should be used, e.g., an Ep of 1 ±10% or other as approved by the Sacramento Stormwater Quality Partnership and/or City of Folsom Public Works Department). Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries must be coordinated by the project applicant(s) of each applicable project phase with El Dorado County.				
Mitigation Measure 3A.9-3: Develop and Implement a BMP and Water Quality Maintenance Plan. Before approval of the grading permits for any development project requiring a subdivision map, a detailed BMP and water quality maintenance plan shall be prepared by a qualified engineer retained by the project applicant(s) the development project. Drafts of the plan shall be submitted to the City of Folsom and El Dorado County for the off-site roadway connections into El Dorado Hills, for review and approval concurrently with development of tentative subdivision maps for all project phases. The plan shall finalize the water quality improvements and further detail the structural and nonstructural BMPs proposed for the project. The plan shall include the elements described below. ▸ A quantitative hydrologic and water quality analysis of proposed conditions incorporating the proposed drainage design features. ▸ Predevelopment and postdevelopment calculations demonstrating that the proposed water quality BMPs meet or exceed requirements established by the City of Folsom and including details regarding the size, geometry, and functional timing of storage and release pursuant to the '"Stormwater Quality Design Manual for Sacramento and South Placer Regions" ([SSQP 2007b] per NPDES Permit No. CAS082597 WDR Order No. R5-2008-0142, page 46) and El Dorado County's NPDES SWMP (County of El Dorado 2004). ▸ Source control programs to control water quality pollutants on the SPA, which may include but are limited to recycling, street sweeping, storm drain cleaning, household hazardous waste collection, waste minimization, prevention of spills and illegal dumping, and effective management of public trash collection areas. ▸ A pond management component for the proposed basins that shall include management and maintenance requirements for the design features and BMPs, and responsible parties for maintenance and funding. ▸ LID control measures shall be integrated into the BMP and water quality maintenance plan. These may include, but are not limited to: • surface swales; • replacement of conventional impervious surfaces with pervious surfaces (e.g., porous pavement); • impervious surfaces disconnection; and • trees planted to intercept stormwater. ▸ New stormwater facilities shall be placed along the natural drainage courses within the SPA to the extent practicable so as to mimic the natural drainage patterns. The reduction in runoff as a result of the LID configurations shall be quantified based on the runoff reduction credit system methodology described in "Stormwater Quality Design Manual for the Sacramento and South Placer Regions, Chapter 5 and Appendix D4" (SSQP 2007b) and proposed detention basins and other water quality BMPs shall be sized to handle these runoff volumes. For those areas that would be disturbed as part of the U.S. 50 interchange improvements, it is anticipated that Caltrans would coordinate with the development and implementation of the overall project SWPPP, or develop and implement its own SWPPP specific to the interchange	Prepare plans before the issuance of grading permits for all project phases and off-site elements and implementation throughout project construction.	Project applicant(s) during all on-site project phases and off-site elements.	1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department and Public Works Department. 2. For the two roadway connections in El Dorado Hills: El Dorado County Department of Transportation. 3. For the U.S. 50 interchange improvements: Caltrans.	

Table 1 Mitigation Monitoring and Reporting Plan for the Folsom South of U.S. Highway 50 Specific Plan Project				
Mitigation Measure	Timing	Implementation	Enforcement	Dated Signature for Verification of Compliance
improvements, to ensure that water quality degradation would be avoided or minimized to the maximum extent practicable. Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries must be coordinated by the project applicant(s) of each applicable project phase with El Dorado County and Caltrans.				
Mitigation Measure 3A.9-4: Inspect and Evaluate Existing Dams Within and Upstream of the Project Site and Make Improvements if Necessary. Prior to submittal to the City of tentative maps or improvement plans the project applicant(s) of all project phases shall perform conduct studies to determine the extent of inundation in the case of dam failure. If the studies determine potential exposure of people or structures to a significant risk of flooding as a result of the failure of a dam, the applicants(s) shall implement of any feasible recommendations provided in that study, potentially through drainage improvements, subject to the approval of the City of Folsom Public Works Department.	Prior to submittal to the City of tentative maps or improvement plans.	Project applicant(s) of all on-site project phases and off-site elements.	City of Folsom Public Works Department.	
3B.9 HYDROLOGY AND WATER QUALITY – WATER				
Mitigation Measure 3B.9-1a: Acquire Appropriate Regulatory Permits and Prepare and Implement SWPPP and BMPs. The City shall prepare a SWPPP specific to the selected Off-site Water Facility Alternative and secure coverage under SWRCB's NPDES stormwater permit for general construction activity (Order 2009-0009-DWQ). The SWPPP shall identify specific actions and BMPs relating to the prevention of stormwater pollution from project-related construction sources by identifying a practical sequence for site restoration, BMP implementation, contingency measures, responsible parties, and agency contacts. The SWPPP shall reflect localized surface hydrological conditions and shall be reviewed and approved by the City prior to commencement of work and shall be made conditions of the contract with the contractor selected to build the Off-site Water Facilities. The SWPPP shall incorporate control measures in the following categories: ▸ soil stabilization and erosion control practices (e.g., hydroseeding, erosion control blankets, mulching, etc.; ▸ dewatering and/or flow diversion practices, if required (see Mitigation Measure 3B.9-1b); ▸ sediment control practices (temporary sediment basins, fiber rolls, etc.); ▸ temporary and post-construction on- and off-site runoff controls; ▸ special considerations and BMPs for water crossings, wetlands, drainages, and vernal pools; ▸ monitoring protocols for discharge(s) and receiving waters, with emphasis placed on the following water quality objectives: dissolved oxygen, floating material, oil and grease, pH, and turbidity; ▸ waste management, handling, and disposal control practices; ▸ corrective action and spill contingency measures; ▸ agency and responsible party contact information, and ▸ training procedures that shall be used to ensure that workers are aware of permit requirements and proper installation methods for BMPs specified in the SWPPP. The SWPPP shall be prepared by a qualified SWPPP practitioner with BMPs selected to achieve maximum pollutant removal and represent the best available technology that is economically achievable. Emphasis for BMPs shall be placed on controlling discharges of oxygen-depleting substances, floating material, oil and grease, acidic or caustic substances or compounds, and turbidity. Performance and effectiveness of these BMPs shall be determined either by visual means where applicable (i.e., observation of above-normal sediment release), or by actual water sampling in cases where verification of contaminant reduction or elimination, (inadvertent petroleum release) as required to determine adequacy of the measure.	Development of the SWPPP prior to construction of all Off-site Water Facilities and implementation throughout construction.	City of Folsom Utilities Department	1. Central Valley Regional Water Quality Control Board. 2. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department. 3. For improvements within unincorporated Sacramento County or City of Rancho Cordova: Sacramento County Planning and Community Development Department or City of Rancho Cordova Planning Department.	
Mitigation Measure 3B.9-1b: Properly Dispose of Hydrostatic Test Water and Construction Dewatering in Accordance with the Central Valley Regional Water Quality Control Board. All hydrostatic test water and construction dewatering shall be discharged to an approved land disposal area or drainage facility in accordance with Central Valley RWCQB requirements. The City or its construction contractor shall provide the Central Valley RWQCB with the location, type of discharge, and methods of treatment and monitoring for all hydrostatic test water discharges. Emphasis shall be placed on those discharges that would occur directly to surface water bodies.	Incorporation measures into SWPPP prior to construction and implementation throughout construction, as appropriate.	City of Folsom Utilities Department	1. Central Valley Regional Water Quality Control Board. 2. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department.	

Table 1 Mitigation Monitoring and Reporting Plan for the Folsom South of U.S. Highway 50 Specific Plan Project				
Mitigation Measure	Timing	Implementation	Enforcement	Dated Signature for Verification of Compliance
			3. For improvements within unincorporated Sacramento County or City of Rancho Cordova: Sacramento County Planning and Community Development Department or City of Rancho Cordova Planning Department.	
Mitigation Measure 3B.9-3a: Prepare and Implement Drainage Plan(s) for Structural Facilities. The City shall prepare a Drainage Plan for the selected Off-site Water Facility WTP and shall incorporate measures to maintain off-site runoff during peak conditions to pre-construction discharge levels. The Drainage Plan shall provide both short- and long-term drainage solutions to ensure the proper sequencing of drainage facilities during and following construction. The City shall evaluate options for on-site detention including, but not limited to, providing temporary storage within a portion or portions of proposed paved areas, linear infiltration facilities along the site perimeter, and/or other on-site opportunities for detention, retention, and/or infiltration facilities. Design specifications for the detention, retention, and/or infiltration facilities shall provide sufficient storage capacity to accommodate the 10-year, 24-hour storm event. In addition, the Drainage Plan shall delineate the overland release path for flows generated by a 100-year frequency storm, so that structural pad elevations for buildings, containment facilities, storage tank, and container storage areas are placed a minimum of one foot above the property's highest frontage curb elevation. The Drainage Plan shall also provide sufficient attenuation of flows to ensure no net increase in off-site discharges to waterways that drain across the FSC via one or more drainage chutes (e.g., Buffalo Creek).	Development of the Drainage Plan prior to start of construction.	City of Folsom Utilities Department.	1. Central Valley Regional Water Quality Control Board. 2. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department. 3. For improvements within unincorporated Sacramento County or City of Rancho Cordova: Sacramento County Planning and Community Development Department or City of Rancho Cordova Planning Department. 4. For all off-site improvements that would drain across one or more of the FSC drainage chutes: U. S. Bureau of Reclamation.	
Mitigation Measure 3B.9-3b: Ensure the Provision of Sufficient Outlet Protection and On-site Containment. Energy dissipaters, vegetated rip-rap, soil protection, and/or other appropriate BMPs shall be included within all storm-drain outlets to slow runoff velocities and prevent erosion at discharge locations for the WTP. A long-term maintenance plan shall be implemented for all drainage discharge control devices. The WTP layout shall also include sufficient on-site containment and pollution-control devises for drainage facilities to avoid the off-site release of water quality pollutants, oil and grease.	Incorporation of measures into the Drainage Plan prior to start of construction.	City of Folsom Utilities Department	1. Central Valley Regional Water Quality Control Board. 2. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department. 3. For improvements within unincorporated Sacramento County or City of Rancho Cordova: Sacramento County Planning and Community Development Department or City of Rancho Cordova Planning Department.	

Table 1 Mitigation Monitoring and Reporting Plan for the Folsom South of U.S. Highway 50 Specific Plan Project				
Mitigation Measure	Timing	Implementation	Enforcement	Dated Signature for Verification of Compliance
3B.10 LAND USE AND AGRICULTURAL RESOURCES – WATER				
Mitigation Measure 3B.10-2: Acquire Development Approvals for Off-site WTPs. The City shall implement one of the two following options to enable development of the White Rock WTP under Off-site Water Facility Alternatives 1, 1A, 3, and 3A: (1) Annexation and Pre-Zoning to Public Use. The City shall file an application with Sacramento LAFCo to amend its sphere of influence to include the White Rock WTP . The application shall include a statement describing that the sphere of influence amendment is necessary to ensure the provision of adequate water supply, distribution, and treatment for planned development with the Folsom SPA. Subject to LAFCo approval of the sphere of influence amendment, the City shall prepare an application to annex and prezone the White Rock WTP site for Public Use. As part of the White Rock WTP site's design, spacing opportunities between the WTP facilities and adjacent land use shall be maximized to encourage open space continuity and disruption to adjacent agricultural areas. Prior the annexation approval, the City shall provide LAFCo with the following: (a) dedications of rights-of-way; (b) improvements for vehicle access; (c) the placement of structures and their associated height; and (d) landscaping/open space for the protection of adjoining and nearby properties. or (2) Obtain County Use Permit or General Plan Amendment. The City shall file an application with Sacramento County for a Use Permit to allow the operation of the proposed WTP within the AG-80 zone. The City shall comply with the conditions of the Use Permit, so that the WTP site is developed consistent with County requirements in terms of the following: (a) dedications of right-of-way; (b) improvements for vehicle access; (c) the placement of structures and their associated height; and (d) landscaping for the protection of adjoining and nearby properties. Alternatively, the City may file an application for a General Plan Amendment and Rezone to designate the White Rock WTP site for Public Use. In addition to complying with the requirements of the Public zone, the City shall develop the site consistent with the County's for the following: (a) dedications of right-of-way; (b) improvements for vehicle access; (c) the placement of structures and their associated height; and (d) landscaping for the protection of adjoining and nearby properties.	Prior to acquisition and development of the Off-site WTP	City of Folsom Utilities Department	1. For annexation and sphere of influence applications: Sacramento County LAFCo. 2. For the entitlement and General Plan applications through Sacramento County: Sacramento County Planning and Community Development Department.	
Mitigation Measure 3B.10-4: Restore Affected Agricultural Lands to Preproject Conditions. The City shall consult with all affected land owners where the selected alignment would cross Important Farmland. As part of the easement acquisition process, the City shall demonstrate a good-faith effort to negotiate with affected landowners an agreed-upon compensation for the loss of any existing pasture and/or row crops currently in production. During these consultations the City shall also, in conjunction with landowners' input, identify areas along the right-of-way that could be left in agricultural production as well as locations for access gates to allow for city staff access. Access gate locations shall be included in the final design plans for the Off-site Water Facilities. Compensation for the loss of crops and associated revenues shall be up to the provisions of law.	Immediately following construction	City of Folsom Utilities Department	Sacramento County Community Development and Planning Department	
3A.11 NOISE - LAND				
Mitigation Measure 3A.11-1: Implement Noise-Reducing Construction Practices, Prepare and Implement a Noise Control Plan, and Monitor and Record Construction Noise near Sensitive Receptors. To reduce impacts associated with noise generated during project-related construction activities, the project applicant(s) and their primary contractors for engineering design and construction of all project phases shall ensure that the following requirements are implemented at each work site in any year of project construction to avoid and minimize construction noise effects on sensitive receptors. The project applicant(s) and primary construction contractor(s) shall employ noise-reducing construction practices. Measures that shall be used to limit noise shall include the measures listed below: ▸ Noise-generating construction operations shall be limited to the hours between 7 a.m. and 7 p.m. Monday through Friday, and between 8 a.m. and 6 p.m. on Saturdays and Sundays. ▸ All construction equipment and equipment staging areas shall be located as far as possible from nearby noise-sensitive land uses. ▸ All construction equipment shall be properly maintained and equipped with noise-reduction intake and exhaust mufflers and engine shrouds, in accordance with manufacturers' recommendations. Equipment engine shrouds shall be closed during equipment operation. ▸ All motorized construction equipment shall be shut down when not in use to prevent idling. ▸ Individual operations and techniques shall be replaced with quieter procedures (e.g., using welding instead of riveting, mixing concrete off-site instead of on-site). ▸ Noise-reducing enclosures shall be used around stationary noise-generating equipment (e.g., compressors and generators) as planned phases are built out and future noise sensitive receptors are located within close proximity to future construction activities. ▸ Written notification of construction activities shall be provided to all noise-sensitive receptors located within 850 feet of construction activities. Notification shall include anticipated dates and hours during which construction activities are anticipated to occur and contact	Before and during construction activities on the SPA and within El Dorado Hills.	Project applicant(s) and primary contractor(s) of all project phases.	1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department. 2. For the two roadway connections off-site into El Dorado Hills: El Dorado County Development Services Department.	

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Mitigation Measure	Timing	Implementation	Enforcement	Dated Signature for Verification of Compliance
information, including a daytime telephone number, for the project representative to be contacted in the event that noise levels are deemed excessive. Recommendations to assist noise-sensitive land uses in reducing interior noise levels (e.g., closing windows and doors) shall also be included in the notification. ▸ To the extent feasible, acoustic barriers (e.g., lead curtains, sound barriers) shall be constructed to reduce construction-generated noise levels at affected noise-sensitive land uses. The barriers shall be designed to obstruct the line of sight between the noise-sensitive land use and on-site construction equipment. When installed properly, acoustic barriers can reduce construction noise levels by approximately 8–10 dB (EPA 1971). ▸ When future noise sensitive uses are within close proximity to prolonged construction noise, noise-attenuating buffers such as structures, truck trailers, or soil piles shall be located between noise sources and future residences to shield sensitive receptors from construction noise. ▸ The primary contractor shall prepare and implement a construction noise management plan. This plan shall identify specific measures to ensure compliance with the noise control measures specified above. The noise control plan shall be submitted to the City of Folsom before any noise-generating construction activity begins. Construction shall not commence until the construction noise management plan is approved by the City of Folsom. Mitigation for the two off-site roadway connections into El Dorado County must be coordinated by the project applicant(s) of the applicable project phase with El Dorado County, since the roadway extensions are outside of the City of Folsom's jurisdictional boundaries.				
Mitigation Measure 3A.11-3: Implement Measures to Prevent Exposure of Sensitive Receptors to Groundborne Noise or Vibration from Project Generated Construction Activities. ▸ To the extent feasible, blasting activities shall not be conducted within 275 feet of existing or future sensitive receptors. ▸ To the extent feasible, bulldozing activities shall not be conducted within 50 feet of existing or future sensitive receptors. ▸ All blasting shall be performed by a blast contractor and blasting personnel licensed to operate in the State of California. ▸ A blasting plan, including estimates of vibration levels at the residence closest to the blast, shall be submitted to the enforcement agency for review and approval prior to the commencement of the first blast. ▸ Each blast shall be monitored and documented for groundbourne noise and vibration levels at the nearest sensitive land use and associated recorded submitted to the enforcement agency.	Before and during bulldozing and blasting activities on the SPA and within El Dorado Hills and the County of Sacramento	Project applicant(s) and primary contractor(s) of all project phases.	1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department. 2. For the two roadway connections off-site into El Dorado Hills: El Dorado County Development Services Department. 3. For the off-site detention basin west of Prairie City Road: Sacramento County Planning and Community Development Department. 4. For the U.S. 50 interchange improvements: Caltrans.	
Mitigation Measure 3A.11-4: Implement Measures to Prevent Exposure of Sensitive Receptors to Increases in Noise from Project-Generated Operational Traffic on Off-site and On-Site Roadways. To meet applicable noise standards as set forth in the appropriate General Plan or Code (e.g., City of Folsom, County of Sacramento, and County of El Dorado) and to reduce increases in traffic-generated noise levels at noise-sensitive uses, the project applicant(s) of all project phases shall implement the following: ▸ Obtain the services of a consultant (such as a licensed engineer or licensed architect) to develop noise-attenuation measures for the proposed construction of on-site noise-sensitive land uses (i.e., residential dwellings and school classrooms) that will produce a minimum composite Sound Transmission Class (STC) rating for buildings of 30 or greater, individually computed for the walls and the floor/ceiling construction of buildings, for the proposed construction of on-site noise-sensitive land uses (i.e., residential dwellings and school classrooms). ▸ Prior to submittal of tentative subdivision maps and improvement plans, the project applicant(s) shall conduct a site-specific acoustical analysis to determine predicted roadway noise impacts attributable to the project, taking into account site-specific conditions (e.g., site design, location of structures, building characteristics). The acoustical analysis shall evaluate stationary- and mobile-source noise attributable to the proposed use or uses and impacts on nearby noise-sensitive land uses, in accordance with adopted City noise standards. Feasible measures shall be identified to reduce project-related noise impacts. These measures may include, but are not limited	During project construction activities at noise-sensitive receptors on the SPA; at the existing noise-sensitive receptors on Empire Ranch Road from Broadstone Parkway to Iron Point Road; and at the existing noise-sensitive receptors on Latrobe Road from White Rock Road to Golden Foothills Parkway	Project applicant(s) of all project phases.	1. For all noise-sensitive receptors that would be located within the City of Folsom: City of Folsom Community Development Department. 2. For all noise-sensitive receptors in El Dorado Hills: El Dorado County Development Services Department. 3. For all noise-sensitive receptors in the vicinity the off-site detention basin west of Prairie City Road:	

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Mitigation Measure	Timing	Implementation	Enforcement	Dated Signature for Verification of Compliance
to, the following: • limiting noise-generating operational activities associated with proposed commercial land uses, including truck deliveries; • constructing exterior sound walls; • constructing barrier walls and/or berms with vegetation; • using "quiet pavement" (e.g., rubberized asphalt) construction methods on local roadways; and, • using increased noise-attenuation measures in building construction (e.g., dual-pane, sound-rated windows; exterior wall insulation).			Sacramento County Planning and Community Development Department. 4. For all noise-sensitive receptors adjacent to the U.S. 50 interchange improvements: Caltrans.	
Mitigation Measure 3A.11-5: Implement Measures to Reduce Noise from Project-Generated Stationary Sources. The project applicant(s) for any particular discretionary development project shall implement the following measures to reduce the effect of noise levels generated by on-site stationary noise sources that would be located within 600 feet of any noise-sensitive receptor: ▸ Routine testing and preventive maintenance of emergency electrical generators shall be conducted during the less sensitive daytime hours (i.e., 7:00 a.m. to 6:00 p.m.). All electrical generators shall be equipped with noise control (e.g., muffler) devices in accordance with manufacturers' specifications. ▸ External mechanical equipment associated with buildings shall incorporate features designed to reduce noise emissions below the stationary noise source criteria. These features may include, but are not limited to, locating generators within equipment rooms or enclosures that incorporate noise-reduction features, such as acoustical louvers, and exhaust and intake silencers. Equipment enclosures shall be oriented so that major openings (i.e., intake louvers, exhaust) are directed away from nearby noise-sensitive receptors. ▸ Parking lots shall be located and designed so that noise emissions do not exceed the stationary noise source criteria established in this analysis (i.e., 50 dB for 30 minutes in every hour during the daytime [7 a.m. to 10 p.m.] and less than 45 dB for 30 minutes of every hour during the night time [10 p.m. to 7 a.m.]). Reduction of parking lot noise can be achieved by locating parking lots as far away as feasible from noise sensitive land uses, or using buildings and topographic features to provide acoustic shielding for noise-sensitive land uses. ▸ Loading docks shall be located and designed so that noise emissions do not exceed the stationary noise source criteria established in this analysis (i.e., 50 dB for 30 minutes in every hour during the daytime [7 a.m. to 10 p.m.] and less than 45 dB for 30 minutes of every hour during the night time [10 p.m. to 7 a.m.]). Reduction of loading dock noise can be achieved by locating loading docks as far away as possible from noise sensitive land uses, constructing noise barriers between loading docks and noise-sensitive land uses, or using buildings and topographic features to provide acoustic shielding for noise-sensitive land uses.	Before submittal of improvement plans for each project phase, and during project operations for testing of emergency generators.	Project applicant(s) of all project phases.	City of Folsom Community Development Department.	
3B.11 NOISE – WATER				
Mitigation Measure 3B.11-1a: Limit Construction Hours. Construction activities shall be limited to daylight hours between 7 a.m. and 7 p.m. Monday through Friday, and 9 a.m. and 5 p.m. on Saturday. No construction shall be allowed on Sundays or holidays.	During construction of all Off-site Water Facility components	City of Folsom Utilities Department	1. For structural improvements that would be located within the City of Folsom: City of Folsom Neighborhood Services Department and City of Folsom Community Development Department. 2. For structural improvements that would be located within unincorporated Sacramento County: Sacramento County Planning and Community Development Department. 3. For structural improvements that would be located within the City of Rancho Cordova: City of Rancho Cordova Planning Department.	

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Mitigation Measure	Timing	Implementation	Enforcement	Dated Signature for Verification of Compliance
Mitigation Measure 3B.11-1b: Minimize Noise from Construction Equipment and Staging. Construction equipment noise shall be minimized during project construction by muffling and shielding intakes and exhaust on construction equipment (per the manufacturer's specifications) and by shrouding or shielding impact tools, where used. The City's construction specifications shall also require that the contractor select staging areas as far as feasibly possible from sensitive receptors.	During construction of all Off-site Water Facility components	City of Folsom Utilities Department	1. For structural improvements that would be located within the City of Folsom: City of Folsom Neighborhood Services Department and City of Folsom Community Development Department. 2. For structural improvements that would be located within unincorporated Sacramento County: Sacramento County Planning and Community Development Department. 3. For structural improvements that would be located within the City of Rancho Cordova: City of Rancho Cordova Planning Department.	
Mitigation Measure 3B.11-1c: Maximize the Use of Noise Barriers. Construction contractors shall locate fixed construction equipment (such as compressors and generators) and construction staging areas as far as possible from nearby residences. If feasible, noise barriers shall be used at the construction site and staging area. Temporary walls, stockpiles of excavated materials, or moveable sound barrier curtains would be appropriate in instances where construction noise would exceed 90 dBA and occur within less than 50 feet from a sensitive receptor. The final selection of noise barriers will be subject to the City's approval and shall provide a minimum 10 dBA reduction in construction noise levels.	During construction of all Off-site Water Facility components	City of Folsom Utilities Department	1. For structural improvements that would be located within the City of Folsom: City of Folsom Neighborhood Services Department and City of Folsom Community Development Department. 2. For structural improvements that would be located within unincorporated Sacramento County: Sacramento County Planning and Community Development Department. 3. For structural improvements that would be located within the City of Rancho Cordova: City of Rancho Cordova Planning Department.	
Mitigation Measure 3B.11-1d: Prohibit Non-Essential Noise Sources During Construction. No amplified sources (e.g., stereo "boom boxes") shall be used in the vicinity of residences during project construction.	During construction of all Off-site Water Facility components	City of Folsom Utilities Department	1. For structural improvements that would be located within the City of Folsom: City of Folsom Neighborhood Services Department and City of Folsom Community Development Department. 2. For structural improvements that would be located within unincorporated Sacramento County: Sacramento County Planning and Community Development Department.	

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Mitigation Measure	Timing	Implementation	Enforcement	Dated Signature for Verification of Compliance
			3. For structural improvements that would be located within the City of Rancho Cordova: City of Rancho Cordova Planning Department.	
Mitigation Measure 3B.11-1e: Monitor Construction Noise and Provide a Mechanism for Filing Noise Complaints. An on-site complaint and enforcement manager shall track and respond to noise complaints. The City shall also provide a mechanism for residents, businesses, and agencies to register complaints with the City if construction noise levels are overly intrusive or construction occurs outside the required hours.	During construction of all Off-site Water Facility components	City of Folsom Utilities Department	1. For structural improvements that would be located within the City of Folsom: City of Folsom Neighborhood Services Department and City of Folsom Community Development Department. 2. For structural improvements that would be located within unincorporated Sacramento County: Sacramento County Planning and Community Development Department. 3. For structural improvements that would be located within the City of Rancho Cordova: City of Rancho Cordova Planning Department.	
Mitigation Measure 3B.11-3: Implement Operational Noise Minimization Measures. The following mitigation measures shall be implemented for the design of the WTP and the pump station(s) to ensure that operational noise levels at the property line do not exceed the City/County standards: ▸ Shielding and other specified measures as deemed appropriate and effective by the design engineer shall be incorporated into the design in order to comply with performance standards. ▸ Pumps located underground shall be shielded to not affect nearby sensitive receptors. ▸ Project equipment shall be outfitted and maintained with noise-reduction devices such as equipment closures, fan silencers, mufflers, acoustical louvers, noise barriers, and acoustical panels to minimize operational noise. ▸ Particularly noisy equipment shall be located as far away as feasibly possible from nearby sensitive receptors. ▸ The orientation of acoustical exits shall always be facing away from nearby sensitive receptors. ▸ Buildings and landscaping shall be incorporated, where possible, to absorb or redirect noise away from nearby sensitive receptors.	Approval of engineering plans for the On- or Off-site WTPs and Off-site booster pumping facilities prior to construction	City of Folsom Utilities Department	1. For structural improvements that would be located within the City of Folsom: City of Folsom Neighborhood Services Department and City of Folsom Community Development Department. 2. For structural improvements that would be located within unincorporated Sacramento County: Sacramento County Planning and Community Development Department. 3. For structural improvements that would be located within the City of Rancho Cordova: City of Rancho Cordova Planning Department.	

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Mitigation Measure	Timing	Implementation	Enforcement	Dated Signature for Verification of Compliance
3B.12 PARKS AND RECREATION - WATER				
Mitigation Measure 3B.12-1: Provide for Continued Recreational Access as Identified in Mitigation Measure 3.14-1a. As part of the Traffic Control Plan identified in Mitigation Measure 3.14-1a, the City shall ensure that trail access is maintained throughout the construction period through the use of detours. Proper signage shall be included in multiple locations, where necessary, to provide advance notice to hikers and equestrian riders of up-comings construction activities.	Prior to and during construction activities	City of Folsom Utilities Department	1. For structural improvements that would be located within unincorporated Sacramento County: Sacramento County Planning and Community Development Department. 2. For structural improvements that would be located within the City of Rancho Cordova: City of Rancho Cordova Planning Department.	
3A.14 PUBLIC SERVICES - LAND				
Mitigation Measure 3A.14-1: Prepare and Implement a Construction Traffic Control Plan. The project applicant(s) of all project phases 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 flagperson 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 appropriate City or County department or the California Department of Transportation (Caltrans) for review and approval before the approval of all project plans or permits, for all project phases where implementation may cause impacts on traffic. Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries must be coordinated by the project applicant(s) of each applicable project phase with the affected oversight agency(ies) (i.e., El Dorado and/or Sacramento Counties and Caltrans).	Before the approval of all relevant plans and/or permits and during construction of all project phases.	Project applicant(s) of all project phases.	1. For those roadways that would be annexed into the City of Folsom: City of Folsom Public Works Department. 2. For those roadways that would remain under the control of Sacramento County: Sacramento County Department of Transportation. 3. For the two off-site roadway connections into El Dorado Hills: El Dorado County Department of Transportation. 4. For U.S. 50 interchange improvements: Caltrans.	
Mitigation Measure 3A.14-2: Incorporate California Fire Code; City of Folsom Fire Code Requirements; and EDHFD Requirements, if Necessary, into Project Design and Submit Project Design to the City of Folsom Fire Department for Review and Approval. To reduce impacts related to the provision of new fire services, the project applicant(s) of all project phases shall do the following, as described below. 1. Incorporate into project designs fire flow requirements based on the California Fire Code, Folsom Fire Code (City of Folsom Municipal Code Title 8, Chapter 8.36), and other applicable requirements based on the City of Folsom Fire Department fire prevention standards. Improvement plans showing the incorporation automatic sprinkler systems, the availability of adequate fire flow, and the locations of hydrants shall be submitted to the City of Folsom Fire Department for review and approval. In addition, approved plans showing access design shall be provided to the City of Folsom Fire Department as described by Zoning Code Section 17.57.080 ("Vehicular Access Requirements"). These plans shall describe access-road length, dimensions, and finished surfaces for firefighting equipment. The installation of security gates across a fire apparatus access road shall be approved by the City of Folsom Fire Department. The design and operation of gates and barricades shall be in accordance with the Sacramento County Emergency Access Gates and Barriers Standard, as required by the City of Folsom Fire Code. 2. Submit a Fire Systems New Buildings, Additions, and Alterations Document Submittal List to the City of Folsom Community Development Department Building Division for review and approval before the issuance of building permits. In addition to the above measures, the project applicant(s) of all project phases shall incorporate the provisions described below for the	Before issuance of building permits and issuance of occupancy permits or final inspections for all project phases.	Project applicant(s) of all project phases.	City of Folsom Fire Department, and City of Folsom Community Development Department, and/or EDHFD for the portion of the SPA within the EDHFD service area.	

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Mitigation Measure	Timing	Implementation	Enforcement	Dated Signature for Verification of Compliance
portion of the SPA within the EDHFD service area, if it is determined through City/El Dorado County negotiations that EDHFD would serve the 178-acre portion of the SPA. 3. Incorporate into project designs applicable requirements based on the EDHFD fire prevention standards. For commercial development, improvement plans showing roadways, land splits, buildings, fire sprinkler systems, fire alarm systems, and other commercial building improvements shall be submitted to the EDHFD for review and approval. For residential development, improvement plans showing property lines and adjacent streets or roads; total acreage or square footage of the parcel; the footprint of all structures; driveway plan views describing width, length, turnouts, turnarounds, radiuses, and surfaces; and driveway profile views showing the percent grade from the access road to the structure and vertical clearance shall be submitted to the EDHFD for review and approval. 4. Submit a Fire Prevention Plan Checklist to the EDHFD for review and approval before the issuance of building permits. In addition, residential development requiring automation fire sprinklers shall submit sprinkler design sheet(s) and hydraulic calculations from a California State Licensed C-16 Contractor. The City shall not authorize the occupancy of any structures until the project applicant(s) have obtained a Certificate of Occupancy from the City of Folsom Community Development Department verifying that all fire prevention items have been addressed on-site to the satisfaction of the City of Folsom Fire Department and/or the EDHFD for the 178-acre area of the SPA within the EDHFD service area.				
Mitigation Measure 3A.14-3: Incorporate Fire Flow Requirements into Project Designs. The project applicant(s) of all project phases shall incorporate into their project designs fire flow requirements based on the California Fire Code, Folsom Fire Code, and/or EDHFD for those areas of the SPA within the EDHFD service area and shall verify to City of Folsom Fire Department that adequate water flow is available, prior to approval of improvement plans and issuance of occupancy permits or final inspections for all project phases.	Before issuance of building permits and issuance of occupancy permits or final inspections for all project phases.	Project applicant(s) of all project phases.	City of Folsom Fire Department, City of Folsom Community Development Department, and/or EDHFD for the 178-acre portion of the SPA within the EDHFD service area.	
3A.15 TRAFFIC AND TRANSPORTATION - LAND				
Project Participation in Funding Transportation Improvements a. Within and adjacent to the project boundaries, the Applicant shall construct all feasible physical improvements necessary and available to reduce the severity of the project's significant transportation-related impacts, which may be subject to fee credits and/or reimbursement, coordinated by the City, from other fee-paying development projects if available with respect to roads or other facilities that would also serve those non-project fee-paying development projects Funding of improvements on the perimeter of the project boundaries will be shared with other development/jurisdictions. b. Outside the project boundaries, the Applicant shall be responsible for the project's fair share of feasible physical improvements necessary and available to reduce the severity of the project's significant transportation-related impacts within the City of Folsom, in other jurisdictions and on State facilities, based on "cumulative plus project conditions." For purposes of this measure, "cumulative plus project conditions" refers to development authorized under the project as well as development consistent with approved general plans, specific plans, and other entitlements in the City and other jurisdictions. In cases where the project's fair share contribution is identified, the share will be based on the project's relative contribution to traffic growth under "cumulative plus project conditions." The project's contribution toward such improvements may take any, or some combination, of the following forms: 1. Construction of roads, road improvements, or other transportation facilities outside the boundaries of the project, subject in some instances to fee credit against other improvements necessitated by the project or future reimbursement, coordinated by the City, from other fee-paying development projects if available where the roads or improvements at issue would also serve those non-project fee paying development projects; 2. The payment of impact fees to the City of Folsom in amounts that constitute the project's fair share contributions to the construction of transportation facilities to be built or improved within the City, consistent with the City's Capital Improvement Program ("CIP"); 3. The payment of other adopted regional impact fees that would provide improvements to roadways, intersections and/or interchanges that are affected by multiple jurisdictions, except where the project applicant's payments of other fees or construction of improvements within the City of Folsom creates credit against the payment of regional impact fees; 4. The payment of impact fees to the City of Folsom in amounts that constitute the project's fair share contributions to the construction of transportation facilities and/or improvements within affected jurisdictions outside of Folsom, which payments to the City of Folsom and transmittal of fees to other agencies would occur through one or more enforceable agreements provided that for each required improvement, there is a reasonable mitigation plan that ensures that (i) the fees collected from the project will be used for				

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Mitigation Measure	Timing	Implementation	Enforcement	Dated Signature for Verification of Compliance
their intended purposes, and (ii) the improvements will actually be built within a reasonable period of time, and 5. The payment of impact fees to the City of Folsom in amounts that constitute the project's fair share contributions to the construction of transportation facilities and/or improvements on federal or state highways or freeways needed in part because of the project, to be made available to the California Department of Transportation ("Caltrans") if and when Caltrans and the City of Folsom enter into an enforceable agreement consistent with state law provided that, for each required improvement, Caltrans has a reasonable mitigation plan that ensures that (i) the fees collected from the project will be used for their intended purposes, and (ii) the improvements will actually be built within a reasonable period of time. c. In pursuing a single agreement or multiple agreements with any jurisdictions outside of the City of Folsom that will be affected by traffic from the project in order to effectuate proposed mitigation measures for improvements outside the City of Folsom, the City will seek to negotiate in good faith with these other jurisdictions to enter into fair and reasonable arrangements with the intention of achieving, within a reasonable time period after approval of the project's, commitments for (i) the provision of adequate "fair share" mitigation payments from the project for out-of-jurisdiction traffic impacts and impacts on federal and state freeways and highways, and (ii) reciprocal payments from regional development projects to the City of Folsom to address cumulative "fair share" mitigation payments towards federal and state freeways and highways for transportation-related facilities and/or improvements within the City of Folsom necessitated by the development within the region. It is intended that these agreements shall permit the participating agencies flexibility in providing cross-jurisdictional credits and reimbursements consistent with the general "fair share" mitigation standard, and require an updated model run incorporating the best available information in order to obtain the most accurate, up-to-date impact assessment feasible and to generate the most accurate, up-to-date estimates of regional fair share contributions. Best efforts should be made to secure funding from federal, state and regional sources. These agreements, moreover, should also include provisions that allow for periodic updates to the traffic modeling on which fair share payment calculations depend in order to account for (i) newly approved projects cumulatively contributing to transportation-related impacts and that therefore should contribute to the funding of necessary improvements (ii) additional physical improvements necessitated in whole or in part by newly approved projects, and (iii) changing cost calculations for the construction of needed improvements based on changes in the costs of materials, labor, and other inputs. d. If transportation improvements required to be constructed as mitigation are constructed prior to project implementation, the project will pay its fair share portion for those improvements. e. In considering individual projects within the project area (e.g., small-lot tentative subdivision maps or similar discretionary non-residential approvals), the City of Folsom shall identify required improvements, and shall base its calculations for such projects' fair share payments, based on the most recent traffic modeling (i.e., modeling that accounts for (i) newly approved projects cumulatively contributing to transportation-related impacts and that therefore should contribute to the funding of necessary improvements, (ii) additional physical improvements necessitated in whole or in part by newly approved projects, and (iii) changing cost calculations for the construction of needed improvements based on changes in the costs of materials, labor, and other inputs).				
Mitigation Measure 3A.15-1a: The Applicant Shall Pay a Fair Share to Fund the Construction of Improvements to the Folsom Boulevard/Blue Ravine Road Intersection (Intersection 1). To ensure that the Folsom Boulevard/Blue Ravine Road intersection operates at an acceptable LOS, the eastbound approach must be reconfigured to consist of two left-turn lanes, one through lane, and one right-turn lane. The applicant shall pay its proportionate share of funding of improvements, as may be determined by a nexus study or other appropriate and reliable mechanism paid for by applicant, to reduce the impacts to the Folsom Boulevard/Blue Ravine Road intersection (Intersection 1).	A phasing analysis shall be performed prior to approval of the first subdivision map to determine when the improvement should be implemented and when fair share funding should be paid.	City of Folsom Public Works Department.	City of Folsom Public Works Department	
Mitigation Measure 3A.15-1b: The Applicant Shall Pay a Fair Share to Fund the Construction of Improvements at the Sibley Street/ Blue Ravine Road Intersection (Intersection 2). To ensure that the Sibley Street/Blue Ravine Road intersection operates at an acceptable LOS, the northbound approach must be reconfigured to consist of two left-turn lanes, two through lanes, and one right-turn lane. The applicant shall pay its proportionate share of funding of improvements, as may be determined by a nexus study or other appropriate and reliable mechanism paid for by applicant, to reduce the impacts to the Sibley Street/Blue Ravine Road intersection (Intersection 2).	A phasing analysis shall be performed prior to approval of the first subdivision map to determine when the improvement should be implemented.	City of Folsom Public Works Department.	City of Folsom Public Works Department	

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Mitigation Measure 3A.15-1c: The Applicant Shall Fund and Construct Improvements to the Scott Road (West)/White Rock Road Intersection (Intersection 28). To ensure that the Scott Road (West)/White Rock Road intersection operates at an acceptable LOS, a traffic signal must be installed.	A phasing analysis shall be performed prior to approval of the first subdivision map to determine when the improvement should be implemented.	City of Folsom Public Works Department.	City of Folsom Public Works Department	
Mitigation Measure 3A.15-1e: Fund and Construct Improvements to the Hillside Drive/Easton Valley Parkway Intersection (Intersection 41). To ensure that the Hillside Drive/Easton Valley Parkway intersection operates at an acceptable LOS, the eastbound approach must be reconfigured to consist of one dedicated left turn lane and two through lanes, and the westbound approach must be reconfigured to consist of two through lanes and one dedicated right-turn lane. The applicant shall fund and construct these improvements.	A phasing analysis shall be performed prior to approval of the first subdivision map to determine when the improvement should be implemented.	City of Folsom Public Works Department.	City of Folsom Public Works Department	
Mitigation Measure 3A.15-1f: Fund and Construct Improvements to the Oak Avenue Parkway/Middle Road Intersection (Intersection 44). To ensure that the Oak Avenue Parkway/Middle Road intersection operates at an acceptable LOS, control all movements with a stop sign. The applicant shall fund and construct these improvements.	A phasing analysis shall be performed prior to approval of the first subdivision map to determine when the improvement should be implemented.	City of Folsom Public Works Department.	City of Folsom Public Works Department	
Mitigation Measure 3A.15-1h: Participate in Fair Share Funding of Improvements to Reduce Impacts to the Hazel Avenue/Folsom Boulevard Intersection (Sacramento County Intersection 2). To ensure that the Hazel Avenue/Folsom Boulevard intersection operates at an acceptable LOS, this intersection must be grade separated including "jug handle" ramps. No at grade improvement is feasible. Grade separating and extended (south) Hazel Avenue with improvements to the U.S. 50/Hazel Avenue interchange is a mitigation measure for the approved Easton-Glenbrough Specific Plan development project. The applicant shall pay its proportionate share of funding of improvements to the agency responsible for improvements, based on a program established by that agency to reduce the impacts to the Hazel Avenue/Folsom Boulevard intersection (Sacramento County Intersection 2).	A phasing analysis shall be performed prior to approval of the first subdivision map to determine when the improvement should be implemented.	Sacramento County Public Works Department and Caltrans.	Sacramento County Public Works Department and Caltrans	
Mitigation Measure 3A.15-1i: Participate in Fair Share Funding of Improvements to Reduce Impacts on the Grant Line Road/White Rock Road Intersection and to White Rock Road widening between the Rancho Cordova City limit to Prairie City Road (Sacramento County Intersection 3). Improvements must be made to ensure that the Grant Line Road/White Rock Road intersection operates at an acceptable LOS. The currently County proposed White Rock Road widening project will widen and realign White Rock Road from the Rancho Cordova City limit to the El Dorado County line (this analysis assumes that the Proposed Project and build alternatives will widen White Rock Road to five lanes from Prairie City road to the El Dorado County Line). This widening includes improvements to the Grant Line Road intersection and realigning White Rock Road to be the through movement. The improvements include two eastbound through lanes, one eastbound right turn lane, two northbound left turn lanes, two northbound right turn lanes, two westbound left turn lanes and two westbound through lanes. This improvement also includes the signalization of the White Rock Road and Grant Line Road intersection. With implementation of this improvement, the intersection would operate at an acceptable LOS A. The applicant shall pay its proportionate share of funding of improvements to the agency responsible for improvements, based on a program established by that agency to reduce the impacts to the Grant Line Road/White Rock Road intersection (Sacramento County Intersection 3).	Before project build out. Design of the White Rock Road widening to four lanes, from Grant Line Road to Prairie City Road, with intersection improvements has begun, and because this widening project is environmentally cleared and fully funded, it's construction is expected to be complete before the first phase of the Proposed Project or alternative is built.	Sacramento County Public Works Department.	Sacramento County Public Works Department	
Mitigation Measure 3A.15-1j: Participate in Fair Share Funding of Improvements to Reduce Impacts on Hazel Avenue between Madison Avenue and Curragh Downs Drive (Roadway Segment 10). To ensure that Hazel Avenue operates at an acceptable LOS between Curragh Downs Drive and Gold Country Boulevard, Hazel Avenue must be widened to six lanes. This improvement is part of the County adopted Hazel Avenue widening project.	Before project build out. Construction of phase two of the Hazel Avenue widening, from	Sacramento County Public Works Department.	Sacramento County Public Works Department	

Table 1 Mitigation Monitoring and Reporting Plan for the Folsom South of U.S. Highway 50 Specific Plan Project				
Mitigation Measure	Timing	Implementation	Enforcement	Dated Signature for Verification of Compliance
	Madison Avenue to Curragh Downs Drive, is expected to be completed by year 2013, before the first phase of the Proposed Project or alternative is complete. The applicant shall pay its proportionate share of funding of improvements to the agency responsible for improvements, based on a program established by that agency to reduce the impacts to Hazel Avenue between Madison Avenue and Curragh Downs Drive (Sacramento County Roadway Segment 10).			
Mitigation Measure 3A.15-1l: Participate in Fair Share Funding of Improvements to Reduce Impacts on the White Rock Road/Windfield Way Intersection (El Dorado County Intersection 3). To ensure that the White Rock Road/Windfield Way intersection operates at an acceptable LOS, the intersection must be signalized and separate northbound left and right turn lanes must be striped. The applicant shall pay its proportionate share of funding of improvements to the agency responsible for improvements, based on a program established by that agency to reduce the impacts to the White Rock Road/Windfield Way intersection (El Dorado County Intersection 3).	Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built.	El Dorado County Department of Transportation.	El Dorado County Department of Transportation	
Mitigation Measure 3A.15-1o: Participate in Fair Share Funding of Improvements to Reduce Impacts on Eastbound U.S. 50 as an alternative to improvements at the Folsom Boulevard/U.S. 50 Eastbound Ramps Intersection (Caltrans Intersection 4). Congestion on eastbound U.S. 50 is causing vehicles to use Folsom Boulevard as an alternate parallel route until they reach U.S. 50, where they must get back on the freeway due to the lack of a parallel route. It is preferred to alleviate the congestion on U.S. 50 than to upgrade the intersection at the end of this reliever route. The applicant shall pay its proportionate share of funding of improvements to the agency responsible for improvements, based on a program established by that agency to reduce the impacts to the Folsom Boulevard/U.S. 50 Eastbound Ramps intersection (Caltrans Intersection 4). To ensure that the Folsom Boulevard/U.S. 50 eastbound ramps intersection operates at an acceptable LOS, auxiliary lanes should be added to eastbound U.S. 50 from Hazel Avenue to east of Folsom Boulevard. This was recommended in the Traffic Operations Analysis Report for the U.S. 50 Auxiliary Lane Project.	Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built.	City of Folsom Public Works Department and Sacramento County Department of Transportation	City of Folsom Public Works Department and Sacramento County Department of Transportation	
Mitigation Measure 3A.15-1p: Participate in Fair Share Funding of Improvements to Reduce Impacts on the Grant Line Road/ State Route 16 Intersection (Caltrans Intersection 12). To ensure that the Grant Line Road/State Route 16 intersection operates at an acceptable LOS, the northbound and southbound approaches must be reconfigured to consist of one left-turn lane and one shared through/right-turn lane. Protected left-turn signal phasing must be provided on the northbound and southbound approaches. Improvements to the Grant Line Road/State Route 16 intersection are contained within the County Development Fee Program, and are scheduled for Measure A funding. ▸ Improvements to this intersection must be implemented by Caltrans, Sacramento County, and the City of Rancho Cordova. The applicant shall pay its proportionate share of funding of improvements to the agency responsible for improvements, based on a program established by that agency to reduce the impacts to the Grant Line Road/State Route 16 intersection (Caltrans Intersection 12).	Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built.	Sacramento County Department of Transportation and the City of Rancho Cordova Department of Public Works	Sacramento County Department of Transportation and the City of Rancho Cordova Department of Public Works	

Table 1 Mitigation Monitoring and Reporting Plan for the Folsom South of U.S. Highway 50 Specific Plan Project				
Mitigation Measure	Timing	Implementation	Enforcement	Dated Signature for Verification of Compliance
Mitigation Measure 3A.15-1q: Participate in Fair Share Funding of Improvements to Reduce Impacts on Eastbound U.S. 50 between Zinfandel Drive and Sunrise Boulevard (Freeway Segment 1). To ensure that Eastbound U.S. 50 operates at an acceptable LOS between Zinfandel Drive and Sunrise Boulevard, a bus-carpool (HOV) lane must be constructed. This improvement is currently planned as part of the Sacramento 50 Bus-Carpool Lane and Community Enhancements Project. The applicant shall pay its proportionate share of funding of improvements to the agency responsible for improvements, based on a program established by that agency to reduce the impacts to Eastbound U.S. 50 between Zinfandel Drive and Sunrise Boulevard (Freeway Segment 1).	Before project build out. Construction of the Sacramento 50 Bus-Carpool Lane and Community Enhancements Project is expected to be completed by year 2013, before the first phase of the Proposed Project or alternative is complete. Construction of the Sacramento 50 Bus-Carpool Lane and Community Enhancements Project has started since the writing of the Draft EIS/EIR.	Caltrans	Caltrans	
Mitigation Measure 3A.15-1r: Participate in Fair Share Funding of Improvements to Reduce Impacts on Eastbound U.S. 50 between Hazel Avenue and Folsom Boulevard (Freeway Segment 3). To ensure that Eastbound U.S. 50 operates at an acceptable LOS between Hazel Avenue and Folsom Boulevard, an auxiliary lane must be constructed. This improvement was recommended in the Traffic Operations Analysis Report for the U.S. 50 Auxiliary Lane Project. This improvement is included in the proposed 50 Corridor Mobility Fee Program. The applicant shall pay its proportionate share of funding of improvements to the agency responsible for improvements, based on a program established by that agency to reduce the impacts to Eastbound U.S. 50 between Hazel Avenue and Folsom Boulevard (Freeway Segment 3).	Before project build out. A phasing analysis should be performed to determine during which project phase the improvement should be built.	City of Folsom Public Works Department and Sacramento County Department of Transportation	City of Folsom Public Works Department and Sacramento County Department of Transportation	
Mitigation Measure 3A.15-1s: Participate in Fair Share Funding of Improvements to Reduce Impacts on Eastbound U.S. 50 between Folsom Boulevard and Prairie City Road (Freeway Segment 4). To ensure that Eastbound U.S. 50 operates at an acceptable LOS between Folsom Boulevard and Prairie City Road, an auxiliary lane must be constructed. This improvement was recommended in the Traffic Operations Analysis Report for the U.S. 50 Auxiliary Lane Project. This improvement is included in the proposed 50 Corridor Mobility Fee Program. The applicant shall pay its proportionate share of funding of improvements, as may be determined by a nexus study or other appropriate and reliable mechanism paid for by applicant, to reduce the impacts to Eastbound U.S. 50 between Folsom Boulevard and Prairie City Road (Freeway Segment 4).	Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built.	City of Folsom Public Works Department and Sacramento County Department of Transportation	City of Folsom Public Works Department and Sacramento County Department of Transportation	
Mitigation Measure 3A.15-1u: Participate in Fair Share Funding of Improvements to Reduce Impacts on Westbound U.S. 50 between Prairie City Road and Folsom Boulevard (Freeway Segment 16). To ensure that Westbound U.S. 50 operates at an acceptable LOS between Prairie City Road and Folsom Boulevard, an auxiliary lane must be constructed. This improvement was recommended in the Traffic Operations Analysis Report for the U.S. 50 Auxiliary Lane Project. This improvement is included in the proposed 50 Corridor Mobility Fee Program. The applicant shall pay its proportionate share of funding of improvements, as may be determined by a nexus study or other appropriate and reliable mechanism paid for by applicant, to reduce the impacts to Westbound U.S. 50 between Prairie City Road and Folsom Boulevard (Freeway Segment 16).	Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built.	City of Folsom Public Works Department and Sacramento County Department of Transportation	City of Folsom Public Works Department and Sacramento County Department of Transportation	
Mitigation Measure 3A.15-1v: Participate in Fair Share Funding of Improvements to Reduce Impacts on Westbound U.S. 50 between Hazel Avenue and Sunrise Boulevard (Freeway Segment 18). To ensure that Westbound U.S. 50 operates at an acceptable LOS between Hazel Avenue and Sunrise Boulevard, an auxiliary lane must be constructed. This improvement was recommended in the Traffic Operations Analysis Report for the U.S. 50 Auxiliary Lane Project, and included in the proposed Rancho Cordova Parkway interchange project. Improvements to this freeway segment must be implemented by Caltrans. The applicant shall pay its proportionate share of funding of improvements to the agency responsible for improvements, based on a program established by that agency to reduce the impacts to	Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which	City of Rancho Cordova Department of Public Works and Sacramento County Department of Transportation	City of Rancho Cordova Department of Public Works and Sacramento County Department of Transportation	

Table 1
Mitigation Monitoring and Reporting Plan for the Folsom South of U.S. Highway 50 Specific Plan Project

Mitigation Measure	Timing	Implementation	Enforcement	Dated Signature for Verification of Compliance
Westbound U.S. 50 between Hazel Avenue and Sunrise Boulevard (Freeway Segment 18).	project phase the improvement			
Mitigation Measure 3A.15-1w: Participate in Fair Share Funding of Improvements to Reduce Impacts on U.S. 50 Eastbound/Folsom Boulevard Ramp Merge (Freeway Merge 4). To ensure that Eastbound U.S. 50 operates at an acceptable LOS at the Folsom Boulevard merge, an auxiliary lane from the Folsom Boulevard merge to the Prairie City Road diverge must be constructed. This improvement was recommended in the Traffic Operations Analysis Report for the U.S. 50 Auxiliary Lane Project. This improvement is included in the proposed 50 Corridor Mobility Fee Program. The applicant shall pay its proportionate share of funding of improvements to the agency responsible for improvements, based on a program established by that agency to reduce the impacts to the U.S. 50 Eastbound/Folsom Boulevard Ramp Merge (Freeway Merge 4).	Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built.	City of Folsom Public Works Department and Sacramento County Department of Transportation	City of Folsom Public Works Department and Sacramento County Department of Transportation	
Mitigation Measure 3A.15-1x: Participate in Fair Share Funding of Improvements to Reduce Impacts on U.S. 50 Eastbound/Prairie City Road Diverge (Freeway Diverge 5). To ensure that Eastbound U.S. 50 operates at an acceptable LOS at the Prairie City Road off-ramp diverge, an auxiliary lane from the Folsom Boulevard merge must be constructed. This improvement was recommended in the Traffic Operations Analysis Report for the U.S. 50 Auxiliary Lane Project. This auxiliary lane improvement is included in the proposed 50 Corridor Mobility Fee Program. The applicant shall pay its proportionate share of funding of improvements, as may be determined by a nexus study or other appropriate and reliable mechanism paid for by applicant, to reduce the impacts to the U.S. 50 Eastbound/Prairie City Road diverge (Freeway Diverge 5).	Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built.	City of Folsom Public Works Department and Sacramento County Department of Transportation	City of Folsom Public Works Department and Sacramento County Department of Transportation	
Mitigation Measure 3A.15-1y: Participate in Fair Share Funding of Improvements to Reduce Impacts on U.S. 50 Eastbound/Prairie City Road Direct Merge (Freeway Merge 6). To ensure that Eastbound U.S. 50 operates at an acceptable LOS at the Prairie City Road on-ramp direct merge, an auxiliary lane to the East Bidwell Street – Scott Road diverge must be constructed. This auxiliary lane improvement is included in the proposed 50 Corridor Mobility Fee Program. The applicant shall pay its proportionate share of funding of improvements, as may be determined by a nexus study or other appropriate and reliable mechanism paid for by applicant, to reduce the impacts to the U.S. 50 Eastbound/Prairie City Road direct merge (Freeway Merge 6).	Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built.	City of Folsom Public Works Department	City of Folsom Public Works Department	
Mitigation Measure 3A.15-1z: Participate in Fair Share Funding of Improvements to Reduce Impacts on U.S. 50 Eastbound/Prairie City Road Flyover On-Ramp to Oak Avenue Parkway Off-Ramp Weave (Freeway Weave 8). To ensure that Eastbound U.S. 50 operates at an acceptable LOS at the Prairie City Road flyover on-ramp to Oak Avenue Parkway off-ramp weave, an improvement acceptable to Caltrans should be implemented to eliminate the unacceptable weaving conditions. Such an improvement may involve a “braided ramp”. The applicant shall pay its proportionate share of funding of improvements, as may be determined by a nexus study or other appropriate and reliable mechanism paid for by applicant, to reduce the impacts to the U.S. 50 Eastbound / Prairie City Road flyover on-ramp to Oak Avenue Parkway off-ramp weave (Freeway Weave 8).	Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built.	City of Folsom Public Works Department	City of Folsom Public Works Department	
Mitigation Measure 3A.15-1aa: Participate in Fair Share Funding of Improvements to Reduce Impacts on U.S. 50 Eastbound/Oak Avenue Parkway Loop Merge (Freeway Merge 9). To ensure that Eastbound U.S. 50 operates at an acceptable LOS at the Oak Avenue Parkway loop merge, an auxiliary lane to the East Bidwell Street – Scott Road diverge must be constructed. This auxiliary lane improvement is included in the proposed 50 Corridor Mobility Fee Program. The applicant shall pay its proportionate share of funding of improvements, as may be determined by a nexus study or other appropriate and reliable mechanism paid for by applicant, to reduce the impacts to the U.S. 50 Eastbound/ Oak Avenue Parkway loop merge (Freeway Merge 9).	Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built.	City of Folsom Public Works Department	City of Folsom Public Works Department	

Table 1 Mitigation Monitoring and Reporting Plan for the Folsom South of U.S. Highway 50 Specific Plan Project				
Mitigation Measure	Timing	Implementation	Enforcement	Dated Signature for Verification of Compliance
Mitigation Measure 3A.15-1dd: Participate in Fair Share Funding of Improvements to Reduce Impacts on U.S. 50 Westbound/Empire Ranch Road Loop Ramp Merge (Freeway Merge 23). To ensure that Westbound U.S. 50 operates at an acceptable LOS, the northbound Empire Ranch Road loop on ramp should start the westbound auxiliary lane that ends at the East Bidwell Street – Scott Road off ramp. The slip on ramp from southbound Empire Ranch Road would merge into this extended auxiliary lane. Improvements to this freeway segment must be implemented by Caltrans. The applicant shall pay its proportionate share of funding of improvements, as may be determined by a nexus study or other appropriate and reliable mechanism paid for by applicant, to reduce the impacts to the U.S. 50 Westbound/Empire Ranch Road loop ramp merge (Freeway Merge 23).	Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built.	City of Folsom Public Works Department	City of Folsom Public Works Department	
Mitigation Measure 3A.15-1ee: Participate in Fair Share Funding of Improvements to Reduce Impacts on U.S. 50 Westbound/Oak Avenue Parkway Loop Ramp Merge (Freeway Merge 29). To ensure that Westbound U.S. 50 operates at an acceptable LOS, the northbound Oak Avenue Parkway loop on ramp should start the westbound auxiliary lane that ends at the Prairie City Road off ramp. The slip on ramp from southbound Oak Avenue Parkway would merge into this extended auxiliary lane. Improvements to this freeway segment must be implemented by Caltrans. The applicant shall pay its proportionate share of funding of improvements, as may be determined by a nexus study or other appropriate and reliable mechanism paid for by applicant, to reduce the impacts to the U.S. 50 Westbound/Oak Avenue Parkway loop ramp merge (Freeway Merge 29).	Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built.	City of Folsom Public Works Department	City of Folsom Public Works Department	
Mitigation Measure 3A.15-1ff: Participate in Fair Share Funding of Improvements to Reduce Impacts on U.S. 50 Westbound/Prairie City Road Loop Ramp Merge (Freeway Merge 32). To ensure that Westbound U.S. 50 operates at an acceptable LOS at the Prairie City Road loop ramp merge, an auxiliary lane to the Folsom Boulevard off ramp diverge must be constructed. This auxiliary lane improvement is included in the proposed 50 Corridor Mobility Fee Program. The applicant shall pay its proportionate share of funding of improvements, as may be determined by a nexus study or other appropriate and reliable mechanism paid for by applicant, to reduce the impacts to the U.S. 50 Westbound/Prairie City Road Loop Ramp Merge (Freeway Merge 32).	Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built.	City of Folsom Public Works Department and Sacramento County Department of Transportation	City of Folsom Public Works Department and Sacramento County Department of Transportation	
Mitigation Measure 3A.15-1gg: Participate in Fair Share Funding of Improvements to Reduce Impacts on U.S. 50 Westbound/Prairie City Road Direct Ramp Merge (Freeway Merge 33). To ensure that Westbound U.S. 50 operates at an acceptable LOS at the Prairie City Road direct ramp merge, an auxiliary lane to the Folsom Boulevard off ramp diverge must be constructed. This auxiliary lane improvement is included in the proposed 50 Corridor Mobility Fee Program. The applicant shall pay its proportionate share of funding of improvements, as may be determined by a nexus study or other appropriate and reliable mechanism paid for by applicant, to reduce the impacts to the U.S. 50 Westbound/Prairie City Road direct ramp merge (Freeway Merge 33).	Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built.	City of Folsom Public Works Department and Sacramento County Department of Transportation	City of Folsom Public Works Department and Sacramento County Department of Transportation	
Mitigation Measure 3A.15-1hh: Participate in Fair Share Funding of Improvements to Reduce Impacts on U.S. 50 Eastbound/Folsom Boulevard Diverge (Freeway Diverge 34). To ensure that Westbound U.S. 50 operates at an acceptable LOS at the Folsom Boulevard Diverge, an auxiliary lane from the Prairie City Road loop ramp merge must be constructed. Improvements to this freeway segment must be implemented by Caltrans. This auxiliary lane improvement is included in the proposed 50 Corridor Mobility Fee Program. The applicant shall pay its proportionate share of funding of improvements, as may be determined by a nexus study or other appropriate and reliable mechanism paid for by applicant, to reduce the impacts to the U.S. 50 Eastbound / Folsom Boulevard diverge (Freeway Diverge 34).	Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built.	City of Folsom Public Works Department and Sacramento County Department of Transportation	City of Folsom Public Works Department and Sacramento County Department of Transportation	
Mitigation Measure 3A.15-1ii: Participate in Fair Share Funding of Improvements to Reduce Impacts on U.S. 50 Westbound/Hazel Avenue Direct Ramp Merge (Freeway Merge 38). To ensure that Westbound U.S. 50 operates at an acceptable LOS at the Hazel Avenue direct ramp merge, an auxiliary lane to the Sunrise Boulevard off ramp diverge must be constructed. This auxiliary lane improvement is included in the proposed 50 Corridor Mobility Fee Program. The applicant shall pay its proportionate share of funding of improvements to	Before project build out. A phasing analysis should be performed prior to approval of the	Sacramento County Department of Transportation and City of Rancho Cordova	Sacramento County Department of Transportation and City of Rancho Cordova Department of Public Works	

Table 1 Mitigation Monitoring and Reporting Plan for the Folsom South of U.S. Highway 50 Specific Plan Project				
Mitigation Measure	Timing	Implementation	Enforcement	Dated Signature for Verification of Compliance
the agency responsible for improvements, based on a program established by that agency to reduce the impacts to the U.S. 50 Westbound/Hazel Avenue direct ramp merge (Freeway Merge 38).	first subdivision map to determine during which project phase the improvement should be built.	Department of Public Works		
Mitigation Measure 3A.15-2a: Develop Commercial Support Services and Mixed-use Development Concurrent with Housing Development, and Develop and Provide Options for Alternative Transportation Modes. The project applicant(s) for any particular discretionary development application including commercial or mixed-use development along with residential uses shall develop commercial and mixed-use development concurrent with housing development, to the extent feasible in light of market realities and other considerations, to internalize vehicle trips. Pedestrian and bicycle facilities shall be implemented to the satisfaction of the City Public Works Department. To further minimize impacts from the increased demand on area roadways and intersections, the project applicant(s) for any particular discretionary development application involving schools or commercial centers shall develop and implement safe and secure bicycle parking to promote alternative transportation uses and reduce the volume of single-occupancy vehicles using area roadways and intersections. The project applicant(s) for any particular discretionary development application shall participate in capital improvements and operating funds for transit service to increase the percent of travel by transit. The project's fair-share participation and the associated timing of the improvements and service shall be identified in the project conditions of approval and/or the project's development agreement. Improvements and service shall be coordinated, as necessary, with Folsom Stage Lines and Sacramento RT.	Before approval of improvement plans for all project phases any particular discretionary development application that includes residential and commercial or mixed-use development. As a condition of project approval and/or as a condition of the development agreement for all project phases.	City of Folsom and Applicant(s) City of Folsom, Regional Transit, and Applicant(s)	City of Folsom Public Works Department. City of Folsom Public Works Department.	
Mitigation Measure 3A.15-2b: Participate in the City's Transportation System Management Fee Program. The project applicant(s) for any particular discretionary development application shall pay an appropriate amount into the City's existing Transportation System Management Fee Program to reduce the number of single-occupant automobile travel on area roadways and intersections.	Concurrent with construction for all project phases.	City of Folsom and Applicant(s)	City of Folsom Public Works Department.	
Mitigation Measure 3A.15-2c: Participate with the 50 Corridor Transportation Management Association. The project applicant(s) for any particular discretionary development application shall join and participate with the 50 Corridor Transportation Management Association to reduce the number of single-occupant automobile travel on area roadways and intersections.	Concurrent with construction for all project phases.	50 Corridor Transportation Management Association and Applicant(s)	City of Folsom Public Works Department.	
Mitigation Measure 3A.15-3: Pay Full Cost of Identified Improvements that Are Not Funded by the City's Fee Program. In accordance with Measure W, the project applicant(s) for any particular discretionary development application shall provide fair-share contributions to the City's transportation impact fee program to fully fund improvements only required because of the Specific Plan.	As a condition of project approval and/or as a condition of the development agreement for all project phases.	City of Folsom and Applicant(s)	City of Folsom Public Works Department	
Mitigation Measure 3A.15-4a: The Applicant Shall Pay a Fair Share to Fund the Construction of Improvements to the Sibley Street/Blue Ravine Road Intersection (Folsom Intersection 2). To ensure that the Sibley Street/Blue Ravine Road intersection operates at a LOS D with less than the Cumulative No Project delay, the northbound approach must be reconfigured to consist of two left-turn lane, two through lanes, and one dedicated right-turn lane. The applicant shall pay its proportionate share of funding of improvements, as may be determined by a nexus study or other appropriate and reliable mechanism paid for by applicant, to reduce the impacts to the Sibley Street/Blue Ravine Road intersection (Folsom Intersection 2).	Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built.	City of Folsom Public Works Department.	City of Folsom Public Works Department	
Mitigation Measure 3A.15-4b: The Applicant Shall Pay a Fair Share to Fund the Construction of Improvements to the Oak Avenue Parkway/East Bidwell Street Intersection (Folsom Intersection 6). To ensure that the Oak Avenue Parkway/East Bidwell Street intersection operates at an acceptable LOS, the eastbound (East Bidwell Street) approach must be reconfigured to consist of two left-turn lanes, four through lanes and a right-turn lane, and the westbound (East Bidwell Street) approach must be reconfigured to consist of two left-turn lanes, four through lanes, and a right-turn lane. It is against the City of Folsom policy to have eight lane roads because of the impacts to non motorized traffic and adjacent development; therefore, this improvement is infeasible.				

Table 1 Mitigation Monitoring and Reporting Plan for the Folsom South of U.S. Highway 50 Specific Plan Project				
Mitigation Measure	Timing	Implementation	Enforcement	Dated Signature for Verification of Compliance
Mitigation Measure 3A.15-4c: The Applicant Shall Pay a Fair Share to Fund the Construction of Improvements to the East Bidwell Street/College Street Intersection (Folsom Intersection 7). To ensure that the East Bidwell Street/College Street intersection operates at acceptable LOS C or better, the westbound approach must be reconfigured to consist of one left-turn lane, one left-through lane, and two dedicated right-turn lanes. The applicant shall pay its proportionate share of funding of improvements, as may be determined by a nexus study or other appropriate and reliable mechanism paid for by applicant, to reduce the impacts to the East Bidwell Street/Nesmith Court intersection (Folsom Intersection 7).	Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built.	City of Folsom Public Works Department.	City of Folsom Public Works Department	
Mitigation Measure 3A.15-4d: The Applicant Shall Pay a Fair Share to Fund the Construction of Improvements to the East Bidwell Street/Iron Point Road Intersection (Folsom Intersection 21). To ensure that the East Bidwell Street /Iron Point Road intersection operates at an acceptable LOS, the northbound approach must be reconfigured to consist of two left-turn lanes, four through lanes and a right-turn lane, and the southbound approach must be reconfigured to consist of two left-turn lanes, four through lanes and a right-turn lane. It is against the City of Folsom policy to have eight lane roads because of the impacts to non motorized traffic and adjacent development; therefore, this improvement is infeasible.				
Mitigation Measure 3A.15-4e: The Applicant Shall Pay a Fair Share to Fund the Construction of Improvements to the Serpa Way/ Iron Point Road Intersection (Folsom Intersection 23). To improve LOS at the Serpa Way/ Iron Point Road intersection, the northbound approaches must be restriped to consist of one left-turn lane, one shared left-through lanes, and one right-turn lane. The applicant shall pay its proportionate share of funding of improvements, as may be determined by a nexus study or other appropriate and reliable mechanism paid for by applicant, to reduce the impacts to the Serpa Way/Iron Point Road Intersection (Folsom Intersection 23).	Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be build.	City of Folsom Public Works Department.	City of Folsom Public Works Department	
Mitigation Measure 3A.15-4f: The Applicant Shall Pay a Fair Share to Fund the Construction of Improvements to the Empire Ranch Road/Iron Point Road Intersection (Folsom Intersection 24). To ensure that the Empire Ranch Road / Iron Point Road intersection operates at a LOS D or better, all of the following improvements are required: ▸ The eastbound approach must be reconfigured to consist of one left-turn lane, two through lanes, and a right-turn lane. ▸ The westbound approach must be reconfigured to consist of two left-turn lanes, one through lane, and a through-right lane. ▸ The northbound approach must be reconfigured to consist of two left-turn lanes, three through lanes, and a right-turn lane. ▸ The southbound approach must be reconfigured to consist of two left-turn lanes, three through lanes, and a right-turn lane. The applicant shall pay its proportionate share of funding of improvements, as may be determined by a nexus study or other appropriate and reliable mechanism paid for by applicant, to reduce the impacts to the Empire Ranch Road / Iron Point Road Intersection (Folsom Intersection 24).	Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built.	City of Folsom Public Works Department.	City of Folsom Public Works Department	
Mitigation Measure 3A.15-4g: The Applicant Shall Fund and Construct Improvements to the Oak Avenue Parkway/Easton Valley Parkway Intersection (Folsom Intersection 33). To ensure that the Oak Avenue Parkway/Easton Valley Parkway intersection operates at an acceptable LOS the southbound approach must be reconfigured to consist of two left-turn lanes, two through lanes, and two right-turn lanes. The applicant shall fund and construct these improvements.	Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built.	City of Folsom Public Works Department.	City of Folsom Public Works Department	
Mitigation Measure 3A.15-4i: Participate in Fair Share Funding of Improvements to Reduce Impacts on the Grant Line Road/White Rock Road Intersection (Sacramento County Intersection 3). To ensure that the Grant Line Road/White Rock Road intersection operates at an acceptable LOS E or better this intersection should be replaced by some type of grade separated intersection or interchange. Improvements to this intersection are identified in the Sacramento County's Proposed General Plan. Implementation of these improvements would assist in reducing traffic impacts on this intersection by providing acceptable operation. Intersection improvements must be	Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to	Sacramento County Department of Transportation.	Sacramento County Department of Transportation.	

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Mitigation Measure	Timing	Implementation	Enforcement	Dated Signature for Verification of Compliance
implemented by Sacramento County. The applicant shall pay its proportionate share of funding of improvements to the agency responsible for improvements, based on a program established by that agency to reduce the impacts to the Grant Line Road/White Rock Road Intersection (Sacramento County Intersection 3).	determine during which project phase the improvement should be built.			
Mitigation Measure 3A.15-4j: Participate in Fair Share Funding of Improvements to Reduce Impacts on Grant Line Road between White Rock Road and Kiefer Boulevard (Sacramento County Roadway Segments 5-7). To improve operation on Grant Line Road between White Rock Road and Kiefer Boulevard, this roadway segment must be widened to six lanes. This improvement is proposed in the Sacramento County and the City of Rancho Cordova General Plans; however, it is not in the 2035 MTP. Improvements to this roadway segment must be implemented by Sacramento County and the City of Rancho Cordova. The applicant shall pay its proportionate share of funding of improvements to the agency responsible for improvements, based on a program established by that agency to reduce the impacts to Grant Line Road between White Rock Road and Kiefer Boulevard (Sacramento County Roadway Segments 5-7). The identified improvement would more than offset the impacts specifically related to the Folsom South of U.S. 50 project on this roadway segment.	Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built.	Sacramento County Department of Transportation.	Sacramento County Department of Transportation.	
Mitigation Measure 3A.15-4k: Participate in Fair Share Funding of Improvements to Reduce Impacts on Grant Line Road between Kiefer Boulevard and Jackson Highway (Sacramento County Roadway Segment 8). To improve operation on Grant Line Road between Kiefer Boulevard Jackson Highway, this roadway segment could be widened to six lanes. This improvement is proposed in the Sacramento County and the City of Rancho Cordova General Plans; however, it is not in the 2035 MTP. Improvements to this roadway segment must be implemented by Sacramento County and the City of Rancho Cordova. The applicant shall pay its proportionate share of funding of improvements to the agency responsible for improvements, based on a program established by that agency to reduce the impacts to Grant Line Road between Kiefer Boulevard and Jackson Highway (Sacramento County Roadway Segment 8). The identified improvement would more than offset the impacts specifically related to the Folsom South of U.S. 50 project on this roadway segment.	Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built.	Sacramento County Department of Transportation.	Sacramento County Department of Transportation.	
Mitigation Measure 3A.15-4l: Participate in Fair Share Funding of Improvements to Reduce Impacts on Hazel Avenue between Curragh Downs Drive and U.S. 50 Westbound Ramps (Sacramento County Roadway Segment s 12-13). To improve operation on Hazel Avenue between Curragh Downs Drive and the U.S. 50 westbound ramps, this roadway segment could be widened to eight lanes. This improvement is inconsistent with Sacramento County's general plan because the county's policy requires a maximum roadway cross section of six lanes. Analysis shown later indicates that improvements at the impacted intersection in this segment can be mitigated (see Mitigation Measure 3A.15-4q). Improvements to impacted intersections on this segment will improve operations on this roadway segment and, therefore; mitigate this segment impact. The applicant shall pay its proportionate share of funding of improvements to the agency responsible for improvements, based on a program established by that agency to reduce the impacts to Hazel Avenue between Curragh Downs Drive and U.S. 50 Westbound Ramps (Sacramento County Roadway Segments 12-13).	Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built.	Sacramento County Department of Transportation.	Sacramento County Department of Transportation.	
Mitigation Measure 3A.15-4m: Participate in Fair Share Funding of Improvements to Reduce Impacts on White Rock Road between Grant Line Road and Prairie City Road (Sacramento County Roadway Segment 22). To improve operation on White Rock Road between Grant Line Road and Prairie City Road, this roadway segment must be widened to six lanes. This improvement is included in the 2035 MTP but is not included in the Sacramento County General Plan. Improvements to this roadway segment must be implemented by Sacramento County. The identified improvement would more than offset the impacts specifically related to the Folsom South of U.S. 50 project on this roadway segment. However, because of other development in the region that would substantially increase traffic levels, this roadway segment would continue to operate at an unacceptable LOS F even with the capacity improvements identified to mitigate Folsom South of U.S. 50 impacts. The applicant shall pay its proportionate share of funding of improvements to the agency responsible for improvements, based on a program established by that agency to reduce the impacts to White Rock Road between Grant Line Road and Prairie City Road (Sacramento County Roadway Segment 22).	Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built.	Sacramento County Department of Transportation.	Sacramento County Department of Transportation.	
Mitigation Measure 3A.15-4n: Participate in Fair Share Funding of Improvements to Reduce Impacts on White Rock Road between Empire Ranch Road and Carson Crossing Road (Sacramento County Roadway Segment 28). To improve operation on White Rock Road between Empire Ranch Road and Carson Crossing Road, this roadway segment must be widened to six lanes. Improvements to this roadway segment must be implemented by Sacramento County. The applicant shall pay its proportionate share of funding of improvements to	Before project build out. A phasing analysis should be performed prior to approval of the	Sacramento County Department of Transportation.	Sacramento County Department of Transportation.	

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Mitigation Measure	Timing	Implementation	Enforcement	Dated Signature for Verification of Compliance
the agency responsible for improvements, based on a program established by that agency to reduce the impacts to White Rock Road between Empire Ranch Road and Carson Crossing Road (Sacramento County Roadway Segment 28).	first subdivision map to determine during which project phase the improvement should be built.			
Mitigation Measure 3A.15-4o: Participate in Fair Share Funding of Improvements to Reduce Impacts on the White Rock Road/Carson Crossing Road Intersection (El Dorado County 1). To ensure that the White Rock Road/Carson Crossing Road intersection operates at an acceptable LOS, the eastbound right turn lane must be converted into a separate free right turn lane, or double right. Improvements to this intersection must be implemented by El Dorado County. The applicant shall pay its proportionate share of funding of improvements to the agency responsible for improvements, based on a program established by that agency to reduce the impacts to the White Rock Road/Carson Crossing Road Intersection (El Dorado County 1).	Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built.	El Dorado County Department of Public Works.	El Dorado County Department of Public Works.	
Mitigation Measure 3A.15-4p: Participate in Fair Share Funding of Improvements to Reduce Impacts on the Hazel Avenue/U.S. 50 Westbound Ramps Intersection (Caltrans Intersection 1). To ensure that the Hazel Avenue/U.S. 50 westbound ramps intersection operates at an acceptable LOS, the westbound approach must be reconfigured to consist of one dedicated left turn lane, one shared left-through lane and three dedicated right-turn lanes. Improvements to this intersection must be implemented by Caltrans and Sacramento County. The applicant shall pay its proportionate share of funding of improvements to the agency responsible for improvements, based on a program established by that agency to reduce the impacts to the Hazel Avenue/U.S. 50 Westbound Ramps Intersection (Caltrans Intersection 1).	Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built.	Sacramento County Department of Transportation.	Sacramento County Department of Transportation.	
Mitigation Measure 3A.15-4q: Participate in Fair Share Funding of Improvements to Reduce Impacts on Eastbound US 50 between Zinfandel Drive and Sunrise Boulevard (Freeway Segment 1). To ensure that Eastbound US 50 operates at an acceptable LOS between Zinfandel Drive and Sunrise Boulevard, an additional eastbound lane could be constructed. This improvement is not consistent with the Concept Facility in Caltrans State Route 50 Corridor System Management Plan; therefore, it is not likely to be implemented by Caltrans by 2030. Construction of the Capitol South East Connector, including widening White Rock Road and Grant Line Road to six lanes with limited access, could divert some traffic from U.S. 50 and partially mitigate the project's impact. The applicant shall pay its proportionate share of funding of improvements to the agency responsible for improvements, based on a program established by that agency to reduce the impacts to Eastbound U.S. 50 between Zinfandel Drive and Sunrise Boulevard (Freeway Segment 1).	Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built.	Capitol Southeast Connecter Joint Powers Authority.	Capitol Southeast Connecter Joint Powers Authority.	
Mitigation Measure 3A.15-4r: Participate in Fair Share Funding of Improvements to Reduce Impacts on Eastbound US 50 between Rancho Cordova Parkway and Hazel Avenue (Freeway Segment 3). To ensure that Eastbound US 50 operates at an acceptable LOS between Rancho Cordova Parkway and Hazel Avenue, an additional eastbound lane could be constructed. This improvement is not consistent with the Concept Facility in Caltrans State Route 50 Corridor System Management Plan; therefore, it is not likely to be implemented by Caltrans by 2030. Construction of the Capitol South East Connector, including widening White Rock Road and Grant Line Road to six lanes with limited access, could divert some traffic off of U.S. 50 and partially mitigate the project's impact. The applicant shall pay its proportionate share of funding of improvements to the agency responsible for improvements, based on a program established by that agency to reduce the impacts to Eastbound U.S. 50 between Rancho Cordova Parkway and Hazel Avenue (Freeway Segment 3).	Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built.	Capitol Southeast Connecter Joint Powers Authority.	Capitol Southeast Connecter Joint Powers Authority.	
Mitigation Measure 3A.15-4s: Participate in Fair Share Funding of Improvements to Reduce Impacts on Eastbound US 50 between Folsom Boulevard and Prairie City Road (Freeway Segment 5). To ensure that Eastbound US 50 operates at an acceptable LOS between Folsom Boulevard and Prairie City Road, the eastbound auxiliary lane should be converted to a mixed flow lane that extends to and drops at the Oak Avenue Parkway off ramp (see mitigation measure 3A.15-4t). Improvements to this freeway segment must be implemented by Caltrans. This improvement is not consistent with the Concept Facility in Caltrans State Route 50 Corridor System Management Plan; therefore, it is not likely to be implemented by Caltrans by 2030. Construction of the Capitol South East Connector, including widening White Rock Road and Grant Line Road to six lanes with limited	Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the	Capitol Southeast Connecter Joint Powers Authority.	Capitol Southeast Connecter Joint Powers Authority.	

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Mitigation Measure	Timing	Implementation	Enforcement	Dated Signature for Verification of Compliance
access, could divert some traffic off of U.S. 50 and partially mitigate the project's impact. The applicant shall pay its proportionate share of funding of improvements, as may be determined by a nexus study or other appropriate and reliable mechanism paid for by applicant, to reduce the impacts to Eastbound U.S. 50 between Folsom Boulevard and Prairie City Road (Freeway Segment 5).	improvement should be built.			
Mitigation Measure 3A.15-4t: Participate in Fair Share Funding of Improvements to Reduce Impacts on Eastbound US 50 between Prairie City Road and Oak Avenue Parkway (Freeway Segment 6). To ensure that Eastbound US 50 operates at an acceptable LOS between Prairie City Road and Oak Avenue Parkway, the northbound Prairie City Road slip on ramp should merge with the eastbound auxiliary lane that extends to and drops at the Oak Avenue Parkway off ramp (see Mitigation Measures 3A.15-4u, v and w), and the southbound Prairie City Road flyover on ramp should be braided over the Oak Avenue Parkway off ramp and start an extended full auxiliary lane to the East Bidwell Street – Scott Road off ramp. Improvements to this freeway segment must be implemented by Caltrans. The applicant shall pay its proportionate share of funding of improvements, as may be determined by a nexus study or other appropriate and reliable mechanism paid for by applicant, to reduce the impacts to Eastbound U.S. 50 between Prairie City Road and Oak Avenue Parkway (Freeway Segment 6).	Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built.	City of Folsom Public Works Department	City of Folsom Public Works Department	
Mitigation Measure 3A.15-4u: Participate in Fair Share Funding of Improvements to Reduce Impacts on the U.S. 50 Eastbound / Prairie City Road Slip Ramp Merge (Freeway Merge 6). To ensure that Eastbound US 50 operates at an acceptable LOS, the northbound Prairie City Road slip on ramp should start the eastbound auxiliary lane that extends to and drops at the Oak Avenue Parkway off ramp (see mitigation measure 3A.15-4u, w and x), and the southbound Prairie City Road flyover on ramp should be braided over the Oak Avenue Parkway off ramp and start an extended full auxiliary lane to the East Bidwell Street – Scott Road off ramp. Improvements to this freeway segment must be implemented by Caltrans. The applicant shall pay its proportionate share of funding of improvements, as may be determined by a nexus study or other appropriate and reliable mechanism paid for by applicant, to reduce the impacts to the U.S. 50 Eastbound / Prairie City Road slip ramp merge (Freeway Merge 6).	Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built.	City of Folsom Public Works Department.	City of Folsom Public Works Department.	
Mitigation Measure 3A.15-4v: Participate in Fair Share Funding of Improvements to Reduce Impacts on the U.S. 50 Eastbound / Prairie City Road Flyover On Ramp to Oak Avenue Parkway Off Ramp Weave (Freeway Weave 7). To ensure that Eastbound US 50 operates at an acceptable LOS, the northbound Prairie City Road slip on ramp should start the eastbound auxiliary lane that extends to and drops at the Oak Avenue Parkway off ramp (see mitigation measure 3A.15-4u, v and x), and the southbound Prairie City Road flyover on ramp should be braided over the Oak Avenue Parkway off ramp and start an extended full auxiliary lane to the East Bidwell Street – Scott Road off ramp. Improvements to this freeway segment must be implemented by Caltrans. The applicant shall pay its proportionate share of funding of improvements, as may be determined by a nexus study or other appropriate and reliable mechanism paid for by applicant, to reduce the impacts to the U.S. 50 Eastbound / Prairie City Road Flyover On Ramp to Oak Avenue Parkway Off Ramp Weave (Freeway Weave 7).	Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built.	City of Folsom Public Works Department.	City of Folsom Public Works Department.	
Mitigation Measure 3A.15-4w: Participate in Fair Share Funding of Improvements to Reduce Impacts on U.S. 50 Eastbound / Oak Avenue Parkway Loop Ramp Merge (Freeway Merge 8). To ensure that Eastbound US 50 operates at an acceptable LOS, the southbound Oak Avenue Parkway loop on ramp should merge with the eastbound auxiliary lane that starts at the southbound Prairie City Road braided flyover on ramp and ends at the East Bidwell Street – Scott Road off ramp (see mitigation measure 3A.15-4u, v and w). Improvements to this freeway segment must be implemented by Caltrans. The applicant shall pay its proportionate share of funding of improvements, as may be determined by a nexus study or other appropriate and reliable mechanism paid for by applicant, to reduce the impacts to U.S. 50 Eastbound / Oak Avenue Parkway Loop Ramp Merge (Freeway Merge 8).	Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built.	City of Folsom Public Works Department.	City of Folsom Public Works Department.	
Mitigation Measure 3A.15-4x: Participate in Fair Share Funding of Improvements to Reduce Impacts on U.S. 50 Westbound / Empire Ranch Road Loop Ramp Merge (Freeway Merge 27). To ensure that Westbound US 50 operates at an acceptable LOS, the northbound Empire Ranch Road loop on ramp should start the westbound auxiliary lane that ends at the East Bidwell Street – Scott Road off ramp. The slip on ramp from southbound Empire Ranch Road slip ramp would merge into this extended auxiliary lane. Improvements to this freeway segment must be implemented by Caltrans. The applicant shall pay its proportionate share of funding of improvements, as may be determined by a nexus study or other appropriate and reliable mechanism paid for by applicant, to reduce the impacts to the U.S. 50 Westbound / Empire Ranch Road loop ramp merge (Freeway Merge 27).	Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built.	City of Folsom Public Works Department.	City of Folsom Public Works Department.	

Table 1
Mitigation Monitoring and Reporting Plan for the Folsom South of U.S. Highway 50 Specific Plan Project

Mitigation Measure	Timing	Implementation	Enforcement	Dated Signature for Verification of Compliance
Mitigation Measure 3A.15-4y: Participate in Fair Share Funding of Improvements to Reduce Impacts on U.S. 50 Westbound / Prairie City Road Loop Ramp Merge (Freeway Merge 35). To ensure that Westbound US 50 operates at an acceptable LOS, the northbound Prairie City Road loop on ramp should start the westbound auxiliary lane that continues beyond the Folsom Boulevard off ramp. The slip on ramp from southbound Prairie City Road slip ramp would merge into this extended auxiliary lane. Improvements to this freeway segment must be implemented by Caltrans. The applicant shall pay its proportionate share of funding of improvements, as may be determined by a nexus study or other appropriate and reliable mechanism paid for by applicant, to reduce the impacts to the U.S. 50 Westbound / Prairie City Road Loop Ramp Merge (Freeway Merge 35).	Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built.	City of Folsom Public Works Department and Sacramento County Department of Transportation.	City of Folsom Public Works Department and Sacramento County Department of Transportation.	
3B.15 TRAFFIC AND TRANSPORTATION - WATER				
Mitigation Measure 3B.15-1a: Prepare Traffic Control Plan. Prior to construction, the City shall prepare a Traffic Control Plan for roadways and intersections affected by Off-site Water Facilities-related construction. The Traffic Control Plan shall designate haul routes and comply with requirements in the encroachment permits issued by the City of Rancho Cordova, Sacramento County, and Caltrans. The Traffic Control Plan to be prepared by the construction contractor(s) 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 a.m. to 8 a.m. and 5 p.m. to 6 p.m. on weekdays). ▸ The City shall provide a minimum 72-hour advance notice of access restrictions for residents, businesses, and local emergency response agencies. This shall include the identification of alternative routes and detours to enable for the avoidance of the immediate construction zone. ▸ The City, in cooperation with its contractor(s), shall provide a phone number and community contact for inquiries about the schedule of the Off-site Water Facilities throughout the construction period. This information will be posted in a local newspaper, via the City's web site, or at City Hall and will be updated on a monthly basis. ▸ To the extent practical depending the alignment of the selected Off-site Water Facility Alternative, the City shall maximize opportunities for coordinated construction and installation of the conveyance pipeline with other planned roadway improvement projects.	Prior to and during construction of all Off-site Water Facilities	City of Folsom Utilities Department	1. For structural improvements that would be located within the City of Folsom: City of Folsom Neighborhood Services Department and City of Folsom Community Development Department. 2. For structural improvements that would be located within unincorporated Sacramento County: Sacramento County Planning and Community Development Department. 3. For structural improvements that would be located within the City of Rancho Cordova: City of Rancho Cordova Planning Department.	
Mitigation Measure 3B.15-1b: Assess Pre-Off-site Water Facilities Roadway Conditions. Prior to construction, the City's construction contractor(s) shall be responsible for assessing current road conditions for Off-site Water Facilities-related haul routes including the local access roads and develop post construction road restoration requirements. As part of the encroachment permitting process, an agreement shall be entered into with applicable jurisdictions prior to construction that details post construction road restoration requirements. Staff with the City of Rancho Cordova and Sacramento County shall review the post construction restoration standards for each of the affected roadways. The City shall perform roadway repairs or rehabilitation as necessary such that post construction requirements are met.	Prior to and during construction of all Off-site Water Facilities	City of Folsom Utilities Department	1. For structural improvements that would be located within the City of Folsom: City of Folsom Neighborhood Services Department and City of Folsom Community Development Department. 2. For structural improvements that would be located within unincorporated Sacramento County: Sacramento County Planning and Community Development Department. 3. For structural improvements that would be located within the City of Rancho Cordova: City of Rancho Cordova Planning Department.	

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Mitigation Measure	Timing	Implementation	Enforcement	Dated Signature for Verification of Compliance
3A.16 UTILITIES AND SERVICE SYSTEMS - LAND				
Mitigation Measure 3A.16-1: Submit Proof of Adequate On- and Off-Site Wastewater Conveyance Facilities and Implement On- and Off-Site Infrastructure Service Systems or Ensure That Adequate Financing Is Secured. Before the approval of the final map and issuance of building permits for all project phases, the project applicant(s) of all project phases shall submit proof to the City of Folsom that an adequate wastewater conveyance system either has been constructed or is ensured through payment of the City's facilities augmentation fee as described under the Folsom Municipal Code Title 3, Chapter 3.40, "Facilities Augmentation Fee – Folsom South Area Facilities Plan," or other sureties to the City's satisfaction. Both on-site wastewater conveyance infrastructure and off-site force main sufficient to provide adequate service to the project shall be in place for the amount of development identified in the tentative map before approval of the final map and issuance of building permits for all project phases, or their financing shall be ensured to the satisfaction of the City.	Before approval of final maps and issuance of building permits for any project phases.	The project applicant(s) of all project phases.	City of Folsom Community Development Department and City of Folsom Public Works Department.	
Mitigation Measure 3A.16-3: Demonstrate Adequate SRWTP Wastewater Treatment Capacity. The project applicant(s) of all project phases shall demonstrate adequate capacity at the SRWTP for new wastewater flows generated by the project. This shall involve preparing a tentative map–level study and paying connection and capacity fees as identified by SRCSD. Approval of the final map and issuance of building permits for all project phases shall not be granted until the City verifies adequate SRWTP capacity is available for the amount of development identified in the tentative map.	Before approval of final maps and issuance of building permits for any project phases.	The project applicant(s) of all project phases.	City of Folsom Community Development Department and City of Folsom Public Works Department.	
Mitigation Measure 3A.16-4: Submit Proof of Adequate EID Off-Site Wastewater Conveyance Facilities and Implement EID Off-Site Infrastructure Service Systems or Ensure That Adequate Financing Is Secured. Before the approval of the final map and issuance of building permits for all project phases, the project applicant(s) of all project phases shall obtain proof from EID that an adequate wastewater conveyance system either has been constructed or is ensured through the use of bonds or other sureties. The project applicants of all project phases shall submit this proof to the City of Folsom. EID off-site wastewater conveyance infrastructure sufficient to provide adequate service to project shall be in place for the amount of development identified in the tentative map before approval of the final map and issuance of building permits for all project phases, and before issuance of occupancy permits, or their financing shall be ensured to the satisfaction of the City.	Before approval of final maps and issuance of building permits for any project phase	The project applicant(s) of all project phases..	City of Folsom Community Development Department and City of Folsom Public Works Department.	
Mitigation Measure 3A.16-5: Demonstrate Adequate El Dorado Hills Wastewater Treatment Plant Capacity. The project applicant(s) of all project phases shall demonstrate adequate capacity at the El Dorado Hills WWTP for new wastewater flows generated by project development. This shall involve preparing a tentative map–level study and paying connection and capacity fees as identified by EID. Approval of the final map and issuance of building permits for all project phases shall not be granted until the City verifies adequate El Dorado Hills WWTP capacity is available for the amount of development identified in the tentative map.	Before approval of final maps and issuance of building permits for any project phases involving the El Dorado Hills WWTP.	The project applicant(s) of all project phases.	City of Folsom Community Development Department and City of Folsom Public Works Department.	
3B.16 UTILITIES AND SERVICE SYSTEMS - WATER				
Mitigation Measure 3B.16-3a: Minimize Utility Conflicts by Implementing an Underground Services Alert. Underground utilities and service connections shall be identified prior to commencing any excavation work through the implementation of an Underground Services Alert (USA). The exact utility locations will be determined by hand-excavated test pits dug at locations determined and approved by the construction manager (also referred to as "pot-holing"). Temporary disruption of service may be required to allow for construction. No service on such lines would be disrupted until prior approval is received from the construction manager and the service provider.	Prior to construction of all Off-site Water Facilities	City of Folsom Utilities Department	City of Folsom Utilities Department	
Mitigation Measure 3B.16-3b: Coordinate with Utility Providers and Implement Appropriate Installation Methods to Minimize Potential Utility Service Disruptions. Prior to installation, the City shall consult with SCWA, SRCSD, CSD-1, and PG&E to determine proper installation methods and final design criteria to minimize the potential for disruptions to existing and planned utilities.	Prior to construction of all Off-site Water Facilities	City of Folsom Utilities Department	City of Folsom Utilities Department	
3B.17 GROUNDWATER - WATER				
Mitigation Measure 3B.17-1a: Implement Construction Dewatering Best Management Practices. During construction at site locations containing high groundwater, if groundwater from dewatering activities cannot be contained within the construction area (e.g. pipeline corridor, WTP), it shall be pumped to an authorized onsite land area, existing detention facilities, or Baker tanks or equivalent with sufficient capacity to control the volume of groundwater. Tanks shall be equipped with either a gel coagulant, a filter system, or other containment to remove sediment. The Off-site Water Facilities Stormwater Pollution Prevention Plan (SWPPP) shall include BMPs, as appropriate, to retain, treat, and dispose of groundwater from dewatering activities. Measures shall include, but not limited to, the	Prior to and during construction	City of Folsom Utilities Department	1. California Department of Fish and Game or Regional Water Quality Control Board 2. City of Folsom Community Development Department.	

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following: ▸ temporarily retain pumped groundwater, as appropriate, to reduce turbidity and concentrations of suspended sediments before discharge to surface waterways; ▸ convey pumped groundwater to a suitable land disposal area capable of percolating flows; and/or ▸ incorporate other applicable measures from the Caltrans Storm Water Quality Handbook, Section 7: Dewatering Operations (2004).			3. Sacramento County Planning Department or City of Rancho Cordova Planning Department for improvements within their respective jurisdictions.	
Mitigation Measure 3B.17-1b: Implement a Dewatering Discharge Monitoring Program. A groundwater discharge monitoring program shall be implemented to ensure that receiving water quality does not exceed levels that would impact aquatic resources and agricultural use. If monitoring reveals that water quality would impact these beneficial uses, discharges to surface waterways shall be reduced or diluted to acceptable levels, or terminated. If discharges are reduced or terminated, groundwater shall be disposed through land application. Groundwater collected during dewatering shall be tested for contamination prior to disposal and comply with Central Valley RWQCB requirements.	Prior to and during construction	City of Folsom Utilities Department	1. California Department of Fish and Game or Regional Water Quality Control Board 2. City of Folsom Community Development Department. 3. Sacramento County Planning Department or City of Rancho Cordova Planning Department for improvements within their respective jurisdictions.	
3A.18 WATER SUPPLY - LAND				
Mitigation Measure 3A.18-1: Submit Proof of Surface Water Supply Availability. a. Prior to approval of any small-lot tentative subdivision map subject to Government Code Section 66473.7 (SB 221), the City shall comply with that statute. Prior to approval of any small-lot tentative subdivision map for a proposed residential project not subject to that statute, the City need not comply with Section 66473.7, or formally consult with any public water system that would provide water to the affected area; nevertheless, the City shall make a factual showing or impose conditions similar to those required by Section 66473.7 to ensure an adequate water supply for development authorized by the map. b. Prior to recordation of each final subdivision map, or prior to City approval of any similar project-specific discretionary approval or entitlement required for nonresidential uses, the project applicant(s) of that project phase or activity shall demonstrate the availability of a reliable and sufficient water supply from a public water system for the amount of development that would be authorized by the final subdivision map or project-specific discretionary nonresidential approval or entitlement. Such a demonstration shall consist of information showing that both existing sources are available or needed supplies and improvements will be in place prior to occupancy.	Before approval of final maps and issuance of building permits for any project phases.	The project applicant(s) of all project phases.	City of Folsom Community Development Department and City of Folsom Public Works Department.	
Mitigation Measure 3A.18-2a: Submit Proof of Adequate Off-Site Water Conveyance Facilities and Implement Off-Site Infrastructure Service System or Ensure That Adequate Financing Is Secured. Before the approval of the final subdivision map and issuance of building permits for all project phases, the project applicant(s) of any particular discretionary development application shall submit proof to the City of Folsom that an adequate off-site water conveyance system either has been constructed or is ensured or other sureties to the City's satisfaction. The off-site water conveyance infrastructure sufficient to provide adequate service to the project shall be in place for the amount of development identified in the tentative map before approval of the final subdivision map and issuance of building permits for all project phases, or their financing shall be ensured to the satisfaction of the City. A certificate of occupancy shall not be issued for any building within the SPA until the water conveyance infrastructure sufficient to serve such building has been constructed and is in place.	Before approval of final maps and issuance of building permits for any project phases.	The project applicant(s) for any particular discretionary development application.	City of Folsom Community Development Department and City of Folsom Public Works Department.	
Mitigation Measure 3A.18-2b: Demonstrate Adequate Off-Site Water Treatment Capacity (if the Off-Site Water Treatment Plant Option is Selected). If an off-site water treatment plant (WTP) alternative is selected (as opposed to the on-site WTP alternative), the project applicant(s) for any particular discretionary development application shall demonstrate adequate capacity at the off-site WTP. This shall involve preparing a tentative map–level study and paying connection and capacity fees as determined by the City. Approval of the final project map shall not be granted until the City verifies adequate water treatment capacity either is available or is certain to be available when needed for the amount of development identified in the tentative map before approval of the final map and issuance of building permits for all project phases. A certificate of occupancy shall not be issued for any building within the SPA until the water treatment capacity sufficient to serve such	Before approval of final maps and issuance of building permits for any project phases.	The project applicant(s) for any particular discretionary development application.	City of Folsom Community Development Department and City of Folsom Public Works Department.	

Table 1 Mitigation Monitoring and Reporting Plan for the Folsom South of U.S. Highway 50 Specific Plan Project				
Mitigation Measure	Timing	Implementation	Enforcement	Dated Signature for Verification of Compliance
building has been constructed and is in place.				
CUMULATIVE - LAND				
Cumulative Mitigation Measure AIR-1-Land: Implement East Sacramento Regional Aggregate Mining Truck Management Plan or Other Measures to Reduce Exposure of Sensitive Receptors to Operational Emissions of Toxic Air Contaminants from Quarry Truck Traffic. The City of Folsom is a participant in the development of an East Sacramento Regional Aggregate Mining Truck Management Plan (TMP), a cooperative effort led by the County of Sacramento, with the input of the City of Folsom, the City of Rancho Cordova and other interested parties, including representatives of quarry project applicants. When the County Board of Supervisors approved entitlements for the Teichert quarry project in November 2010, it also adopted conditions of approval and a development agreement that requires Teichert's participation in, and fair share funding of, a TMP to implement roadway capacity and safety improvements required to improve the compatibility of truck traffic from the quarries with the future urban development in the Folsom Specific Plan area and other jurisdictions that will be affected by quarry truck traffic. The development agreement adopted by the County for the Teichert project imposes limits on the amounts of annual aggregate sales from Teichert's facility until a TMP is adopted. The City of Folsom does not have direct jurisdiction over the Teichert, DeSilva Gates, or Walltown quarry project applicants as these projects are located within the unincorporated portion of the County. The County, as the agency with the primary authority over the quarries, has indicated that it intends to prepare an environmental analysis in accordance with CEQA prior to adoption of a TMP. The City's authority to control the activities of the quarry trucks includes restrictions or other actions, such as the approval and implementation of specialized road improvements to accommodate quarry truck traffic, that would be applicable within the City's jurisdictional boundaries. For the foregoing reasons, the City of Folsom considers itself a "responsible agency" (as that term is defined at State CEQA Guidelines, CCR Section 15381), in that it has some discretionary power over some elements of a future TMP, if such TMP calls for improvements or other activities on roadways within the jurisdiction of the City. In a responsible agency role, the City would follow the process specified in the CEQA Guidelines for consideration and approval of the environmental analysis prepared by the County for a TMP after such documentation is prepared and adopted by the County. (State CEQA Guidelines, CCR Section 15096.) Because no final project description for a TMP has been developed as of the completion of this FEIR/FEIS, the City would have to speculate as to those portions of a TMP that might be proposed for implementation within its jurisdiction, or the impacts that could arise from the implementation of as-yet uncertain components. Accordingly, formulation of the precise means of mitigating the potential cumulative air quality impacts pursuant to the TMP is not currently feasible or practical. However, as the preferred, feasible, and intended mitigation strategy to address the cumulative impacts of quarry truck traffic through the SPA, the City shall implement, or cause to be implemented those portions of the TMP (as described above) that are within its authority to control. In implementing the TMP, the City shall ensure that the TMP or traffic measures imposed by the City within the SPA reduce the risk of cancer to sensitive receptors along routes within the SPA from toxic air contaminant emissions to no more than 296 in one million (SMAQMD 2009. March. Recommended Protocol for Evaluating the Location of Sensitive Land Uses Adjacent to Major Roadways, Version 2.2:7), or such different threshold of significance mandated by SMAQMD or ARB at the time, if any. With this mitigation, the cumulative air quality impacts from truck toxic air contaminants would be less than significant. As an alternative (or in addition) to implementing the TMP within the SPA, the following measures could (and should) be voluntarily implemented by the quarry project applicant(s) (Teichert, DeSilva Gates, and Granite [Walltown]) to help ensure exposure of sensitive receptors to TACs generated by quarry truck traffic to the 296-in-one-million threshold of significance identified above. The City encourages implementation of the following measures: ▸ The quarry project applicant(s) should meet with the City of Folsom to discuss mitigation strategies, implementation, and cost. ▸ A site-specific, project-level screening analysis and/or Health Risk Assessment (HRA) should be conducted by the City of Folsom and funded by the truck applicant(s) for all proposed sensitive receptors (e.g., residences, schools) in the SPA that would be located along the sides of roadway segments that are identified in Table 4-4 as being potentially significant under any of the analyzed scenarios. Each project-level analysis shall be performed according to the standards set forth by SMAQMD for the purpose of disclosure to the public and decision makers. The project-level analysis shall account for the location of the receptors relative to the roadway, their distance from the roadway, the projected future traffic volume for the year 2030 (including the proportion of diesel trucks), and emission rates representative of the vehicle fleet for the year when the sensitive land uses would first become operational and/or occupied. If the incremental increase in cancer risk determined by in the HRA exceeds 296 in one million (or a different threshold of significance recommended by SMAQMD or ARB at the time, if any), then project design mitigation should be employed, which may include the following:	Prior to approval of first tentative map or discretionary approval within SPA that would place sensitive receptors along roadways that quarry trucks would reasonably use to access U.S. Highway 50.	The project applicant(s) of the Folsom South of U.S. 50 Specific Plan project.	City of Folsom Community Development Department.	

Table 1 Mitigation Monitoring and Reporting Plan for the Folsom South of U.S. Highway 50 Specific Plan Project				
Mitigation Measure	Timing	Implementation	Enforcement	Dated Signature for Verification of Compliance
• Increase the setback distance between the roadway and affected receptor. If this mitigation measure is determined by the City of Folsom to be necessary, based on the results of the HRA, the quarry truck applicant(s) should pay the Folsom South of U.S. 50 Specific Plan project applicant(s) and the City of Folsom a fee that shall serve as compensation for lost development profit and lost City tax revenues, all as determined by the parties. Said mitigation fee shall be determined in consultation with the quarry project applicant(s), the Folsom South of U.S. 50 Specific Plan project applicant(s), and the City of Folsom. No quarry trucks shall be allowed to pass on any roadway segment immediately adjacent to or within the SPA until said mitigation fees are paid. • Implement tiered tree planting of fine-needle species, such as redwood, along the near side of the roadway segments and, if feasible, along the roadway 500 feet in both directions of the initial planting (e.g., 500 feet north and south of a roadway that runs east-west) to enhance the dispersion and filtration of mobile-source TACs associated with the adjacent roadway. These trees should be planted at a density such that a solid visual buffer is achieved after the trees reach maturity, which breaks the line of sight between U.S. 50 and the proposed homes. These trees should be planted before occupation of any affected sensitive land uses. This measure encourages the planting of these trees in advance of the construction of potentially affected receptors to allow the trees to become established and progress toward maturity. The life of these trees should be maintained through the duration of the quarry projects. The planting, cost, and ongoing maintenance of these trees should be funded by the quarry project applicant(s). • To improve the indoor air quality at affected receptors, implement the following measures before the occupancy of the affected residences and schools: • equip all affected residences and school buildings developed in the SPA with High Efficiency Particle Arresting (HEPA) filter systems at all mechanical air intake points to the interior rooms; • use the heating, ventilation, and air conditioning (HVAC) systems to maintain all residential units under positive pressure at all times; • locate air intake systems for HVAC as far away from roadway air pollution sources as possible; and • develop and implement an ongoing education and maintenance plan about the filtration systems associated with HVAC for residences and schools. To the extent this indoor air quality mitigation would not already be implemented as part of the Folsom South of U.S. 50 Specific Plan project development, this mitigation should be paid for by the quarry project applicant(s) before any quarry trucks are allowed to pass on any roadway that is within 400 feet of any residence or school within the SPA.				
CUMULATIVE - NOISE				
Cumulative Mitigation Measure NOISE-1-Land: Implement East Sacramento Regional Aggregate Mining Truck Management Plan or Other Measures to Reduce Exposure of Sensitive Receptors to Operational Noise from Quarry Truck Traffic. The City of Folsom is a participant in the development of an East Sacramento Regional Aggregate Mining Truck Management Plan (TMP), a cooperative effort led by the County of Sacramento, with the input of the City of Folsom, the City of Rancho Cordova and other interested parties, including representatives of quarry project applicants. When the County Board of Supervisors approved entitlements for the Teichert quarry project in November 2010, it also adopted conditions of approval and a development agreement that requires Teichert's participation in, and fair share funding of, a TMP to implement roadway capacity and safety improvements required to improve the compatibility of truck traffic from the quarries with the future urban development in the SPA and other jurisdictions that will be affected by quarry truck traffic. The development agreement adopted by the County for the Teichert project imposes limits on the amounts of annual aggregate sales from Teichert's facility until a TMP is adopted. The City of Folsom does not have direct jurisdiction over the Teichert, DeSilva Gates, or Walltown quarry project applicants as these projects are located within the unincorporated portion of the County. The County, as the agency with the primary authority over the quarries, has indicated that it intends to prepare an environmental analysis in accordance with CEQA prior to adoption of a TMP. The City's authority to control the activities of the quarry trucks includes restrictions or other actions, such as the approval and implementation of specialized road improvements to accommodate quarry truck traffic, that would be applicable within the City's jurisdictional boundaries. For the foregoing reasons, the City of Folsom considers itself a "responsible agency" (as that term is defined at State CEQA Guidelines, CCR Section 15381), in that it has some discretionary power over some elements of a future TMP, if such TMP calls for improvements or other activities on roadways within the jurisdiction of the City. In a responsible agency role, the City would follow the process specified in the CEQA Guidelines for consideration and approval of the environmental analysis prepared by the County for a TMP after such documentation is prepared and adopted by the County. (State CEQA Guidelines, CCR Section 15096.) Because no final project description for a TMP has been developed as of the completion of this FEIR/FEIS, the City would have to speculate	Prior to approval of first tentative map or discretionary approval within SPA that would place sensitive receptors along roadways that quarry trucks would reasonably use to access U.S. 50.	The project applicant(s) of the Folsom South of U.S. 50 Specific Plan project.	City of Folsom Community Development Department.	

Table 1
Mitigation Monitoring and Reporting Plan for the Folsom South of U.S. Highway 50 Specific Plan Project

Mitigation Measure	Timing	Implementation	Enforcement	Dated Signature for Verification of Compliance
as to those portions of a TMP that might be proposed for implementation within its jurisdiction, or the impacts that could arise from the of as-yet uncertain components. Accordingly, formulation of the precise means of mitigating the potential cumulative noise impacts pursuant to the TMP is not currently feasible or practical. However, as the preferred, feasible, and intended mitigation strategy to address the cumulative impacts of quarry truck traffic through the SPA, the City shall implement, or cause to be implemented those portions of the TMP (as described above) that are within its authority to control. In implementing the TMP, the City shall ensure that the TMP or traffic measures imposed by the City within the SPA reduce the traffic noise exposure to sensitive receptors along routes within the SPA so as to ensure that sensitive receptors are not exposed to interior noise levels in excess of 45 dBA, or increases in interior noise levels of 3 dBA or more, whichever is more restrictive. With this mitigation, the cumulative noise impacts from truck traffic would be less than significant. As an alternative (or in addition) to implementing the TMP within the SPA, the following measures could (and should) be voluntarily implemented by the quarry project applicant(s) (Teichert, DeSilva Gates, and Granite [Walltown]) to help ensure interior noise levels for sensitive receptors to noise generated by quarry truck traffic would not exceed 45 dBA or increase of 3 dBA over existing conditions, as identified above. The City encourages implementation of the following measures: ▸ The quarry project applicant(s) should meet with the City of Folsom to discuss mitigation strategies, implementation, and cost. ▸ A site-specific, project-level screening analysis should be conducted by the City of Folsom and funded by the quarry truck applicant(s) for all proposed sensitive receptors (e.g., residences, schools) in the SPA that would be located along the sides of roadway segments that are identified in Table 4-8 as being potentially significant under any of the analyzed scenarios. The analysis should be conducted using an approved three dimensional traffic noise modeling program (i.e., TNM or SoundPlan). Each project-level analysis should be performed according to the standards set forth by the City of Folsom for the purpose of disclosure to the public and decision makers. The project-level analysis should account for the location of the receptors relative to the roadway, their distance from the roadway, and the projected future traffic volume for the year 2030 (including the percentage of heavy trucks). If the incremental increase in traffic noise levels are determined to exceed the threshold of significance recommended by the City of Folsom, then design mitigation should be employed, which may include the following: ▸ Model the benefits of soundwalls (berm/wall combination) along the quarry truck hauling roadways and affected receptors not to exceed a total height of eight feet (two-foot berm and six-foot concrete mason wall). If this mitigation measure is determined by the City of Folsom to be inadequate, additional three dimensional traffic noise modeling should be conducted with the inclusion of rubberized asphalt at the expense of the quarry truck applicant(s). No quarry trucks should be allowed to pass on any roadway segment immediately adjacent to or within the SPA until said mitigation has been agreed upon by the City of Folsom and fees for construction of said mitigation are paid by the quarry truck applicant(s). ▸ Implement the installation of rubberized asphalt (quiet pavement) on roadway segments adjacent to sensitive receptors that carry quarry trucks if soundwalls do not provide adequate reduction of traffic noise levels. The inclusion of rubberized asphalt would provide an additional 3 to 5 dB of traffic noise reduction. The cost of construction using rubberized asphalt should be borne by the quarry truck applicant(s). Said mitigation fee should be determined in consultation with the quarry project applicant(s), the Folsom South of U.W. 50 Specific Plan project applicant(s), and the City of Folsom. No quarry trucks should be allowed to pass on any roadway segment immediately adjacent to or within the SPA until said mitigation fees are paid. ▸ To improve the indoor noise levels at affected receptors, implement the following measures before the occupancy of the affected residences and schools: • Conduct an interior noise analysis once detailed construction plans of residences adjacent to affected roadways are available to determine the required window package at second and third floor receptors to achieve the interior noise level standard of 45 dB Ldn without quarry trucks. • Determine the interior quarry truck traffic noise level increases at second and third floor receptors adjacent to affected roadways compared to no quarry truck conditions. Window package upgrades are expected to be necessary due to the traffic noise level increases caused by quarry trucks along affected roadways. Quarry truck applicant(s) should pay for the cost of window package upgrades (increased sound transmission class rated windows) required to achieve the interior noise level standard of 45 dB Ldn with the inclusion of quarry truck traffic. To the extent this noise mitigation would not already be implemented as part of the Folsom South of U.W. 50 Specific Plan project development, this mitigation should be paid for by the quarry project applicant(s) before any quarry trucks are allowed to pass on any roadway that is within 400 feet of any residence or school within the SPA.				

Appendix D

Water and Sewer Technical Memos

MACKAY & SOMPS
CIVIL ENGINEERING PLANNING LAND SURVEYING

TECHNICAL MEMORANDUM

Date: March 22, 2016

To: Scott Johnson, City of Folsom

From: Steve Smith

CC: Elizabeth Boyd, Ascent Environmental

Subject: Comparison of Sanitary Sewer Demands for the Folsom Heights Project per the Approved Folsom Specific Plan Area versus the Amendment to the Folsom Specific Plan Area

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Introduction

The Folsom Plan Area (Plan Area) is comprised of approximately 3,513 acres, located in the southern portion of the City of Folsom. The Plan Area is bounded by Highway 50 on the north, White Rock Road on the south, Prairie City Road on the west and the Sacramento/El Dorado County line on the east. The Folsom Heights project is an approximately 189 acre planned community located within the Plan Area. The location of Folsom Heights within the Plan Area is shown on the exhibit attached in Appendix A.

The City of Folsom adopted the Folsom Plan Area Specific Plan (SP) in June of 2011. The land uses proposed for Folsom Heights per the approved SP are shown on the exhibit attached in Appendix B. A Specific Plan Amendment (SPA) for Folsom Heights was submitted to the City of Folsom for consideration in March of 2016. The proposed land uses per the SPA are also shown on the exhibit attached in Appendix B.

The purpose of this technical memo is to:

- present a comparison of Folsom Heights sanitary sewer demands between the Approved SP land uses and the SPA land uses
- demonstrate by the comparison that this Technical Memo adequately summarizes the SPA sanitary sewer demands and is suitable for submittal to the City of Folsom as a part of the Folsom Heights entitlement package

Discussion

The Folsom Heights project is located within the El Dorado Irrigation District (EID) sewer service area. Hence, sewer demands for the SP and the SPA were calculated in accordance with the EID Water, Sewer, and Recycled Water Design and Construction Standards dated July 1999. The demands per land use for the SPA are summarized as follows:

- Single Family Units (SF, SFHD): 240 gallons per day per EDU
- Multi-family Residential (MLD): 180 gallons per day per EDU
- Commercial (GC): 500 gallons per day per acre

Results

The results of the comparison are summarized in the table attached in Appendix C. The calculated average dry weather sewer flow demands are as follows:

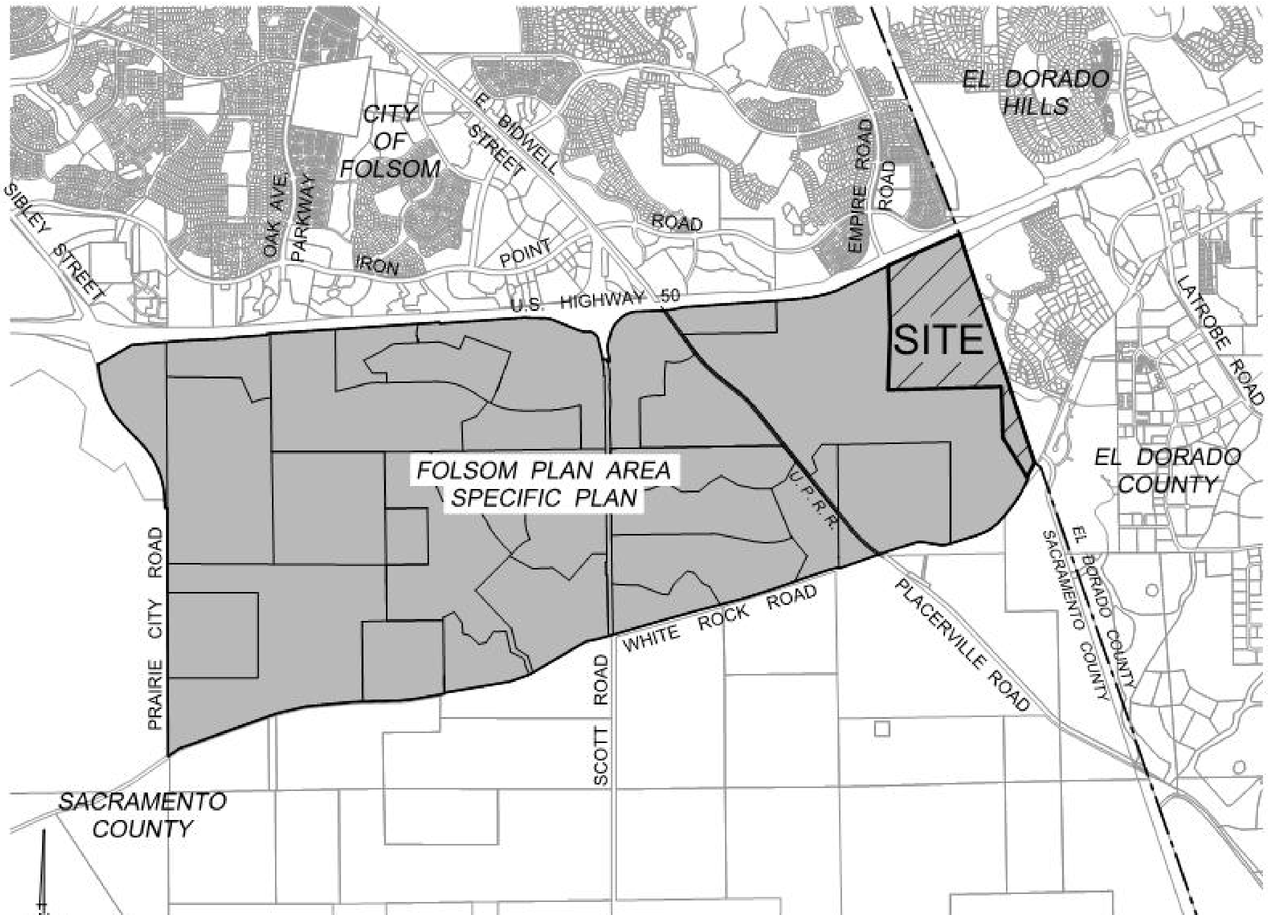
- Approved SP: 0.129 million gallon per day
- SPA: 0.125 million gallon per day

The above results denote a demand decrease between the approved SP and the SPA of 0.004 million gallon per day, which is a 3.1% decrease.

Conclusion

The above noted results indicate a minimal decrease in sewer demand for the proposed Folsom Heights SPA. As such, the results demonstrate that this Technical Memo adequately summarizes the SPA sanitary sewer demands and is suitable for submittal to the City of Folsom as a part of the Folsom Heights entitlement package.

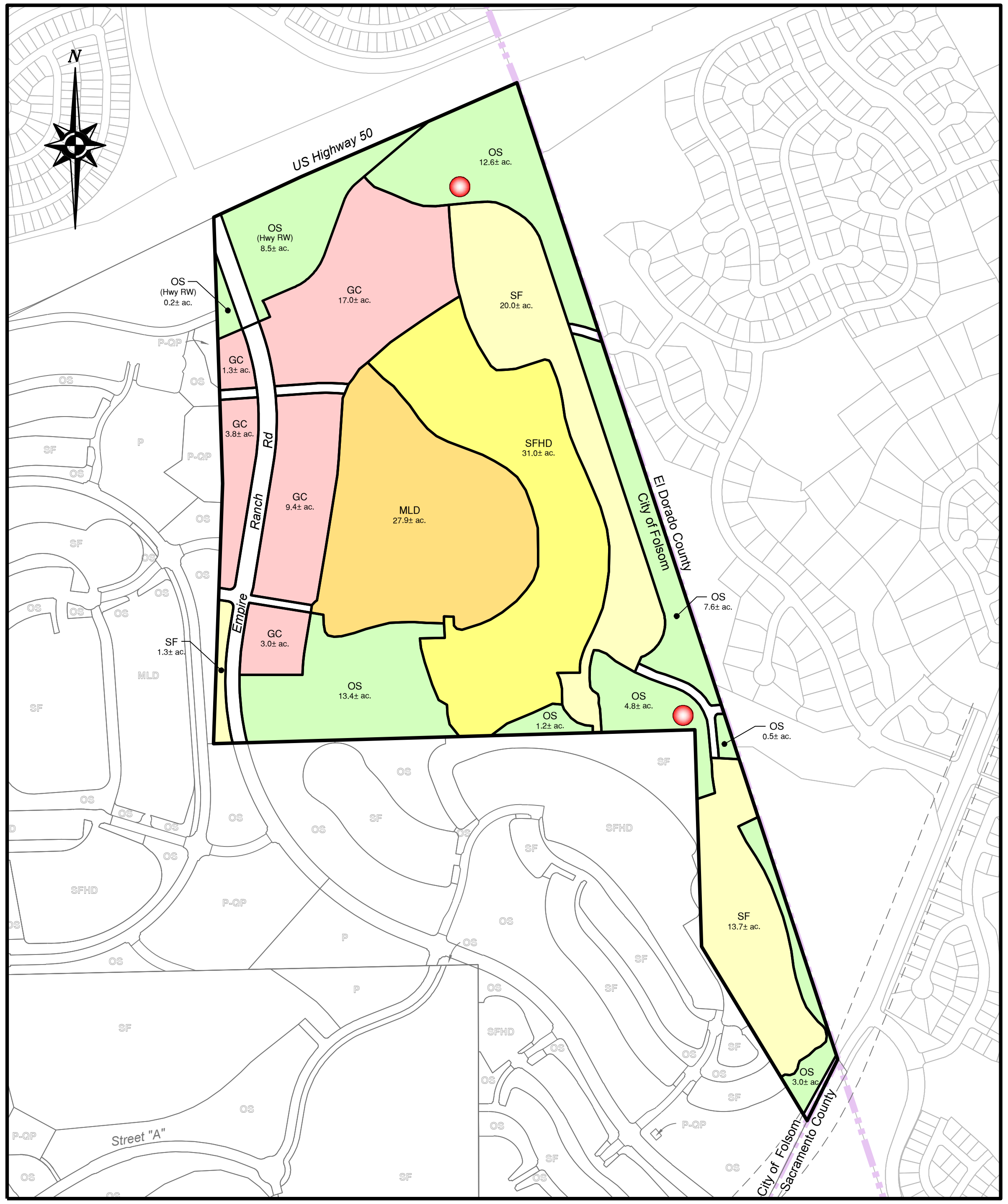
Appendix A



VICINITY MAP

n.t.s.

Appendix B



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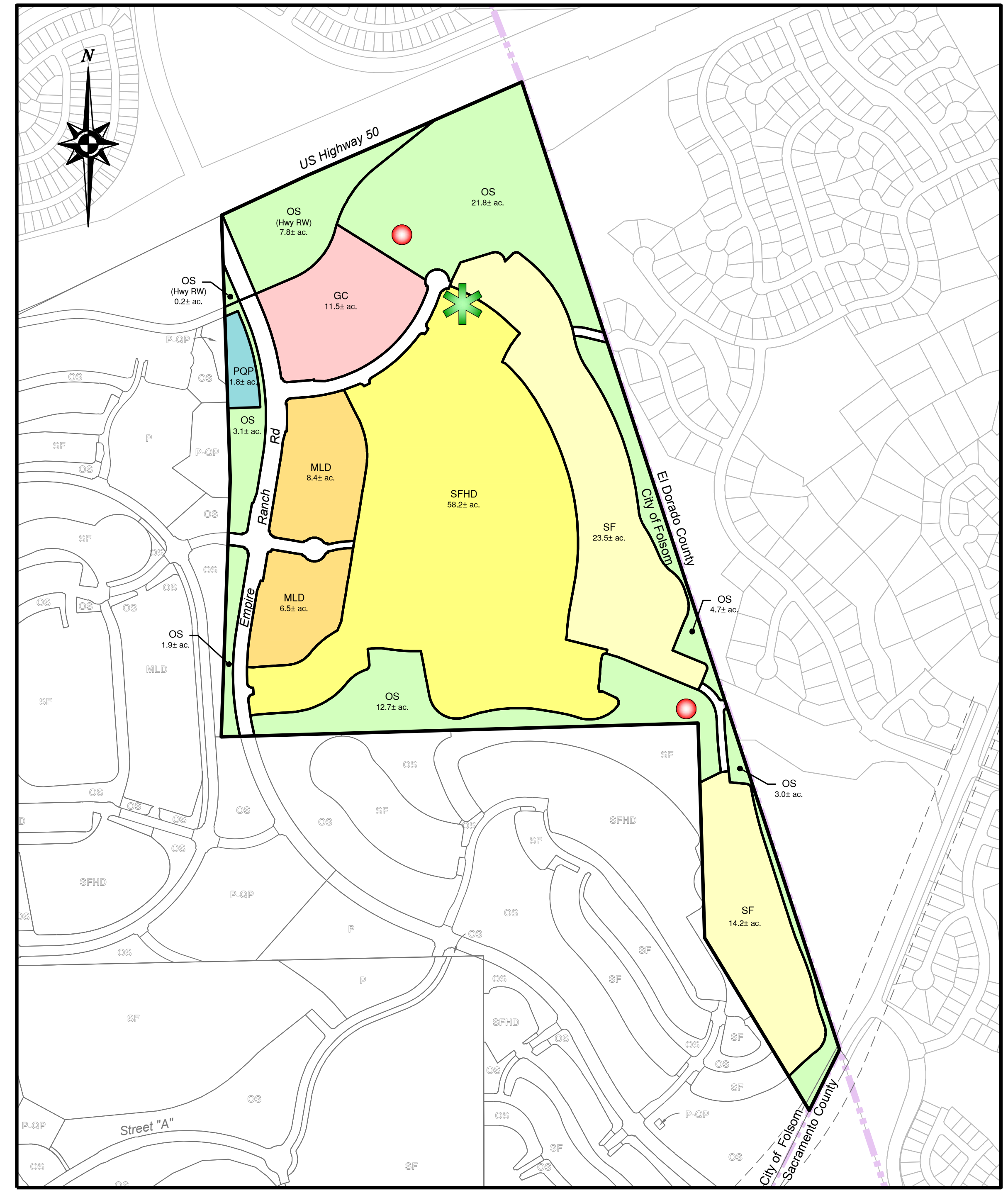

Proposed

Combo Basins

1 ac. private amenity; actual location to be determined with Tentative Map and/or Final Map.

Folsom Heights Land Uses

Folsom Heights

City of Folsom
Not to Scale

MACKAY & SOMPS
ENGINEERS PLANNERS SURVEYORS

California
March 22, 2016
Job No 7939

Appendix C

Folsom Plan Area
Folsom Heights
Specific Plan Amendment
Sanitary Sewer Demand Comparison

Folsom Heights Sewer Demands - Approved Specific Plan Land Uses (Master Plan)				
Land Use Summary				
Land Use	**Gross Area (Acres)**	**Number of Allocated Dwelling Units/ Assigned ESD's**	**Average Dry Weather Sewer Flow Demand (gallon/day/EDU) or (gallon/day/acre)**	**Average Dry Weather Sewer Flow (million gallon/day)**
SF	35.03	106	240	0.025
SFHD	31.02	171	240	0.041
MLD	27.94	253	180	0.046
GC	34.50		500	0.017
PQP (Water Tank)	0.00			
OS	43.14			
OS (Hwy RW)	10.60			
Roadways	7.49			
Total	**189.72**	**530**		**0.129**

Folsom Heights Sewer Demands - Specific Plan Amendment Land Uses				
Land Use Summary				
Land Use	**Gross Area (Acres)**	**Number of Allocated Dwelling Units/ Assigned EDU's**	**Average Dry Weather Sewer Flow Demand (gallon/day/EDU) or (gallon/day/acre)**	**Average Dry Weather Sewer Flow (million gallon/day)**
SF	37.72	125	240	0.030
SFHD	58.20	280	240	0.067
MLD	14.91	125	180	0.023
GC	11.49		500	0.006
PQP (Water Tank)	1.77			
OS	47.23			
OS (Hwy RW)	8.87			
Roadways	9.53			
Total	**189.72**	**530**		**0.125**

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March 22, 2016

Job Number: 7939

MACKAY & SOMPS
CIVIL ENGINEERING PLANNING LAND SURVEYING

TECHNICAL MEMORANDUM

Date: March 23, 2016

To: Scott Johnson, City of Folsom

From: Steve Smith

CC: Elizabeth Boyd, Ascent Environmental

Subject: Comparison of Water Demands for the Folsom Heights Project per the Approved Folsom Specific Plan Area versus the Amendment to the Folsom Specific Plan Area

---

Introduction

The Folsom Plan Area (Plan Area) is comprised of approximately 3,513 acres, located in the southern portion of the City of Folsom. The Plan Area is bounded by Highway 50 on the north, White Rock Road on the south, Prairie City Road on the west and the Sacramento/El Dorado County line on the east. The Folsom Heights project is an approximately 189 acre planned community located within the Plan Area. The location of Folsom Heights within the Plan Area is shown on the exhibit attached in Appendix A.

The City of Folsom adopted the Folsom Plan Area Specific Plan (SP) in June of 2011. The land uses proposed for Folsom Heights per the approved SP are shown on the exhibit attached in Appendix B. A Specific Plan Amendment (SPA) for Folsom Heights was submitted to the City of Folsom for consideration in March of 2016. The proposed land uses per the SPA are also shown on the exhibit attached in Appendix B.

The purpose of this technical memo is to:

- present a comparison of Folsom Heights water demands between the Approved SP land uses and the SPA land uses
- demonstrate by the comparison that the water demands for the proposed SPA land uses are consistent with the demands for the approved SP land uses in accordance with the demand criteria stipulated in the Folsom Specific Plan Area SB610 Water Assessment prepared by Tully & Young in June of 2010

Discussion

The water demands for the approved SP were calculated in accordance with the demand criteria outlined in the Folsom Specific Plan Area SB610 Water Assessment prepared by Tully & Young in June of 2010. The water demands for the various land uses within the SPA were also calculated in accordance with the criteria from the same Folsom Specific Plan Area SB610 Water Assessment. The demands per land use for both the approved SP and the SPA are shown on the summary table attached in Appendix C.

Results

The results of the comparison between the approved SP and the SPA are summarized in the table attached in Appendix C. The calculated average yearly demands for each are as follows:

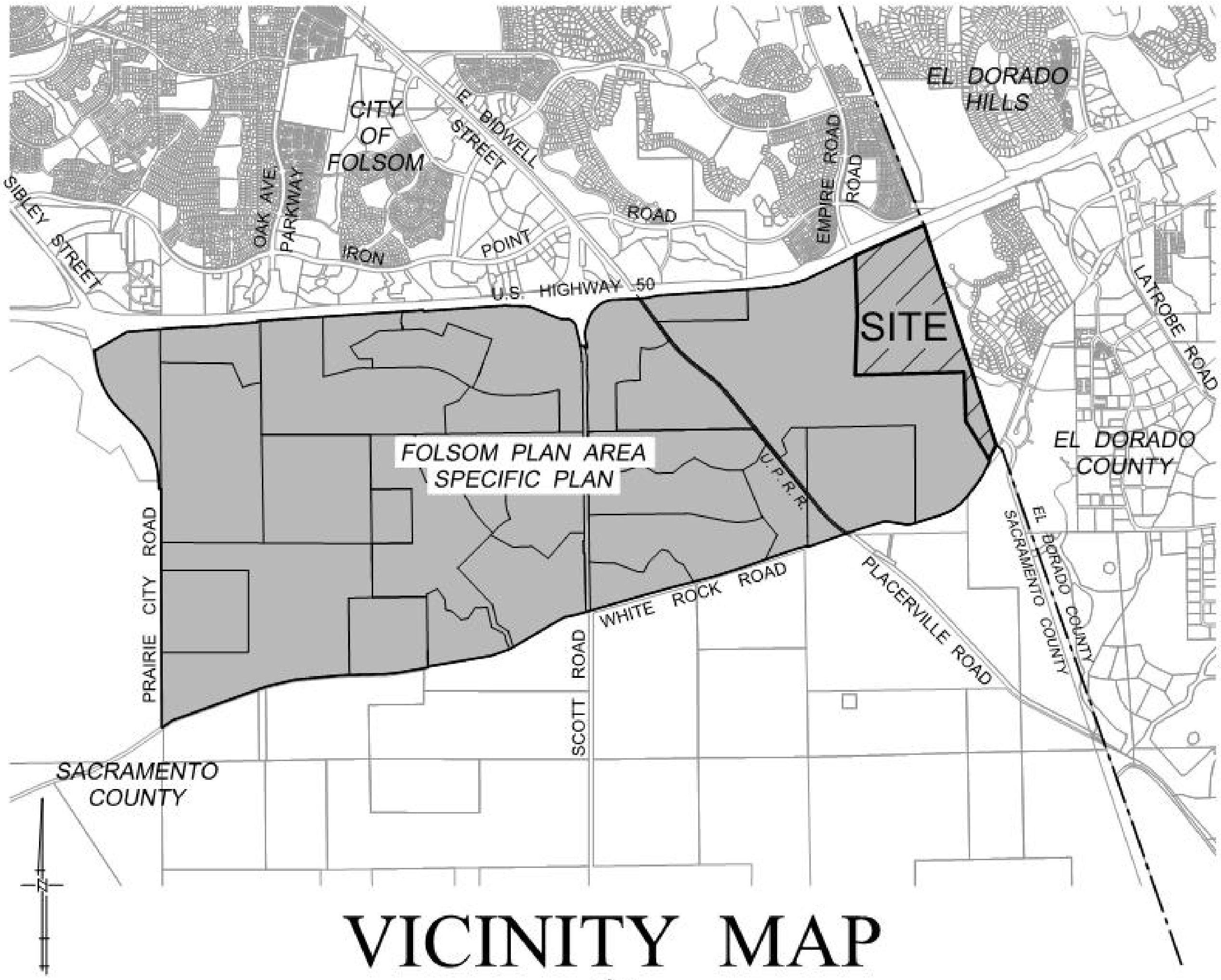
- Approved SP: Normal Demand – 267 ac-ft/yr; Dry Year Demand – 274 ac ft/yr
- SPA: Normal Demand – 253 ac-ft/yr; Dry Year Demand – 259 ac ft/yr

The above results denote a demand decrease between the approved SP and the SPA of 14 ac-ft/yr for normal demand and 15 ac-ft/yr for dry year demand, which is a 5.2% and 5.5% decrease, respectively.

Conclusion

The above noted results indicate a decrease in water demand for both the normal and dry year demands. Therefore, the proposed Folsom Heights SPA water demands are compliant with the Folsom Specific Plan Area SB610 Water Supply Assessment prepared by Tully & Young in June of 2010. As such, this Technical Memo properly summarizes the SPA water demands, and is suitable for submittal to the City of Folsom as a part of the Folsom Heights entitlement package.

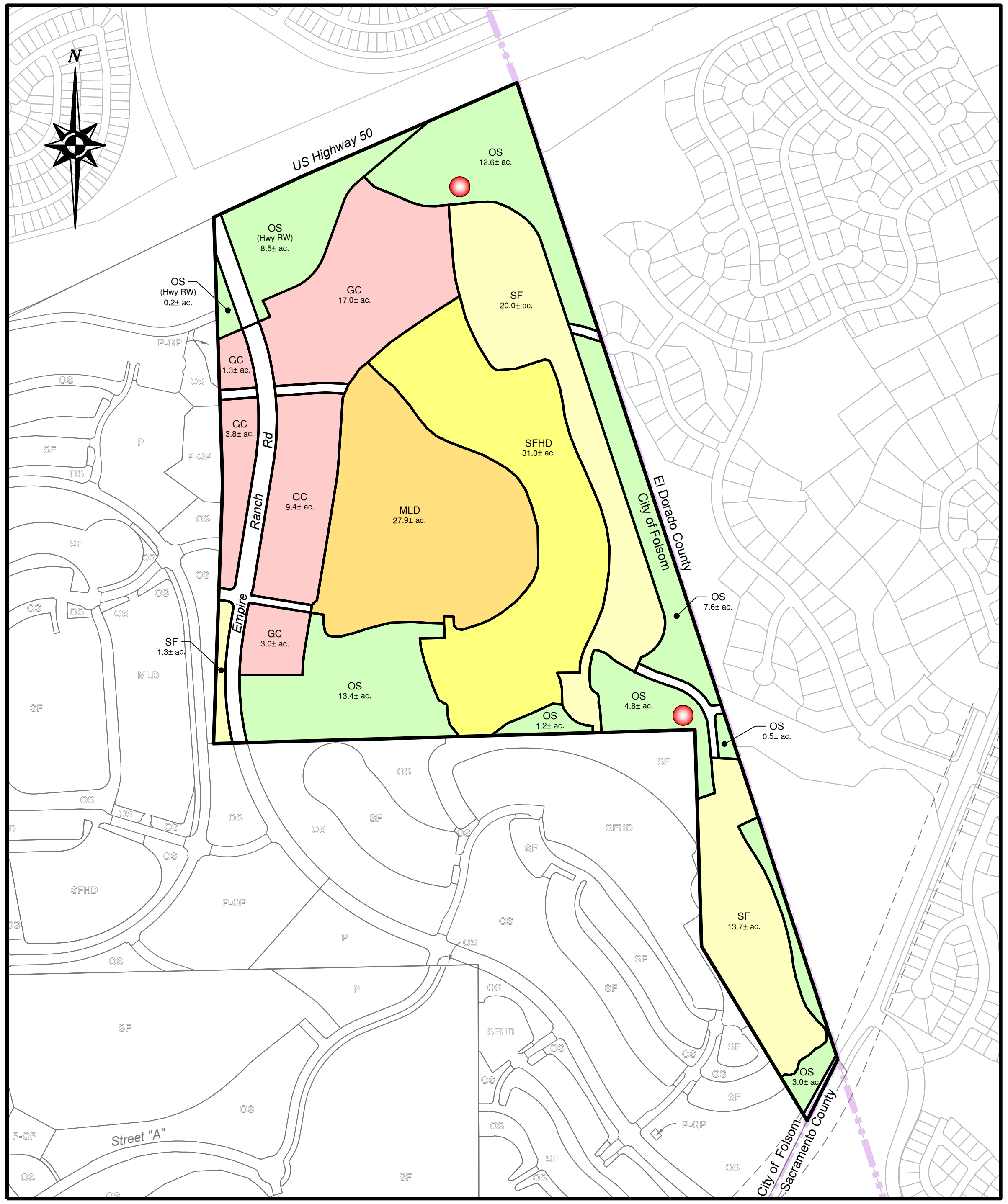
Appendix A



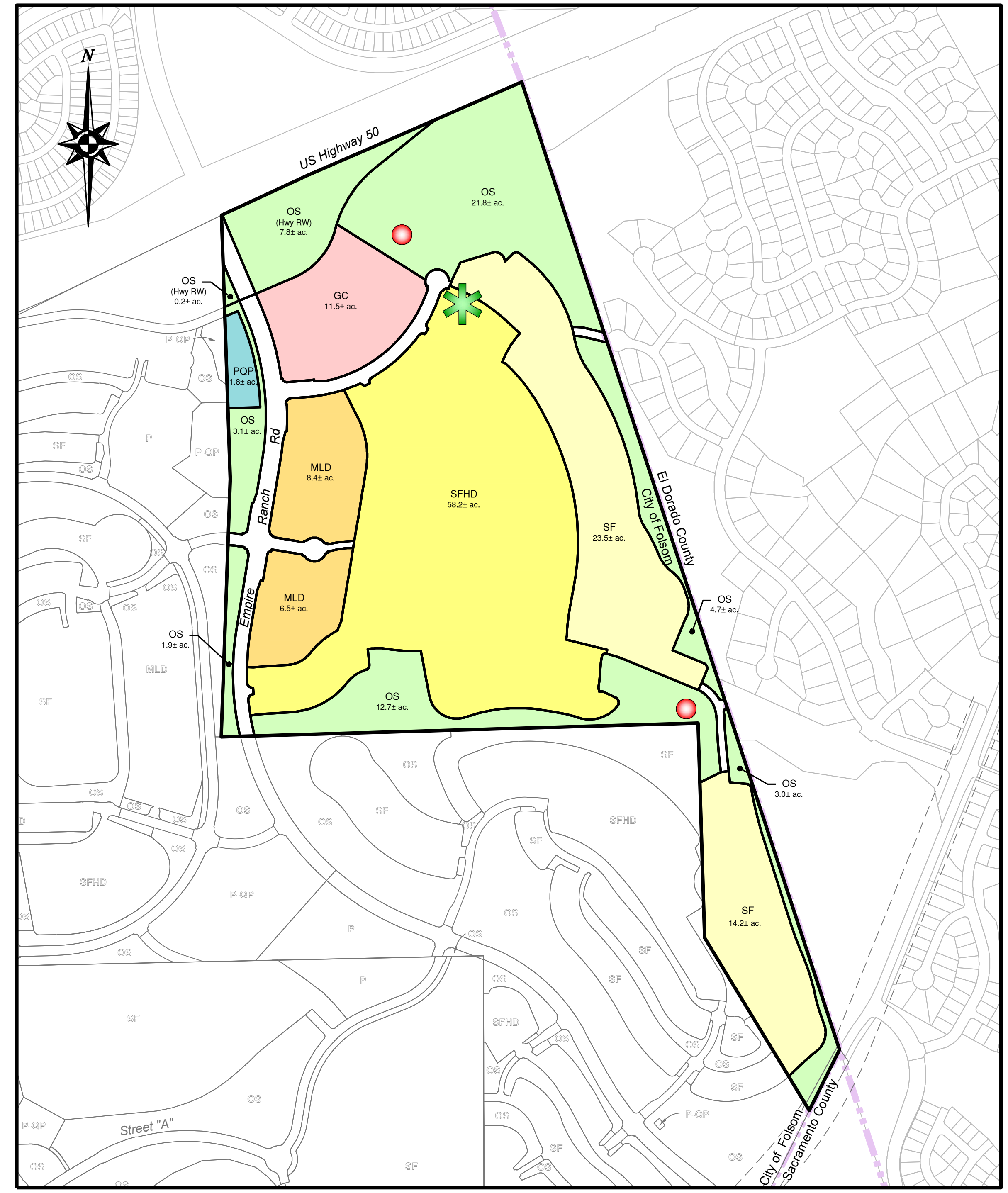
VICINITY MAP

n.t.s.

Appendix B



Existing



Proposed

Combo Basins

1 ac. private amenity; actual location to be determined with Tentative Map and/or Final Map.

Folsom Heights Land Uses

Folsom Heights

City of Folsom *California*
Not to Scale *March 22, 2016*
Job No 7939

MacKay & Somps
ENGINEERS PLANNERS SURVEYORS

Appendix C

Folsom Plan Area
Folsom Heights Specific Plan Amendment
Potable Water Demand Comparison

Folsom Heights Potable Water Demands - Approved Specific Plan Land Uses (Master Plan)						
Land Use Summary						
Land Use	**Gross Area (Acres)**	**Number of Allocated Dwelling Units**	**Normal Indoor Demand Factor (ac-ft/yr)**	**Normal Outdoor Demand Factor (ac-ft/yr)**	**Total Normal Demand (ac-ft/yr)**	**Total Dry-Year Demand (ac-ft/yr)**
Residential						
Single Family (SF)	35.03	106	0.21	0.38	69	72
Single Family High Density (SFHD)	31.02	171	0.21	0.16	70	72
Multi-Family Low Density (MLD)	27.94	253	0.14	0.09	65	66
Residential Total	**93.99**	**530**			**204**	**209**
Commercial						
General Commercial (GC)	34.50		0.42	1.12	59	61
Commercial Total	**34.50**				**59**	**61**
Non-Residential						
Public-Quasi-Public-Water Tank (PQP)	0.00		-	-	0	0
Open Space (OS)	43.14		-	-	0	0
Open Space (Hwy RW)	10.60		-	-	0	0
Roadways	7.49		-	0.37	3	3
Non-Residential Total	**61.23**				**3**	**3**
Project Total	**189.72**	**530**			**267**	**274**

Folsom Heights Potable Water Demands - Specific Plan Amendment Land Uses						
Land Use Summary						
Land Use	**Gross Area (Acres)**	**Number of Allocated Dwelling Units**	**Normal Indoor Demand Factor (ac-ft/yr)**	**Normal Outdoor Demand Factor (ac-ft/yr)**	**Total Normal Demand (ac-ft/yr)**	**Total Dry-Year Demand (ac-ft/yr)**
Residential						
Single Family (SF)	37.72	125	0.21	0.38	82	85
Single Family High Density (SFHD)	58.20	280	0.21	0.16	115	118
Multi-Family Low Density (MLD)	14.91	125	0.14	0.09	32	33
Residential Total	**110.83**	**530**			**229**	**235**
Commercial						
General Commercial (GC)	11.49		0.42	1.12	20	20
Commercial Total	**11.49**				**20**	**20**
Non-Residential						
Public-Quasi-Public-Water Tank (PQP)	1.77		-	-	0	0
Open Space (OS)	47.23		-	-	0	0
Open Space (Hwy RW)	8.87		-	-	0	0
Roadways	9.53		-	0.37	4	4
Non-Residential Total	**67.40**				**4**	**4**
Project Total	**189.72**	**530**			**253**	**259**

Notes:

1) Total water demands have been increased 11.11% pursuant to footnote 56 on page 30 of the Folsom Specific Plan Area Water Supply Assessment prepared by Tully & Young dated June 2010.

2) Outdoor water demands have been increased by 5% in dry years pursuant to the Folsom Specific Plan Area Water Supply Assessment prepared by Tully and Young dated June 2010.

Appendix B

Updated Transportation Impact Study

MRO ENGINEERS

Final
Traffic Impact Analysis

Folsom Heights
Folsom, California

Prepared For
Ascent Environmental, Inc.
&
City of Folsom
Community Development Department

Revised
March 30, 2017

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EXECUTIVE SUMMARY

This study addresses the traffic impacts associated with the proposed Folsom Heights project, which is to be located at the eastern end of the Folsom Plan Area, immediately south of U.S. Highway 50 and adjacent to the Sacramento/El Dorado County line. The proposed project would consist of 530 single-family residential units and approximately 128,500 square feet of general commercial space on a 189.7-acre site.

The study evaluates weekday AM and PM peak hour traffic operations in the vicinity of the project site under the following scenarios:

- Existing Conditions,
- Existing Plus Project Conditions,
- Cumulative No Project Conditions, and
- Cumulative Plus Project Conditions.

At the request of the El Dorado Hills Community Services District and the El Dorado County Community Development Agency, the impacts of the project were evaluated at two intersections and two road segments in the immediate vicinity of the project site. Because the study locations are within El Dorado County, the analysis employed methodologies and significance criteria established by that jurisdiction.

Existing Conditions

- AM Peak Hour: Both study intersections conform to El Dorado County's General Plan Circulation policy (i.e., LOS E or better), as they operate at LOS A or B. The unsignalized intersection of Stonebriar Drive/Prima Drive has insufficient traffic to meet the minimum requirements for installation of a traffic signal. Both study segments of White Rock Road operate at an acceptable LOS C in both directions in the AM peak hour.

- PM Peak Hour: Both study intersections again operate at an acceptable level of service. Stonebriar Drive/Prima Drive fails to meet the minimum requirements of the "Peak Hour" signal warrant. Both segments of White Rock Road again operate at an acceptable LOS C in both directions.

Existing Plus Project Conditions

- The proposed project is expected to generate a net total of 692 AM peak-hour trips, with 282 inbound and 410 outbound. The PM peak hour trip generation is estimated to be 1,157 trips, with 642 inbound and 515 outbound. Almost 16,000 gross/unadjusted daily trips are projected, including internal trips and pass-by/diverted trips.

- The analysis assumes that Easton Valley Parkway will be available to provide vehicular access at intersections along the southerly extension of Empire Ranch Road.

- AM Peak Hour: No change in level of service is projected, and both study intersections will continue to operate at acceptable levels of service (i.e., LOS A or B). The all-way-STOP controlled study intersection of Stonebriar Drive/Prima Drive will fail to meet the minimum requirements of the "Peak Hour" signal warrant. No change in level of service is projected on the study road segments, both of which will operate at an acceptable LOS C in both directions.

- PM Peak Hour: Both study locations will continue to operate at LOS A or B, which is acceptable under El Dorado County policy. Traffic volumes at the intersection of Stonebriar Drive/Prima Drive will again be insufficient to meet the "Peak Hour" signal warrant requirements. No change in level of service is expected on three of the four study segments of White Rock Road; it will operate at an acceptable LOS C. The westbound segment between Stonebriar Drive and Manchester Drive is projected to decline from LOS C to LOS D, but will continue to operate at an acceptable level of service.
- The project-related impacts at all of the study intersections and road segments are less than significant, and no mitigation measures are needed to resolve off-site traffic impacts.
- Given that buildout of the proposed Folsom Heights project will result in no significant impacts and that each of the intermediate phases will generate substantially less traffic than project buildout, construction of each those phases will not result in any additional significant traffic impacts at the study locations.

Cumulative No Project Conditions

- The cumulative conditions analysis reflects the level of development anticipated in the City of Folsom and throughout the Sacramento region through the year 2035. The traffic volume projections employed in this analysis are based on information presented in the environmental documentation for the proposed Russell Ranch project and the Folsom Plan Area Specific Plan (FPASP) annexation project.
- The following study area transportation system improvements are reflected in the future year traffic forecasts used in this analysis:
  - Construction of a new interchange at U.S. Highway 50/Oak Avenue Parkway,
  - Construction of the U.S. Highway 50/Empire Ranch Road interchange, and
  - Widening of White Rock Road to four lanes plus turn lanes from the Sacramento/El Dorado County line to Manchester Drive.
- In addition, the traffic projections reflect completion of all roadway system improvements within the Folsom Plan Area Specific Plan, as well as the regional transportation system improvements identified in the SACOG Metropolitan Transportation Plan/Sustainable Communities Strategy.
- AM Peak Hour: Both study intersections are expected to operate within the County's LOS E standard in the AM peak hour. The projected traffic volumes at Stonebriar Drive/Prima Drive will be insufficient to meet the minimum requirements of the "Peak Hour" signal warrant. With the planned widening of White Rock Road, LOS B is projected for both eastbound study segments, while the westbound segments are expected to operate at LOS A.
- PM Peak Hour: Both intersections will operate at acceptable levels of service (LOS A or B). Again, the traffic volumes at Stonebriar Drive/Prima Drive will not be sufficient to meet the minimum requirements of the "Peak Hour" signal warrant. Both segments of White Rock Road are projected to operate at an acceptable LOS B in both directions under this scenario.

Cumulative + Project Conditions

- AM Peak Hour: Both study intersections are projected to operate acceptably under the El Dorado County LOS E standard. Further, no change in level of service is projected upon addition of the project-generated traffic. The Stonebriar Drive/Prima Drive intersection will continue to have insufficient traffic to meet the "Peak Hour" signal warrant requirements. All of the study segments will continue to operate at acceptable levels of service – LOS B in all cases.

- PM Peak Hour: Both locations will continue to operate at LOS A or B. The "Peak Hour" signal warrant requirements will not be met at Stonebriar Drive/Prima Drive, so continuation of all-way-STOP control is appropriate. Both White Rock Road segments are projected to operate at LOS B in both directions, the same as under Cumulative No Project conditions.
- The project-related impact is less than significant, and no mitigation measures are recommended.
- Because each of the intermediate project phases will generate substantially less traffic than project buildout under cumulative conditions, it is apparent that construction of each those phases will result in no additional significant traffic impacts at the study locations.

Consistency Assessment

- In March 2016, MRO Engineers, Inc., conducted an analysis, which determined that the traffic impacts of the proposed Folsom Heights project (as recently modified) had been adequately addressed in the environmental documentation prepared with respect to the entire Folsom Plan Area annexation project.
- The recently-submitted Vesting Tentative Subdivision Map was reviewed to ensure that no other significant impacts might occur in connection with implementation of the proposed Folsom Heights project, based on the environmental issue areas addressed in the *Environmental Checklist and Addendum - Folsom Plan Area Specific Plan Amendment for the Folsom Heights Area* (Ascent Environmental, April 2016).
- This consistency assessment determined that the traffic impacts associated with the current Folsom Heights proposal are consistent with the findings documented in previous environmental analyses.

INTRODUCTION

This study addresses the traffic impacts associated with the proposed Folsom Heights project, which is to be located at the eastern end of the Folsom Plan Area, immediately south of U.S. Highway 50 and adjacent to the Sacramento/El Dorado County line. On March 10, 2016, MRO Engineers, Inc., completed an analysis of the proposed project, which determined that the traffic impacts of the proposed Folsom Heights project (as recently modified) had been adequately addressed in the environmental documentation prepared with respect to the entire Folsom Plan Area.

The project sponsor has recently submitted to the City of Folsom a Vesting Tentative Subdivision Map illustrating the layout of the proposed project, including the proposed street system and the arrangement of the residential lots. According to that map, the proposed land use has not changed since completion of the March 2016 letter. This report describes the results of an analysis that consists of the following components:

- A traffic impact analysis for the following two intersections identified by the El Dorado Hills Community Services District (CSD):
    - White Rock Road/Stonebriar Drive/Four Seasons Drive, and
    - Stonebriar Drive/Prima Drive.
- A traffic impact analysis for the following two road segments identified by the El Dorado County Community Development Agency staff:
    - White Rock Road between Stonebriar Drive and the Sacramento/El Dorado County line, and
    - White Rock Road between Stonebriar Drive and Manchester Drive.
- A consistency assessment to ensure that the Tentative Map is consistent with previous versions of the project and no significant impacts will result from the layout of the proposed project.

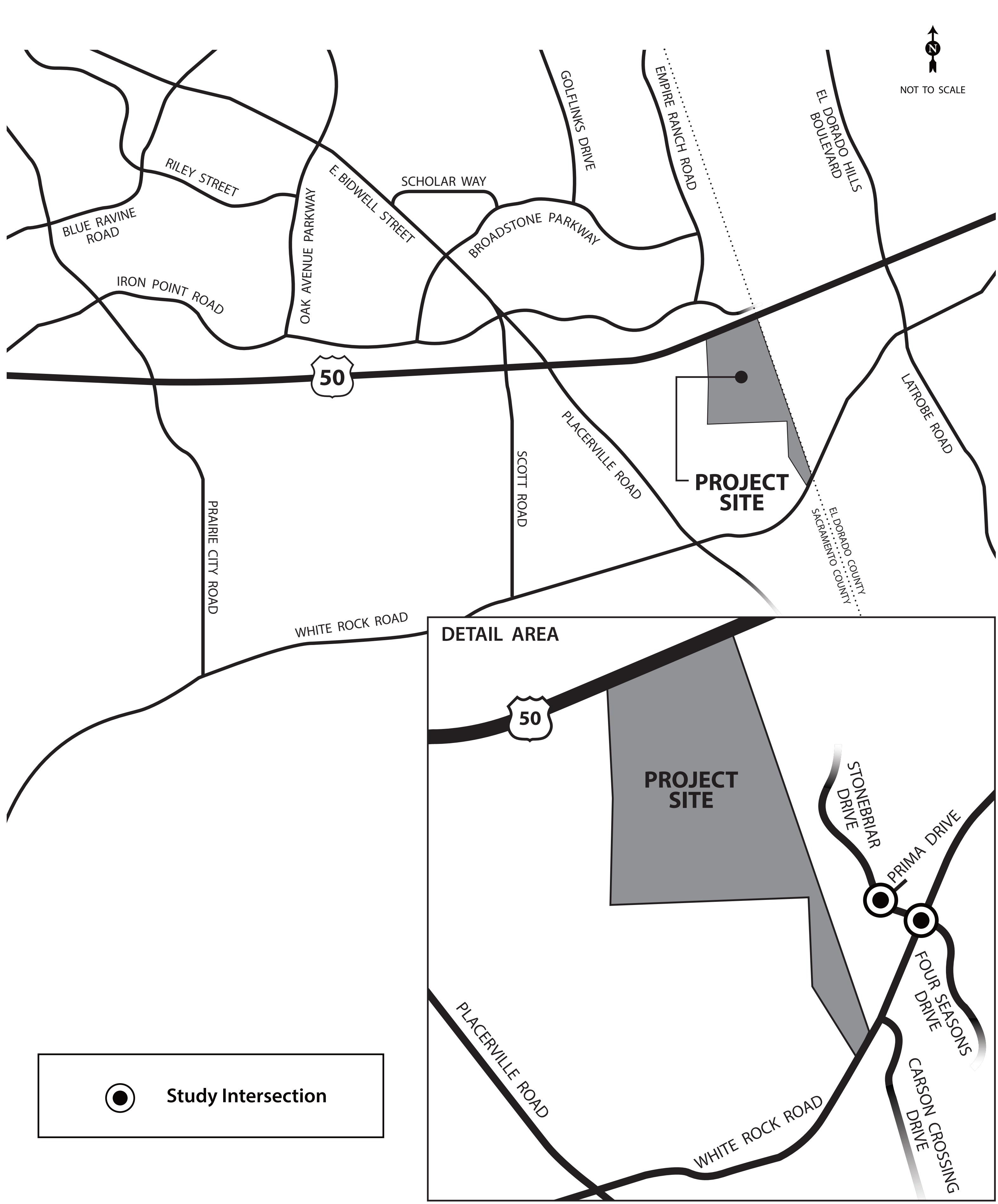
As directed by City of Folsom staff, this study analyzed detailed traffic operations under the following four scenarios:

- Existing Conditions,
- Existing Plus Project Conditions,
- Cumulative No Project Conditions, and
- Cumulative Plus Project Conditions.

This report presents the analysis procedures as well as the findings and recommendations resulting from the evaluation.

Project Description

As illustrated on Figure 1, the proposed project is to be located at the eastern end of the Folsom Plan Area, immediately south of U.S. Highway 50 and adjacent to the Sacramento/El Dorado County line. It extends from U.S. Highway 50 at the north to White Rock Road at the south.



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PROJECT LOCATION

FIGURE 1

Table 1 summarizes the proposed land use plan for the Folsom Heights project. According to information supplied by the project applicant, the proposed project would consist of a total of 530 residential dwelling units (DU) and about 128,500 square feet (SF) of retail space.

Table 1
Folsom Heights Land Use Summary

Land Use		Proposed Plan	
		Acres	DU[1] or SF[2]
Residential	Single Family	31.9	117 DU
	Single-Family High Density	60.8	285 DU
	Multi-Family Low Density[3]	14.9	128 DU
Residential Subtotal		*107.6*	*530 DU*
General Commercial		11.8	128,500 SF[4]
Open Space		52.4	--
Roads/Highways		17.9	--
TOTAL		189.7	--

Notes:
1 Dwelling units.
2 Square feet.
3 May be attached or detached.
4 Assuming floor area ratio (FAR) of 0.25 (i.e., building square footage is 25 percent of total land area).

Vehicular access to and from the proposed project would be primarily provided via three access roads along the future southerly extension of Empire Ranch Road, at the western edge of Folsom Heights. In addition, near the southeasterly corner of the proposed project, access would be possible via the extension of existing Prima Drive from its current terminus at Stonebriar Drive in El Dorado Hills.

Figure 2 presents the proposed project site plan.

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PROJECT SITE PLAN

FIGURE 2

Study Area

Based on a request from the El Dorado Hills Community Services District (CSD) and input from City of Folsom staff, the off-site impacts of the proposed project were evaluated at the following intersections:

- White Rock Road/Stonebriar Drive/Four Seasons Drive, and
- Stonebriar Drive/Prima Drive.

In addition to the intersections listed above, analysis of the following two road segments was requested by the El Dorado County Community Development Agency staff:

- White Rock Road between Stonebriar Drive and the Sacramento/El Dorado County line, and
- White Rock Road between Stonebriar Drive and Manchester Drive.

No other intersections or road segments were addressed in this analysis. As described earlier, on March 10, 2016, MRO Engineers completed an analysis confirming that the traffic impacts of the Folsom Heights project, as currently proposed, were adequately addressed in the environmental documentation prepared with respect to the entire Folsom Plan Area.

Analysis Methodology

In accordance with the analysis procedures generally accepted in the City of Folsom and El Dorado County, the following techniques were employed in conducting this study.

Intersection Operations

Intersection operations are typically described in terms of level of service (LOS), which is reported on a scale from LOS A (representing free-flow conditions) to LOS F (which represents substantial congestion and delay). The level of service designations are based on a quantitative calculation of weighted average vehicular delay at the intersection. The specific approach to estimating delay is based on procedures documented in the *Highway Capacity Manual 2010* (Transportation Research Board, Fifth Edition, December 2010).

Signalized Intersection Analysis

The signalized study intersection of White Rock Road/Stonebriar Drive/Four Seasons Drive was analyzed using the "operational analysis" methodology presented in Chapter 18 of the *Highway Capacity Manual 2010* (*HCM 2010*). This methodology determines signalized intersection level of service by comparing the "average control delay per vehicle" to the thresholds shown in Table 2. Control delay represents the delay directly associated with the traffic signal. For this analysis, the level of service calculations were performed using the *Synchro 8* software package, which implements the intersection analysis procedures documented in the *HCM 2010*.

Table 2 **Level of Service Definitions** **Signalized Intersections**		
Level of Service	Description	Average Control Delay (Seconds/Vehicle)
A	Very low delay. Most vehicles do not stop	≤ 10.0
B	Slight delay. Generally good signal progression.	10.1 – 20.0
C	Increased number of stopped vehicles. Fair signal progression.	20.1 - 35.0
D	Noticeable congestion. Large proportion of vehicles stopped.	35.1 – 55.0
E	Operating conditions at or near capacity. Frequent cycle failure.	55.1 - 80.0
F	Oversaturation. Forced or breakdown flow. Extensive queuing.	> 80.0
Reference: Transportation Research Board, *Highway Capacity Manual 2010*, Fifth Edition, December 2010.		

Unsignalized Intersection Analysis

The analysis of the unsignalized, all-way-STOP study intersection of Stonebriar Drive/Prima Drive was conducted using the appropriate method documented in Chapter 19 of the *HCM 2010*. This method calculates the weighted average control delay for the intersection as a whole and determines level of service based on the criteria set forth in Table 3. For unsignalized intersections, control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. The unsignalized study intersection was also analyzed using the *Synchro 8* software package, which performs level of service calculations in accordance with the *HCM 2010* procedures.

The analysis of the unsignalized study intersection also considered whether it would meet the minimum requirements for installation of a traffic signal. The need for installation of a traffic signal at a given location is judged relative to a defined set of traffic signal "warrants." The warrants applied in the State of California were established by Caltrans, based on essentially similar requirements documented in the *Manual on Uniform Traffic Control Devices* (MUTCD) published by the Federal Highway Administration (FHWA). The current signal warrants are documented in "Part 4 – Highway Traffic Signals" of the *California Manual on Uniform Traffic Control Devices*, dated November 7, 2014. Nine such warrants have been defined, although not all warrants are relevant to each case. This analysis was conducted using Warrant 3, the "Peak Hour" signal warrant.

Table 3 Level of Service Definitions Unsignalized Intersections		
Level of Service	Description	Average Control Delay (Seconds/Vehicle)
A	Little or no conflicting traffic for minor movements.	≤ 10.0
B	Drivers on minor movements begin to notice absence of available gaps.	10.1 – 15.0
C	Drivers on minor movements begin to experience delays waiting for adequate gaps.	15.1 – 25.0
D	Queuing occurs on minor movements due to a reduction in available gaps.	25.1 – 35.0
E	Extensive minor movement queuing due to insufficient gaps.	35.1 – 50.0
F	Insufficient gaps of adequate size to allow minor movement traffic demand to be accommodated.	> 50.0
Reference: Transportation Research Board, *Highway Capacity Manual 2010*, Fifth Edition, December 2010.		

Road Segment Operations

Traffic operations on the two key roadway segments in the vicinity of the proposed project were also evaluated using methodologies presented in the *Highway Capacity Manual 2010*. In the short term, White Rock Road is a two-lane highway with a painted median. With regard to the analysis of cumulative conditions, El Dorado County has recently adopted a Capital Improvement Program (CIP), which includes a project to widen White Rock Road to four lanes plus turn lanes from the Sacramento/El Dorado County line to Manchester Drive.

Two-Lane Highway Analysis

The analysis of two-lane highways is addressed in Chapter 15 of *HCM 2010*. Because these roadways serve many functions, the methodology includes designation of the study segment as being one of three distinct classes, labeled Class I, II, and III. The study segments of White Rock Road have been categorized as being Class III highways, as they serve a "moderately developed area" where "local traffic often mixes with through traffic" and the "density of unsignalized roadside access points is noticeably higher than in a purely rural area." [Ref.: *HCM 2010*, p. 15-3.] For such highways, level of service is defined based on "percent of free-flow speed" (PFFS).

Multilane Highways

Multilane highways are analyzed using the procedures presented in Chapter 14 of *HCM 2010*. Level of service is defined based on density, which is a measure of the proximity of vehicles to each other. While specific density values are defined for LOS A – D, the density values for LOS E and F vary depending upon free-flow speed. Free-flow speed can be either measured or estimated. If estimated, the *HCM 2010* suggests that it be ". . . the posted or statutory speed limit plus 5 mi/h for speed limits 50 mi/h and higher and as the speed limit plus 7 mi/h for speed limits less than 50 mi/h." Given the speed limit of 55 MPH on White Rock Road, the estimated free-flow speed is 60 MPH.

Table 4 summarizes the level of service criteria for two-lane highways and multilane highways.

Table 4
Level of Service Definitions[1]
Two-Lane and Multilane Highways

Level of Service	Two-Lane Highways Percent of Free-Flow Speed	Multilane Highways Density (pc/mi/ln)[2]
A	> 91.7%	≤ 11.0
B	83.4 – 91.7%	11.1 – 18.0
C	75.1 – 83.3%	18.1 – 26.0
D	66.8 – 75.0%	26.1 – 35.0
E	≤ 66.7	35.1 – 40.0[3]
F	Demand Exceeds Capacity	> 40.0[3]

Notes:
1 Reference: Transportation Research Board, *Highway Capacity Manual 2010*, Fifth Edition, December 2010.
2 Passenger cars per mile per lane.
3 Assuming a free-flow speed of 60 MPH.

Evaluation Criteria

Because all of the study locations are in El Dorado County, this analysis addresses the traffic impacts of the proposed Folsom Heights project under the significance criteria of that jurisdiction.

El Dorado County

El Dorado County General Plan Circulation Policy TC-Xd provides level of service standards for County roads. According to that policy, the standard for White Rock Road is LOS E. If the proposed project causes the level of service to degrade from acceptable (i.e., LOS A – E) to unacceptable (i.e., LOS F), then the project's impact is considered significant.

For roads that fall short of meeting the County's LOS standard under "no project" conditions, General Plan Circulation Policy TC-Xe states that a significant impact occurs in the event of:

A. A two percent increase in traffic during the AM peak hour, the PM peak hour, or daily, or

B. The addition of 100 or more daily trips, or

C. The addition of 10 or more trips during the AM peak hour or the PM peak hour.

EXISTING CONDITIONS

This section describes the roadway network serving the proposed project, as well as existing traffic operations at the study intersections and road segments.

Key Roadways

The existing transportation system in the vicinity of the project site is illustrated on Figure 3. Shown there are the traffic lanes on the adjacent roadways, as well as existing facilities for pedestrians and bicyclists. Brief descriptions of the key roadways serving the project site are provided below.

White Rock Road is an east-west, two-lane arterial roadway that generally runs parallel to and south of U.S. Highway 50. In the vicinity of the proposed project, it transitions to a southwest-to-northeast orientation as it passes into El Dorado County to the east and, at Manchester Drive, it widens to a four-lane facility. At Stonebriar Drive, it has dedicated left-turn lanes in each direction, as well as a separate right-turn lane for southwesterly traffic. In the immediate vicinity of the project site, it has bike lanes in both directions, a sidewalk on the southeastern side only, and a 55 MPH speed limit.

Stonebriar Drive is a two-lane residential street that extends to the north from White Rock Road. Although generally not median-divided, a raised median is present between Prima Drive and White Rock Road. It has sidewalks on both sides and, although it does not have formal bike lanes, a wide parking/shoulder lane serves the needs of bicyclists. Stonebriar Drive has a 25 MPH speed limit.

Prima Drive is a relatively short, two-lane residential street within the Stonebriar neighborhood. It currently terminates at Stonebriar Drive, although it will be extended to the west to provide access to the proposed Folsom Heights project. It has a 25 MPH speed limit**.**

Existing Traffic Volumes

On Thursday, December 1, 2016, AM and PM peak-period turning movement counts were conducted by an independent data collection firm at the following study intersections:

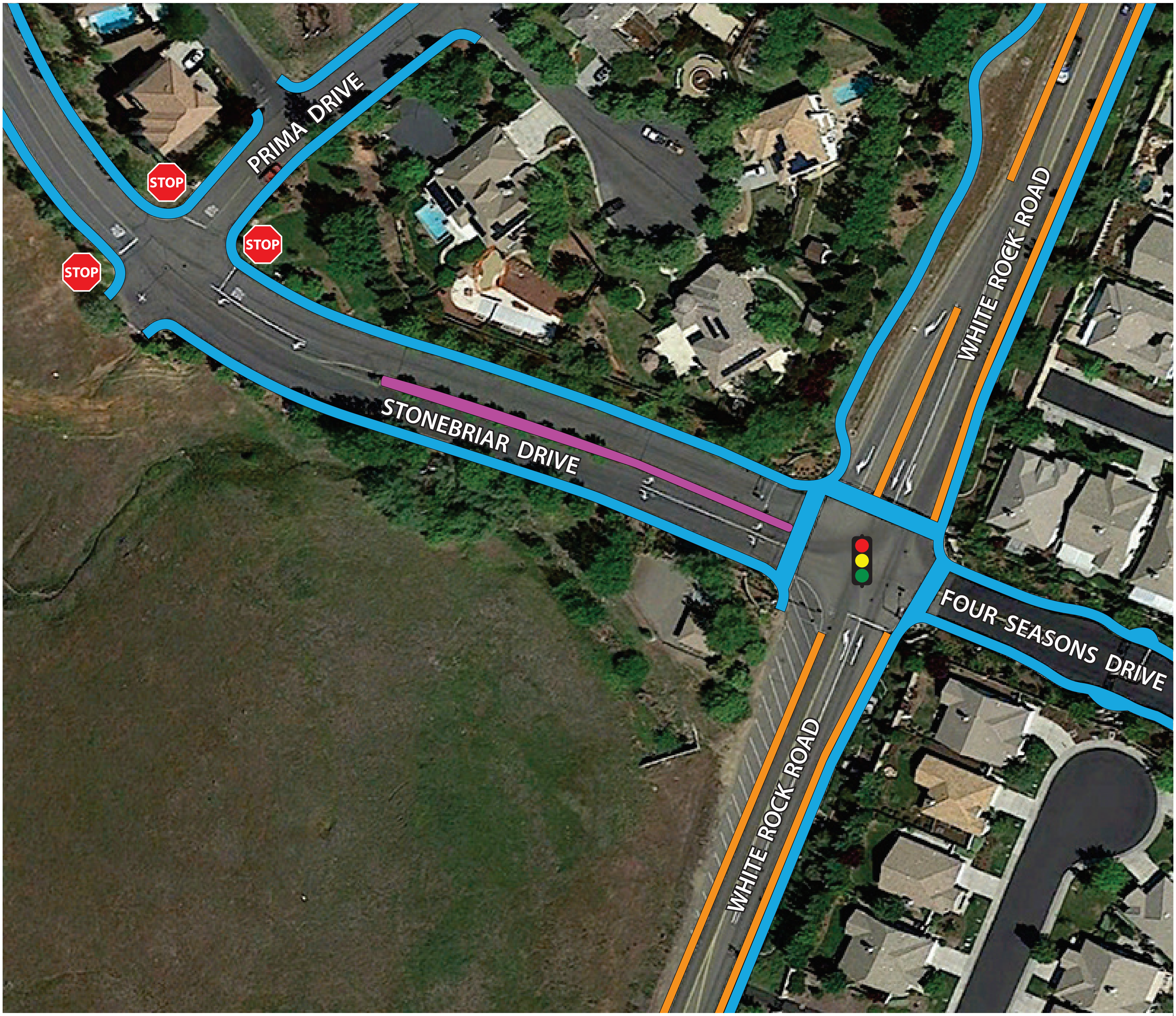
- White Rock Road/Stonebriar Drive/Four Seasons Drive, and
- Stonebriar Drive/Prima Drive.

Those counts were specifically scheduled on a typical school day, to ensure a conservative analysis of traffic operations.

Twenty-four hour vehicle classification counts were performed on the following road segments on the same day:

- White Rock Road between Stonebriar Drive and the Sacramento/El Dorado County line, and
- White Rock Road between Stonebriar Drive and Manchester Drive.

The AM and PM peak-hour traffic volumes and existing intersection lane configurations are shown on Figure 4. Appendix A contains the traffic count data collection sheets.



LEGEND

- SIDEWALK / CROSSWALK
- BIKE LANE
- RAISED MEDIAN
- TRAFFIC SIGNAL
- STOP SIGN

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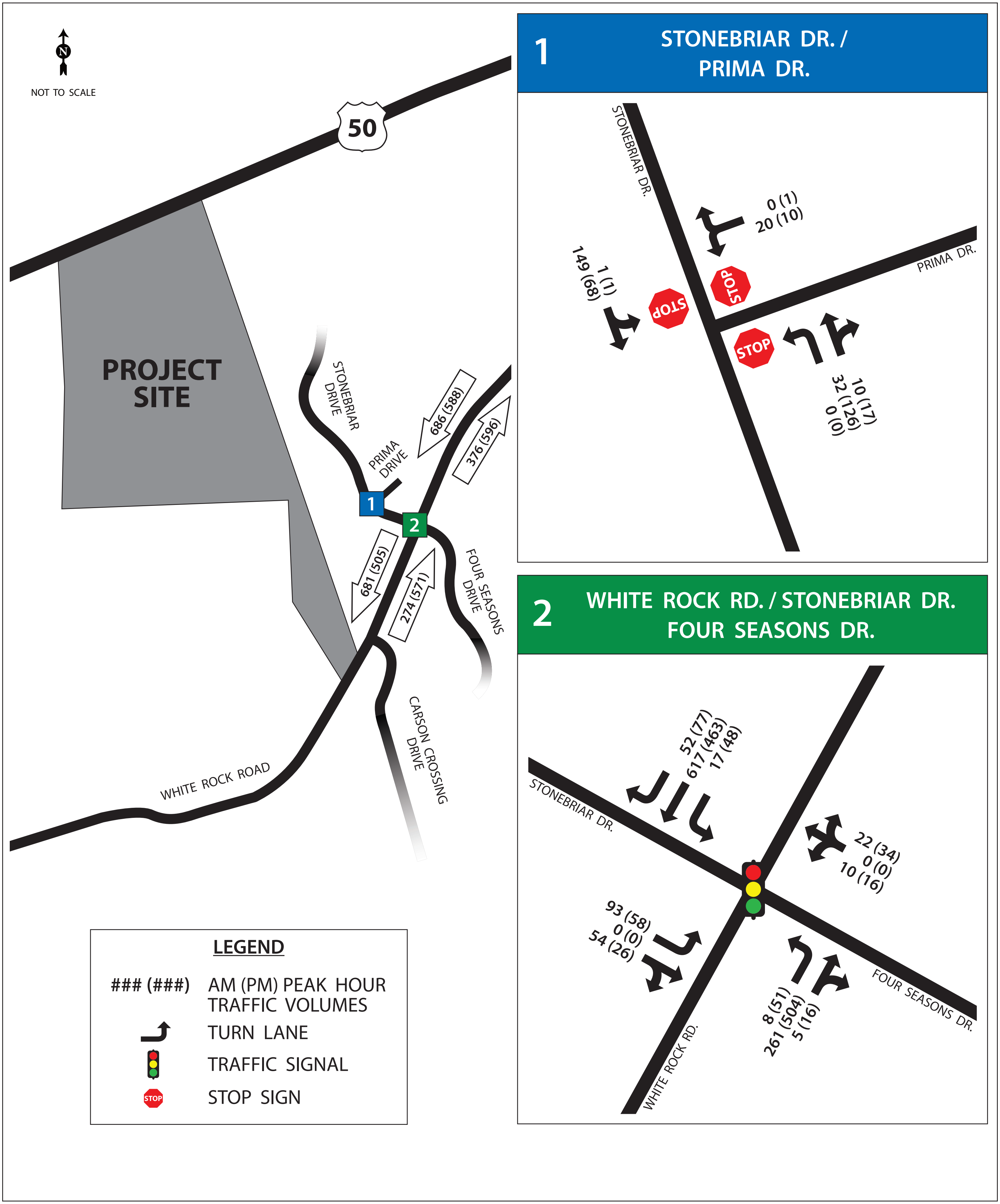
EXISTING TRANSPORTATION SYSTEM

FIGURE 3



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PEAK HOUR TRAFFIC VOLUMES
EXISTING CONDITIONS

FIGURE 4

The AM peak hours at the study intersections occurred during different hourly periods: 7:15 - 8:15 AM at White Rock Road/Stonebriar Drive/Four Seasons Drive and 7:00 - 8:00 AM at Stonebriar Drive/Prima Drive. The PM peak hour occurred between 4:30 and 5:30 PM at White Rock Road/Stonebriar Drive/Four Seasons Drive and from 5:00 until 6:00 PM at Stonebriar Drive/Prima Drive.

Existing Intersection Level of Service

Table 5 summarizes the existing AM and PM peak hour levels of service at the study intersections. Appendix B contains the technical calculation sheets.

<u>*AM Peak Hour*</u>

Both study intersections conform to the County's General Plan Circulation policy (i.e., LOS E or better). White Rock Road/Stonebriar Drive/Four Seasons Drive is at LOS B, while Stonebriar Drive/Prima Drive is currently operating at LOS A. The unsignalized intersection of Stonebriar Drive/Prima Drive has insufficient traffic to meet the minimum requirements for installation of a traffic signal.

<u>*PM Peak Hour*</u>

In the PM peak hour, both study intersections again operate at acceptable levels of service. In fact, the level of service results are identical to the AM peak hour findings, with one location at LOS A and one at LOS B. Stonebriar Drive/Prima Drive again fails to meet the minimum requirements of the "Peak Hour" signal warrant.

Existing Roadway Segment Level of Service

<u>*AM Peak Hour*</u>

Both segments of White Rock Road operate at an acceptable LOS C in both directions in the AM peak hour.

<u>*PM Peak Hour*</u>

In the PM peak hour, both segments of White Rock Road again operate at an acceptable LOS C in both directions.

Table 5
Level of Service Summary[1]
Existing Conditions

Intersection	Traffic Control	AM Peak Hour Delay[2]	AM Peak Hour LOS[3]	AM Peak Hour Meet Signal Warrant?[4]	PM Peak Hour Delay	PM Peak Hour LOS	PM Peak Hour Meet Signal Warrant?
White Rock Rd./Stonebriar Dr./Four Seasons Dr.	Signal	11.7	B	--	12.7	B	--
Stonebriar Dr./Prima Dr.	All-Way STOP	7.7	A	No	7.6	A	No

White Rock Road Segment		AM Peak Hour PFFS[5]	AM Peak Hour LOS	PM Peak Hour PFFS	PM Peak Hour LOS
Sacramento/El Dorado Co. Line to Stonebriar Dr.	EB[6]	82.2%	C	80.6%	C
	WB[7]	79.8%	C	80.8%	C
Stonebriar Drive to Manchester Drive	EB	80.8%	C	79.9%	C
	WB	78.6%	C	78.6%	C

Notes:
1 Reference: Transportation Research Board, *Highway Capacity Manual 2010*, Fifth Edition, December 2010.
2 Average control delay (seconds per vehicle).
3 Level of service.
4 "Peak Hour" signal warrant documented in "Part 4 – Highway Traffic Signals" of the *California Manual on Uniform Traffic Control Devices*, November 7, 2014.
5 Percent of free-flow speed.
6 Eastbound.
7 Westbound.

EXISTING PLUS PROJECT CONDITIONS

This section documents the impacts of the proposed project on traffic operations under Existing Plus Project conditions. To evaluate off-site impacts, the volume of traffic generated by the proposed project was estimated and that traffic was assigned to the nearby street system. The levels of service at the study intersections were then analyzed for the weekday AM and PM peak hours. Based on information provided by the project applicant as well as infrastructure plans for the recently-approved Enclave at Folsom Ranch project, this scenario assumes that key portions of Easton Valley Parkway will be constructed in the short-term time frame, and will be available to provide access to the proposed project's westerly access points.

Project Description

As described above, the proposed Folsom Heights project would be located at the eastern end of the Folsom Plan Area, immediately south of U.S. Highway 50 and adjacent to the Sacramento/El Dorado County line. The proposed project would consist of 530 single-family residential units and approximately 128,500 SF of commercial space on 11.8 acres, as well as a significant amount of open space.

Vehicular access to and from the proposed project would be primarily provided via three access roads along the future southerly extension of Empire Ranch Road, at the western edge of Folsom Heights. In addition, near the southeasterly corner of the proposed project, access would be possible via the extension of existing Prima Drive from its current terminus at Stonebriar Drive in El Dorado Hills.

Trip Generation

The AM and PM peak-hour trip generation estimates for the proposed project were developed using information presented in the *Trip Generation Manual* (Institute of Transportation Engineers, Ninth Edition, 2012).

With regard to the commercial component of the project, the Development Permit Application addressed in the March 10, 2016 analysis indicated that the commercial site would be, ". . . sized and shaped to meet the needs of a grocery-anchored neighborhood center." Consequently, the trip generation estimate is based on the assumption that the retail center will consist of a supermarket combined with various other uses typical in such a center (e.g., retail stores, restaurants, and services such as banks, nail salons, real estate offices, etc.).

The assumed size of the supermarket was based on information presented in the ITE *Trip Generation Manual* and other sources. The ITE document indicates that the average sizes of the supermarkets surveyed in developing the trip rates presented there range from 37,000 SF (for the AM peak-hour rates) to 56,000 SF (for the PM peak-hour rates). In addition, the Food Marketing Institute (FMI) publishes various facts about supermarkets, including the median store size. For 2014, the median supermarket size was 46,000 SF. According to FMI, the median size has been 46,000 - 47,000 SF since 2008. Based on this information, this analysis has assumed that the Folsom Heights supermarket will be 50,000 SF, combined with 78,500 SF of general retail/commercial space.

To ensure that this approach represents a conservative assessment of the modified project's trip generation, Appendix C contains a table summarizing a comparison of the trip generation associated with the plan described above (i.e., a supermarket combined with general retail/commercial) to a land use plan that does not include a supermarket. This analysis revealed that the supermarket-oriented commercial center would generate substantially more trips than a similarly-sized center without a supermarket, in all of the key analysis periods (i.e., daily, AM peak hour, and PM peak hour).

Table 6 summarizes the gross, unadjusted trip generation estimate for the proposed Folsom Heights land use plan, including both residential and commercial components. The proposed project will generate almost 16,000 trips per day. The AM peak-hour trip generation will be just over 700 trips (287 inbound and 415 outbound), while the PM peak-hour total will be slightly more than 1,500 (820 inbound and 693 outbound).

Table 6
Unadjusted Trip Generation Estimate[1]

Land Use	Size	Daily Trips	AM Peak Hour Trips			PM Peak Hour Trips		
			In	Out	Total	In	Out	Total
Single-Family Residential[2]	530 DU	5,050	99	299	398	334	196	530
Supermarket[3]	50,000 SF	5,115	105	65	170	242	232	474
Retail[4]	78,500 SF	5,800	83	51	134	244	265	509
Commercial Subtotal		*10,915*	*188*	*116*	*304*	*486*	*497*	*983*
TOTAL		15,965	287	415	702	820	693	1,513

Notes:
1 Reference: Institute of Transportation Engineers, *Trip Generation Manual*, Ninth Edition, 2012.
2 ITE Land Use Code 210 – Single-Family Detached Housing.
3 ITE Land Use Code 850 – Supermarket.
4 ITE Land Use Code 820 – Shopping Center.

Internal Trips

The combination of residential and commercial land uses within the proposed project creates the potential for a certain amount of internal travel. Internal trips are those that occur entirely within the site (either as vehicular trips or pedestrian/bicycle trips), and result in no additional traffic on the public streets serving the project site. In this case, residents of the project might also be patrons at the proposed retail center. Those residents would be able to travel to and from the retail center without leaving the proposed project. Thus, they would have no adverse impact on the nearby public streets.

Guidance with respect to the magnitude of such internal travel is provided in the National Cooperative Highway Research Program (NCHRP) Report 684, *Enhancing Internal Trip Capture Estimation for*

Mixed-Use Developments (Transportation Research Board, 2011), which presents a detailed procedure for applying internal trip adjustments. That procedure incorporates extensive data with respect to interaction among various land uses within a mixed-use project. Based on the research documented in NCHRP 684, a spreadsheet was developed, which was employed in this analysis to estimate the magnitude of internal travel. The AM and PM peak hour spreadsheets are presented in Appendix D.

<u>*Pass-By and Diverted Trips*</u>

Although an additional portion of the retail trips associated with the proposed project might be "pass-by" or "diverted" trips (i.e., trips that are already on the adjacent or nearby roadways, with the trip to the retail center being an intermediate stop as part of another trip), no adjustment has been applied to account for this activity. This is intended to provide a conservative assessment of project-related traffic impacts.

<u>*Net Trip Generation*</u>

Based on application of the adjustments described above for internal trips, the net trip generation of the proposed Folsom Heights project for the AM and PM peak hours is as follows:

- Weekday AM peak hour: 692 trips (282 inbound and 410 outbound), and
- Weekday PM peak hour: 1,157 trips (642 inbound and 515 outbound).

Table 7 summarizes the derivation of these net trip generation estimates. Note that no adjustments are shown for daily conditions, as NCHRP Report 684 does not address that time period.

Table 7
Adjusted Trip Generation Estimate[1]

Land Use	Size	Daily Trips	AM Peak Hour Trips			PM Peak Hour Trips		
			In	Out	Total	In	Out	Total
TOTAL TRIPS (Unadjusted)[2]		15,965	287	415	702	820	693	1,513
Internal Trips			5	5	10	178	178	356
Pass-by/Diverted Trips			0	0	0	0	0	0
NET ADJUSTED TRIPS[3]			282	410	692	642	515	1,157

Notes:
1 Reference: Institute of Transportation Engineers, *Trip Generation Manual*, Ninth Edition, 2012.
2 See Table 4.
3 NCHRP Report 684 does not address daily conditions, so no adjustment is shown.

Trip Distribution

The geographic distribution of the project-generated residential traffic was largely based on existing traffic patterns in the vicinity of the proposed project. According to the newly-performed traffic counts at White Rock Road/Stonebriar Drive/Four Seasons Drive, most of the project traffic (i.e., 65 percent) is expected to approach from the east along White Rock Road. The remaining 35 percent will approach via either eastbound White Rock Road (7 percent) or Easton Valley Parkway (28 percent), with those proportions dictated by the distribution of residential units within the project. None of the residential traffic is assumed to come from the existing Stonebriar or Four Seasons neighborhoods.

The distribution of the project's retail traffic is based on consideration of the locations of existing competing retail facilities (e.g., El Dorado Hills Town Center and the existing Nugget Market) as well as access considerations. For example, it is considered unlikely that a large number of retail customers would be willing to wind through the residential portions of the project to reach the retail center. This limits the amount of retail traffic that will approach from the east on White Rock Road and enter at Prima Drive, at least until Empire Ranch Road connects to White Rock Road. Therefore, in the short term, the largest percentage of retail traffic (75 percent) is expected to approach via Easton Valley Parkway. Twenty-two percent is expected to be oriented to/from White Rock Road to the east, and three percent will come from the existing Stonebriar and Four Seasons neighborhoods

The trip distribution is illustrated on Figure 5.

Project Traffic Assignment

The peak-hour traffic volumes generated by the proposed project were added to the existing traffic, with the result being the "Existing Plus Project" scenario. Those estimated traffic volumes are shown on Figure 6, which also illustrates the intersection lane configurations.

Intersection Level of Service

Table 8 presents the AM and PM peak hour levels of service at each study intersection under Existing Plus Project conditions. Appendix E contains the technical calculation worksheets.

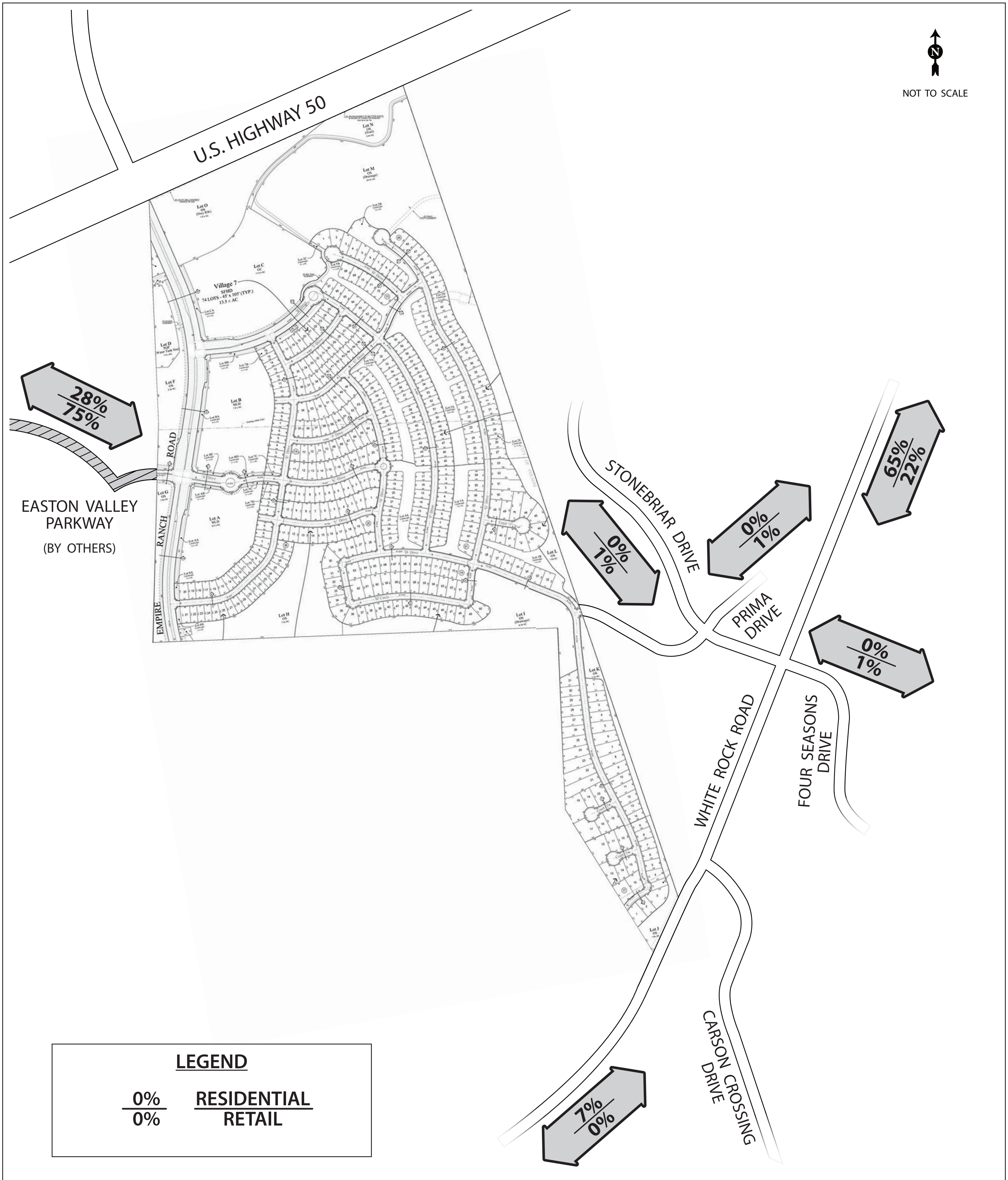
AM Peak Hour

In the AM peak hour, addition of the project-generated traffic will cause the level of delay at the study intersections to increase somewhat, but no change in level of service is projected, and both study intersections will continue to operate at acceptable levels of service (i.e., LOS A or B). The all-way-STOP-controlled study intersection of Stonebriar Drive/Prima Drive will fail to meet the minimum requirements of the "Peak Hour" signal warrant.

Based on these results, the project-related impact is less than significant in the AM peak hour.

PM Peak Hour

In the PM peak hour, the project-related impact is again relatively small. Stonebriar Drive/Prima Drive will decline from LOS A to LOS B, but both study locations will continue to operate at acceptable levels of service. Traffic volumes at the intersection of Stonebriar Drive/Prima Drive will again be insufficient to meet the "Peak Hour" signal warrant requirements.



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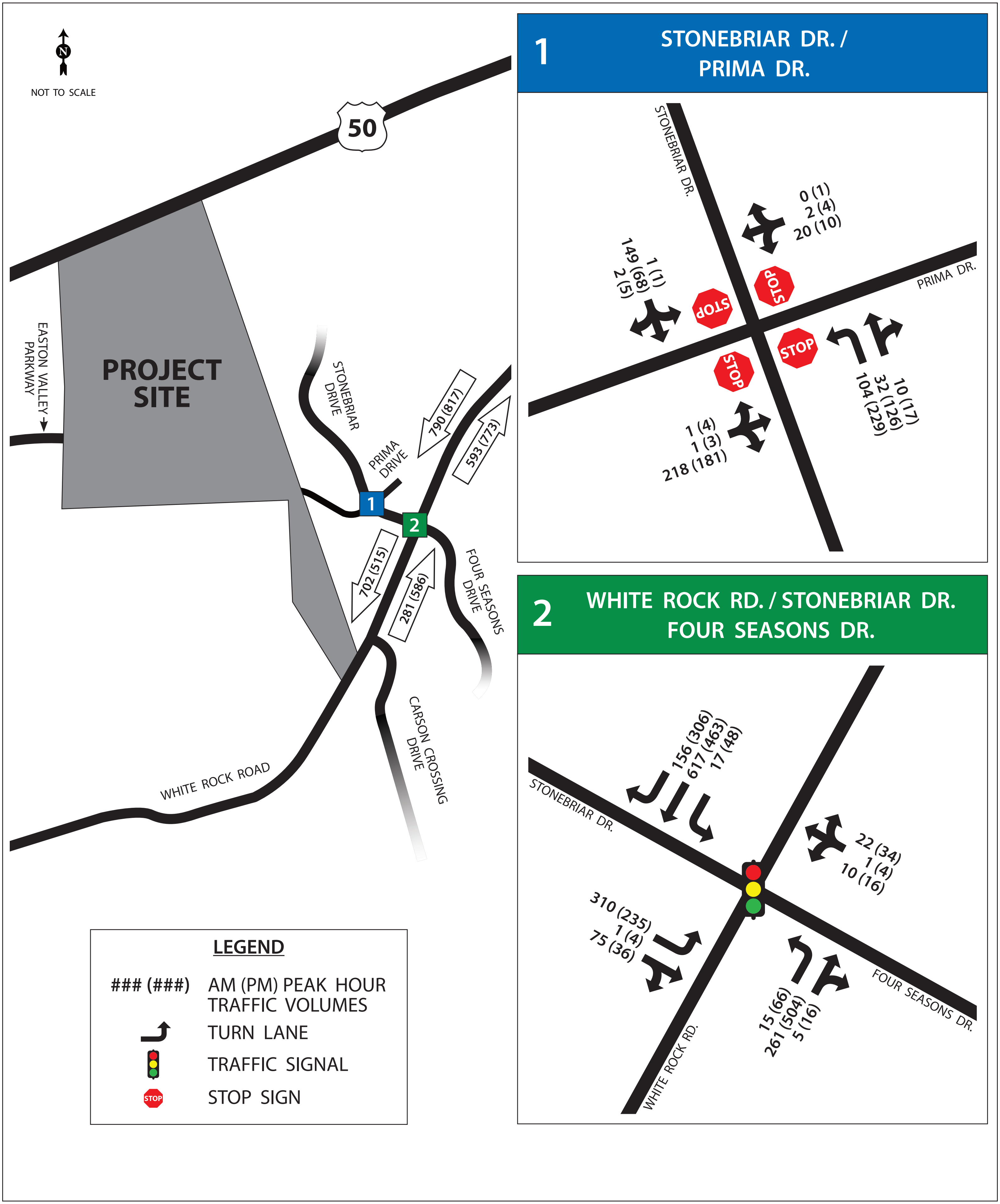
PROJECT TRIP DISTRIBUTION
EXISTING + PROJECT CONDITIONS

FIGURE 5



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PEAK HOUR TRAFFIC VOLUMES
EXISTING + PROJECT CONDITIONS

FIGURE 6

Table 8
Level of Service Summary[1]
Existing Plus Project Conditions

Intersection	Traffic Control	AM Peak Hour – Existing Conditions – Delay[2]	LOS[3]	Meet Signal Warrant?[4]	AM Peak Hour – Existing + Project – Delay	LOS	Meet Signal Warrant?	PM Peak Hour – Existing Conditions – Delay	LOS	Meet Signal Warrant?	PM Peak Hour – Existing + Project – Delay	LOS	Meet Signal Warrant?
White Rock Rd./Stonebriar Dr./Four Seasons Dr.	Signal	11.7	B	--	18.0	B	--	12.7	B	--	18.8	B	--
Stonebriar Dr./Prima Dr.	All-Way STOP	7.7	A	No	9.0	A	No	7.6	A	No	10.1	B	No

White Rock Road Segment		AM Peak Hour – Existing Conditions – PFFS[5]	LOS	AM Peak Hour – Existing + Project – PFFS	LOS	PM Peak Hour – Existing Conditions – PFFS	LOS	PM Peak Hour – Existing + Project – PFFS	LOS
Sacramento/El Dorado Co. Line to Stonebriar Dr.	EB[6]	82.2%	C	81.8%	C	80.6%	C	80.4%	C
	WB[7]	79.8%	C	79.4%	C	80.8%	C	80.5%	C
Stonebriar Drive to Manchester Drive	EB	80.8%	C	76.0%	C	79.9%	C	75.1%	C
	WB	78.6%	C	77.0%	C	78.6%	C	73.1%	D

Notes:
1 Reference: Transportation Research Board, *Highway Capacity Manual 2010*, Fifth Edition, December 2010.
2 Average control delay (seconds per vehicle).
3 Level of service.
4 "Peak Hour" signal warrant from "Part 4 – Highway Traffic Signals" of the *California Manual on Uniform Traffic Control Devices*, November 7, 2014.
5 Percent of free-flow speed.
6 Eastbound.
7 Westbound.

In summary, the project-related impact is projected to be less than significant in the PM peak hour.

Roadway Segment Level of Service

AM Peak Hour

Addition of the project-generated traffic will result in no change in level of service on the study road segments, both of which will operate at an acceptable LOS C in both directions.

PM Peak Hour

In the PM peak hour, no change in level of service is expected on three of the four study segments of White Rock Road, where it will operate at an acceptable LOS C. The westbound segment between Stonebriar Drive and Manchester Drive is projected to decline from LOS C to LOS D, but will continue to operate at an acceptable level of service.

Mitigation Measures

The project-related impact at all of the study locations is less than significant, as described above. Therefore, no off-site mitigation measures are recommended in conjunction with buildout of the proposed Folsom Heights project.

Project Phasing Assessment

The analysis presented above considered the potential traffic impacts of buildout of the proposed Folsom Heights project under Existing Plus Project conditions. Because the project is proposed to be constructed in four phases, an assessment was conducted to determine whether significant traffic impacts might be associated with any of the intermediate project phases.

Table 9 presents estimated AM and PM peak hour trip generation values for each of the proposed project phases.

Table 9
Project Trip Generation Estimate by Phase[1]

Project Phase	AM Peak Hour			PM Peak Hour		
	In	Out	Total	In	Out	Total
Phase 1 – 135 DU	25	76	101	85	50	135
Phase 2 – 266 DU	50	150	200	168	98	266
Phase 1 + 2 Subtotal	***75***	***226***	***301***	***253***	***148***	***401***
Phase 3 – 129 DU	24	73	97	81	48	129
Phase 1 + 2 + 3 Subtotal	***99***	***299***	***398***	***334***	***196***	***530***
Buildout[2]	***282***	***410***	***692***	***642***	***515***	***1,157***

Notes:
[1] Reference: Institute of Transportation Engineers, *Trip Generation Manual*, Ninth Edition, 2012.
[2] See Table 7.

As shown in Table 9, in both peak-hour periods, the estimated volume of project-generated traffic associated with each of the phases and combinations of phases is substantially less than the estimated buildout values analyzed in detail above (i.e., 401 maximum peak hour trips for Phase 1 + 2 compared to a maximum of 1,157 peak hour trips at buildout). Further, preliminary assignments of project-generated traffic to the study locations confirm that the volume of project-related traffic that would travel through the study intersections (i.e., Stonebriar Drive/Prima Drive and White Rock Road/Stonebriar Drive/Four Seasons Drive) upon completion of each phase will be less than the total number of trips that would occur under buildout conditions.

As documented in Table 8, under Existing Plus Project (i.e., buildout) conditions, both study intersections will operate at acceptable levels of service – specifically, LOS A or B. Similarly, the study roadway segments are projected to operate at acceptable levels of service – all LOS C except for one location at LOS D. In comparison, El Dorado County requires operation at LOS E or better, which is a lower standard than the City's. Nonetheless, the project would meet all acceptable operating criteria.

Given that buildout of the proposed Folsom Heights project will result in no significant impacts and that each of the intermediate phases will generate substantially less traffic than project buildout, it is apparent that construction of each those phases will not result in any additional significant traffic impacts at the study locations.

Existing Plus Phase 1 Analysis

To address concerns with respect to the potential impacts of development of Phase 1 of the proposed Folsom Heights project, an additional analysis was performed, based on the trip generation estimates presented in Table 9 and the trip distribution patterns documented on Figure 5. As shown above, Phase 1 will consist of 135 single-family residential units. Vehicular access will initially only be available via Prima Drive and Stonebriar Drive, which would require all 135 units to enter and exit the site at this location until a second alternate access point along Easton Valley Parkway is constructed with the first housing unit of Phase 2. At that time, traffic distribution patterns would shift and reduce trips to study area intersections until full buildout or near full buildout conditions occur. To test the impacts of Phase 1 of the proposed project on the study intersections and roadway segments, the AM and PM peak hour project-generated trips were assigned to the study area roads and level of service calculations were performed. The results of those calculations are presented in Table 10.

Both study intersections will operate at LOS A or B in both peak-hour periods under Existing Plus Phase 1 conditions. Compared to the Existing Plus Project delay values presented in Table 8, the intersection delay values are somewhat lower. Also, the PM peak hour level of service at Stonebriar Drive/Prima Drive will be better (LOS A) under Existing Plus Phase 1 conditions than with full buildout of the project under Existing Plus Project conditions.

All of the roadway segments will operate at LOS C, which is unchanged from Existing Conditions.

In summary, development of Phase 1 of the proposed Folsom Heights project will result in acceptable levels of service at both study intersections and all study roadway segments. No change in peak-hour level of service is projected relative to Existing Conditions. The impact of Phase 1 will be less than significant.

Table 10
Level of Service Summary[1]
Existing Plus Project Phase 1 Conditions

Intersection	Traffic Control	AM Peak Hour						PM Peak Hour					
		Existing Conditions			Existing + Project Phase 1			Existing Conditions			Existing + Project Phase 1		
		Delay[2]	LOS[3]	Meet Signal Warrant?[4]	Delay	LOS	Meet Signal Warrant?	Delay	LOS	Meet Signal Warrant?	Delay	LOS	Meet Signal Warrant?
White Rock Rd./Stonebriar Dr./Four Seasons Dr.	Signal	11.7	B	--	13.1	B	--	12.7	B	--	14.4	B	--
Stonebriar Dr./Prima Dr.	All-Way STOP	7.7	A	No	8.0	A	No	7.6	A	No	8.2	A	No

White Rock Road Segment		AM Peak Hour				PM Peak Hour			
		Existing Conditions		Existing + Project Phase 1		Existing Conditions		Existing + Project Phase 1	
		PFFS[5]	LOS	PFFS	LOS	PFFS	LOS	PFFS	LOS
Sacramento/El Dorado Co. Line to Stonebriar Dr.	EB[6]	82.2%	C	81.8%	C	80.6%	C	80.2%	C
	WB[7]	79.8%	C	79.3%	C	80.8%	C	80.2%	C
Stonebriar Drive to Manchester Drive	EB	80.8%	C	79.8%	C	79.9%	C	79.0%	C
	WB	78.6%	C	78.4%	C	78.6%	C	77.5%	C

Notes:
1 Reference: Transportation Research Board, *Highway Capacity Manual 2010*, Fifth Edition, December 2010.
2 Average control delay (seconds per vehicle).
3 Level of service.
4 “Peak Hour” signal warrant from “Part 4 – Highway Traffic Signals” of the *California Manual on Uniform Traffic Control Devices*, November 7, 2014.
5 Percent of free-flow speed.
6 Eastbound.
7 Westbound.

CUMULATIVE CONDITIONS ANALYSIS

This section describes the results of the analysis of study area traffic operations under cumulative conditions in the weekday AM and PM peak hours. This analysis reflects the level of development anticipated throughout the City of Folsom, including the Folsom Sphere of Influence (SOI) annexation area (i.e., the Folsom Plan Area Specific Plan) and the entire Sacramento/El Dorado County region, through the year 2035. The traffic volume projections were based on a modified version of the SACMET travel demand forecasting model developed and maintained by the Sacramento Area Council of Governments (SACOG).

Analyses are presented for two scenarios: Cumulative No Project conditions and Cumulative Plus Project conditions, reflecting the addition of the traffic generated by the proposed project to the "no project" volumes. To ensure consistency with other recently-conducted traffic analyses in the study area, the future year traffic forecasts employed in this analysis are based on information developed in connection with the traffic analysis for the proposed Russell Ranch project, which is to be located within the Folsom Plan Area Specific Plan (FPASP) boundaries. That traffic analysis, which represents the most recent, comprehensive analysis of traffic in the Folsom Plan Area, is presented in the Draft Environmental Impact Report (DEIR) for the Russell Ranch project. (Reference: Fehr & Peers, *Russell Ranch Final Transportation Impact Study*, December 2014.)

Planned Roadway Improvements

Between now and the year 2035, a variety of major transportation system improvements will be implemented in the study area. These improvements, which are reflected in the future year traffic forecasts used in this analysis, include the following:

- Construction of a new interchange at U.S. Highway 50/Oak Avenue Parkway,
- Construction of the U.S. Highway 50/Empire Ranch Road interchange, and
- Widening of White Rock Road to four lanes plus turn lanes from the Sacramento/El Dorado County line to Manchester Drive.

In addition, the traffic projections reflect completion of all roadway system improvements within the Folsom Plan Area Specific Plan, as well as the regional transportation system improvements identified in the SACOG Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS).

Land Use Forecasts

The year 2035 travel demand forecasts developed for the Russell Ranch project, which serve as the basis for the future traffic volumes used in this analysis, assumed the following land uses in the 3,513-acre FPASP area:

- 1,455 acres of residential uses (10,210 residential dwelling units),
- 511 acres of office/business/professional and retail/commercial uses,
- 310 acres of schools and City parks,
- 1,063 acres of open space, and
- 174 acres of major circulation facilities.

In addition, the year 2035 land use estimates for the Sacramento region included in the SACMET travel demand forecasting model were assumed.

Cumulative (2035) No Project Conditions

The year 2035 traffic volumes for Cumulative No Project conditions were derived from traffic forecasts developed for the Russell Ranch project in the Folsom Plan Area. In particular, the estimated volumes for White Rock Road/Stonebriar Drive/Four Seasons Drive were derived from the traffic forecasts for White Rock Road/Empire Ranch Road, which is located a short distance to the west. Adjustments were applied to the forecasted volumes to eliminate the traffic associated with the Folsom Heights project, in order to create valid “no project” estimates.

Figure 7 illustrates the Cumulative No Project peak hour traffic volumes employed in this study. Also shown are the intersection lane configurations assumed for year 2035 conditions. As described earlier, White Rock Road will have an additional through lane in each direction in 2035.

<u>Intersection Level of Service</u>

Table 11 summarizes the AM and PM peak hour level of service results for Cumulative No Project conditions. The technical calculation worksheets are presented in Appendix F.

AM Peak Hour

Both study intersections are expected to operate within the County’s LOS E standard in the AM peak hour. The signalized study intersection of White Rock Road/Stonebriar Drive/Four Seasons Drive is projected to operate at LOS B, while Stonebriar Drive/Prima Drive will be at LOS A. The projected traffic volumes at Stonebriar Drive/Prima Drive will be insufficient to meet the minimum requirements of the “Peak Hour” signal warrant.

PM Peak Hour

The PM peak hour level of service results are essentially similar to the AM peak hour results. Both intersections will operate at acceptable levels of service (LOS A or B). Again, the traffic volumes at Stonebriar Drive/Prima Drive will not be sufficient to meet the minimum requirements of the “Peak Hour” signal warrant.

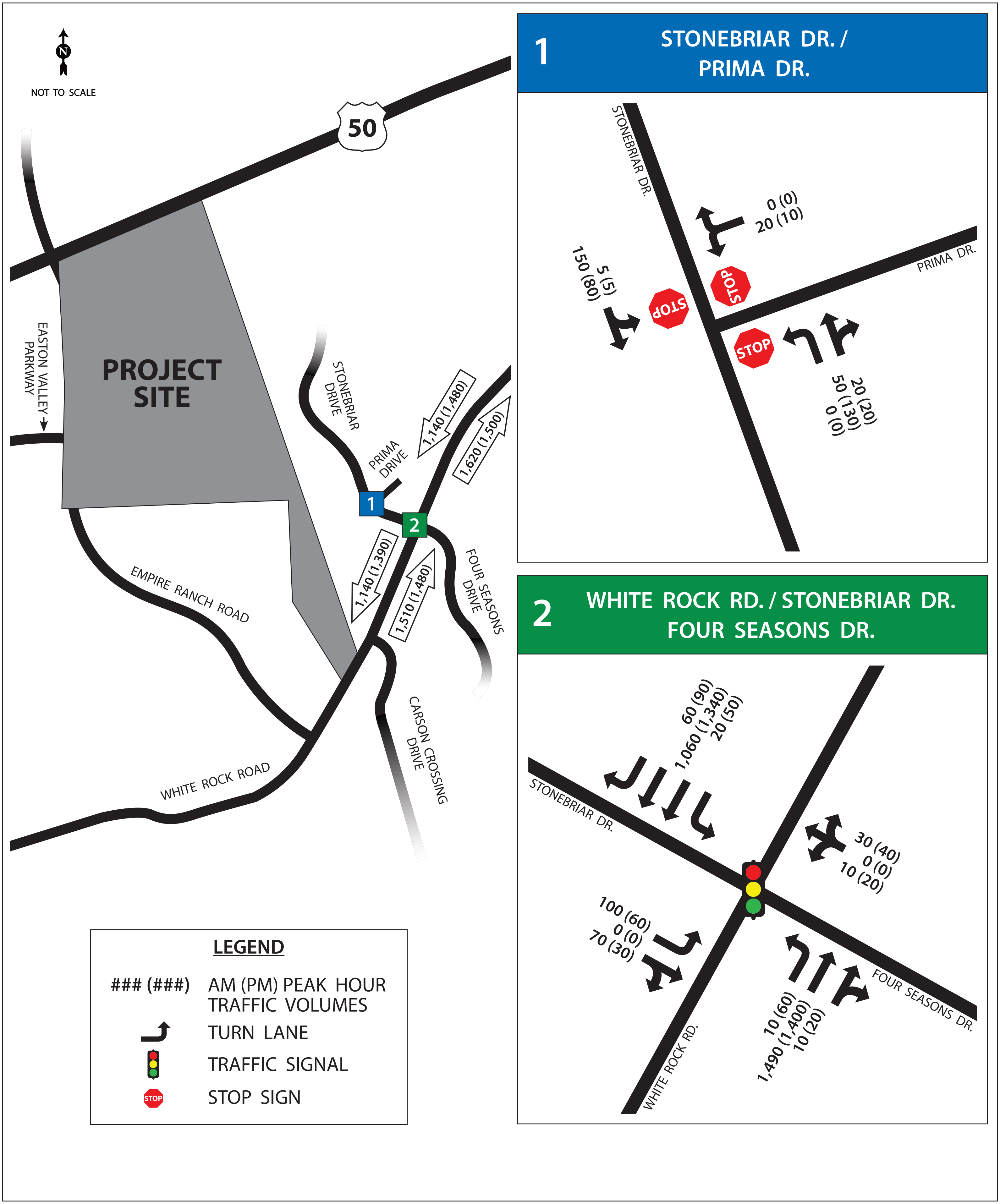
<u>Roadway Segment Level of Service</u>

AM Peak Hour

With the planned widening of White Rock Road, LOS B is projected for both eastbound study segments, while the westbound segments are expected to operate at LOS A.

PM Peak Hour

Both segments of White Rock Road are projected to operate at an acceptable LOS B in both directions under this scenario.



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PEAK HOUR TRAFFIC VOLUMES
CUMULATIVE NO PROJECT CONDITIONS

FIGURE 7

Table 11 Level of Service Summary[1] Cumulative No Project Conditions							
		AM Peak Hour			PM Peak Hour		
Intersection	Traffic Control	Delay[2]	LOS[3]	Meet Signal Warrant?[4]	Delay	LOS	Meet Signal Warrant?
White Rock Rd./Stonebriar Dr./Four Seasons Dr.	Signal	11.5	B	--	13.4	B	--
Stonebriar Dr./Prima Dr.	All-Way STOP	7.8	A	No	7.7	A	No

White Rock Road Segment		AM Peak Hour		PM Peak Hour	
		Density[5]	LOS	Density	LOS
Sacramento/El Dorado Co. Line to Stonebriar Dr.	EB[6]	16.3	B	14.1	B
	WB[7]	10.6	A	13.8	B
Stonebriar Drive to Manchester Drive	EB	16.7	B	15.1	B
	WB	10.6	A	13.7	B

Notes:
1 Reference: Transportation Research Board, *Highway Capacity Manual 2010*, Fifth Edition, December 2010.
2 Average control delay (seconds per vehicle).
3 Level of service.
4 "Peak Hour" signal warrant documented in "Part 4 – Highway Traffic Signals" of the *California Manual on Uniform Traffic Control Devices*, November 7, 2014.
5 Passenger cars per mile per lane.
6 Eastbound.
7 Westbound.

Cumulative (2035) Plus Project Conditions

The following sections address the effects of adding the project-generated traffic to the Cumulative No Project volumes derived above.

Project Trip Generation

As described earlier, the proposed project is expected to generate 692 AM peak hour trips (282 inbound and 410 outbound) and 1,157 PM peak hour trips (642 inbound and 515 outbound).

Project Trip Distribution

Because of the assumed buildout of the Folsom Plan Area Specific Plan land uses, the long-term geographic distribution of the project-generated traffic is expected to be substantially different from the short-term distribution described earlier. Specifically, based on the traffic volume forecasts presented in the Russell Ranch analysis, it was determined that 35 percent of the project-generated trips would approach and depart via Empire Ranch Road to the north; these trips would generally be oriented to and from U.S. Highway 50 and locations within Folsom north of the freeway. An additional 5 percent would be oriented to/from Easton Valley Parkway and about 35 percent of the project's trips would be oriented to and from the west by way of White Rock Road. Of the remaining 25 percent, all of the residential trips would travel to and from the east on White Rock Road. A small portion of the retail trips would begin or end in either the Stonebriar neighborhood or the Four Seasons neighborhood, so that 22 percent would be oriented to/from the east on White Rock Road. Figure 8 illustrates the project trip distribution for cumulative conditions.

Intersection Traffic Volumes

Using the project trip generation and trip distribution information, the project-related trips were assigned to the future road network and added to the Cumulative No Project volumes. The Cumulative Plus Project traffic volumes for the weekday AM and PM peak hours are illustrated on Figure 9.

Intersection Level of Service

Table 12 presents the results of the level of service analysis for the Cumulative Plus Project scenario. Appendix G contains the level of service calculation worksheets.

AM Peak Hour

As under Cumulative No Project conditions, both study intersections are projected to operate acceptably under the El Dorado County LOS E standard. Further, no change in level of service is projected upon addition of the project-generated traffic; LOS A or B is projected. The Stonebriar Drive/Prima Drive intersection will have insufficient traffic to meet the "Peak Hour" signal warrant requirements. In summary, the project's impact is less than significant in the AM peak hour.

PM Peak Hour

Addition of the project-generated traffic in the weekday PM peak hour would result in relatively small increases in intersection delay at the study intersections. Both locations will continue to operate at LOS A or B. The "Peak Hour" signal warrant requirements will not be met at Stonebriar Drive/Prima Drive, so continuation of all-way-STOP control is appropriate. As in the AM peak hour, the project's impact is considered less than significant.

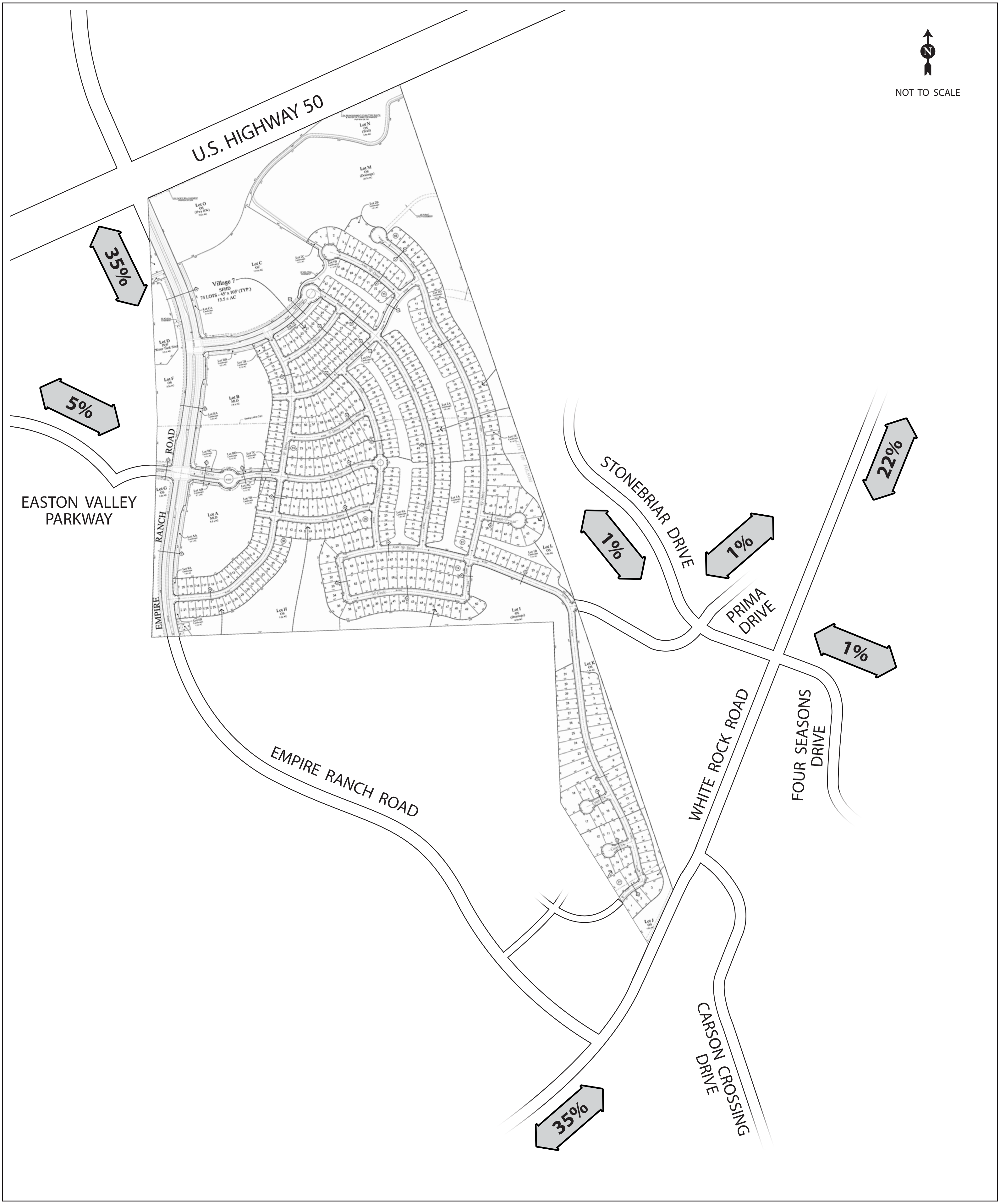
Roadway Segment Level of Service

AM Peak Hour

Although both westbound segments will decline from LOS A to LOS B, all of the study segments will continue to operate at acceptable levels of service – LOS B in all cases. Thus, the project's impact is less than significant.

PM Peak Hour

Both segments are projected to operate at LOS B in both directions, the same as under Cumulative No Project conditions. The project's impact is again considered less than significant.



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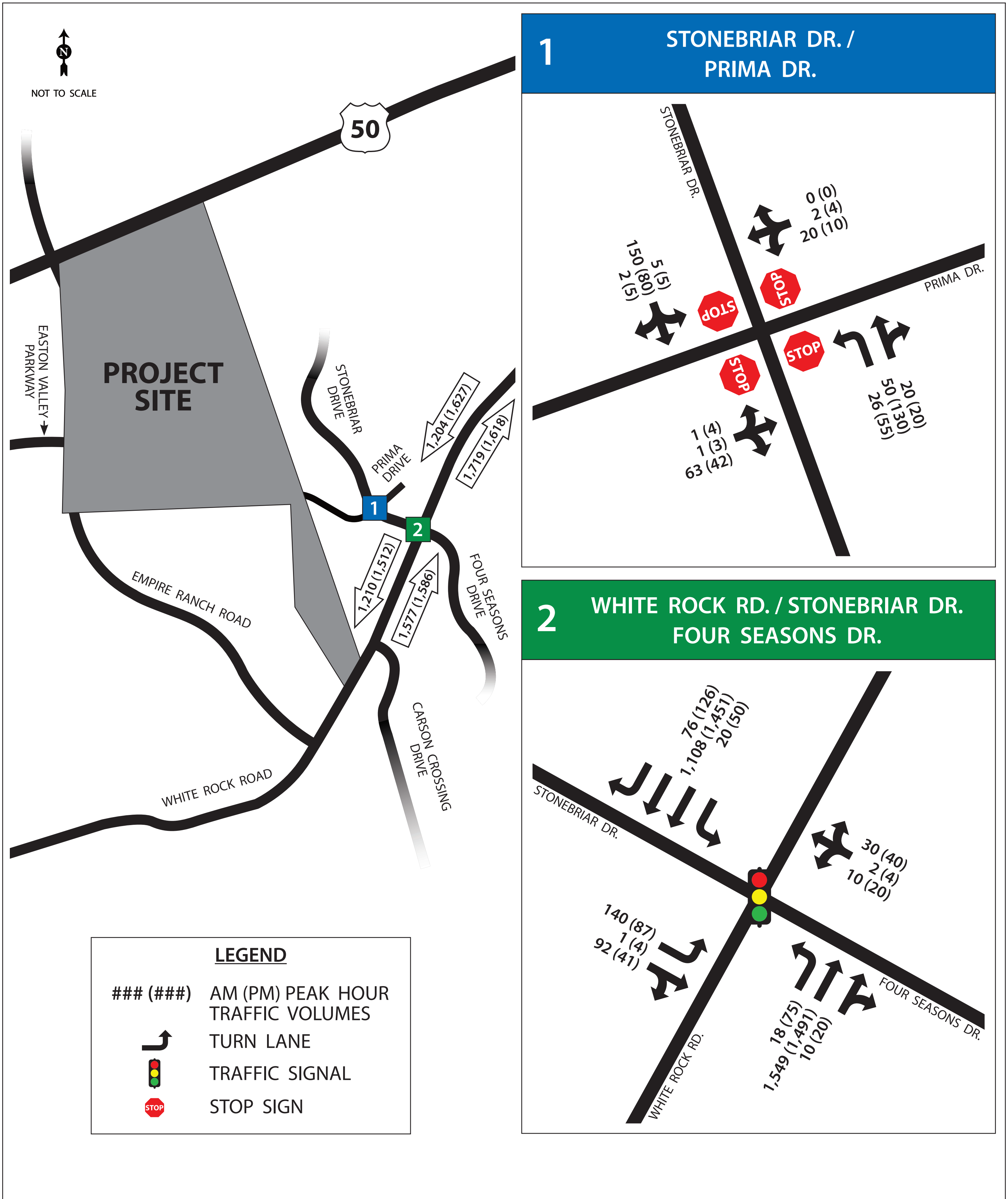
PROJECT TRIP DISTRIBUTION
CUMULATIVE CONDITIONS

FIGURE 8



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PEAK HOUR TRAFFIC VOLUMES
CUMULATIVE + PROJECT CONDITIONS

FIGURE 9

Table 12
Level of Service Summary[1]
Cumulative Plus Project Conditions

Intersection	Traffic Control	AM Peak Hour: Cumulative No Project Conditions: Delay[2]	LOS[3]	Meet Signal Warrant?[4]	AM Peak Hour: Cumulative + Project Conditions: Delay	LOS	Meet Signal Warrant?	PM Peak Hour: Cumulative No Project Conditions: Delay	LOS	Meet Signal Warrant?	PM Peak Hour: Cumulative + Project Conditions: Delay	LOS	Meet Signal Warrant?
White Rock Rd./Stonebriar Dr./Four Seasons Dr.	Signal	11.5	B	--	14.0	B	--	13.4	B	--	16.7	B	--
Stonebriar Dr./Prima Dr.	All-Way STOP	7.8	A	No	8.1	A	No	7.7	A	No	8.2	A	No

White Rock Road Segment		AM Peak Hour: Cumulative No Project Conditions: Density[5]	LOS	AM Peak Hour: Cumulative + Project Conditions: Density	LOS	PM Peak Hour: Cumulative No Project Conditions: Density	LOS	PM Peak Hour: Cumulative + Project Conditions: Density	LOS
Sacramento/El Dorado Co. Line to Stonebriar Dr.	EB[6]	16.3	B	17.0	B	14.1	B	15.1	B
	WB[7]	10.6	A	11.3	B	13.8	B	14.9	B
Stonebriar Drive to Manchester Drive	EB	16.7	B	17.7	B	15.1	B	16.3	B
	WB	10.6	A	11.2	B	13.7	B	15.1	B

Notes:
1 Reference: Transportation Research Board, *Highway Capacity Manual 2010*, Fifth Edition, December 2010.
2 Average control delay (seconds per vehicle).
3 Level of service.
4 "Peak Hour" signal warrant from "Part 4 – Highway Traffic Signals" of the *California Manual on Uniform Traffic Control Devices*, November 7, 2014.
5 Passenger cars per mile per lane.
6 Eastbound.
7 Westbound.

<u>*Mitigation Measures*</u>

In both peak-hour periods, the Folsom Heights project is expected to result in less-than-significant impacts to traffic operations at the study intersections and roadway segments under cumulative conditions. Therefore, no off-site mitigation measures are recommended.

Project Phasing Assessment

The analysis presented above considered the potential traffic impacts of buildout of the proposed Folsom Heights project under Cumulative Plus Project (i.e., buildout) conditions. Because the project is proposed to be constructed in four phases, an assessment was conducted to determine whether significant traffic impacts might be associated with any of the intermediate project phases under cumulative conditions.

Table 9 (p. 21) presented estimated AM and PM peak hour trip generation values for each of the proposed project phases. As shown there, in both peak-hour periods, the estimated volume of project-generated traffic associated with each of the phases and combinations of phases is substantially less than the estimated buildout values analyzed in detail above. Further, preliminary assignments of project-generated traffic to the study locations confirm that the volume of project-related traffic upon completion of each phase will be less than the buildout values.

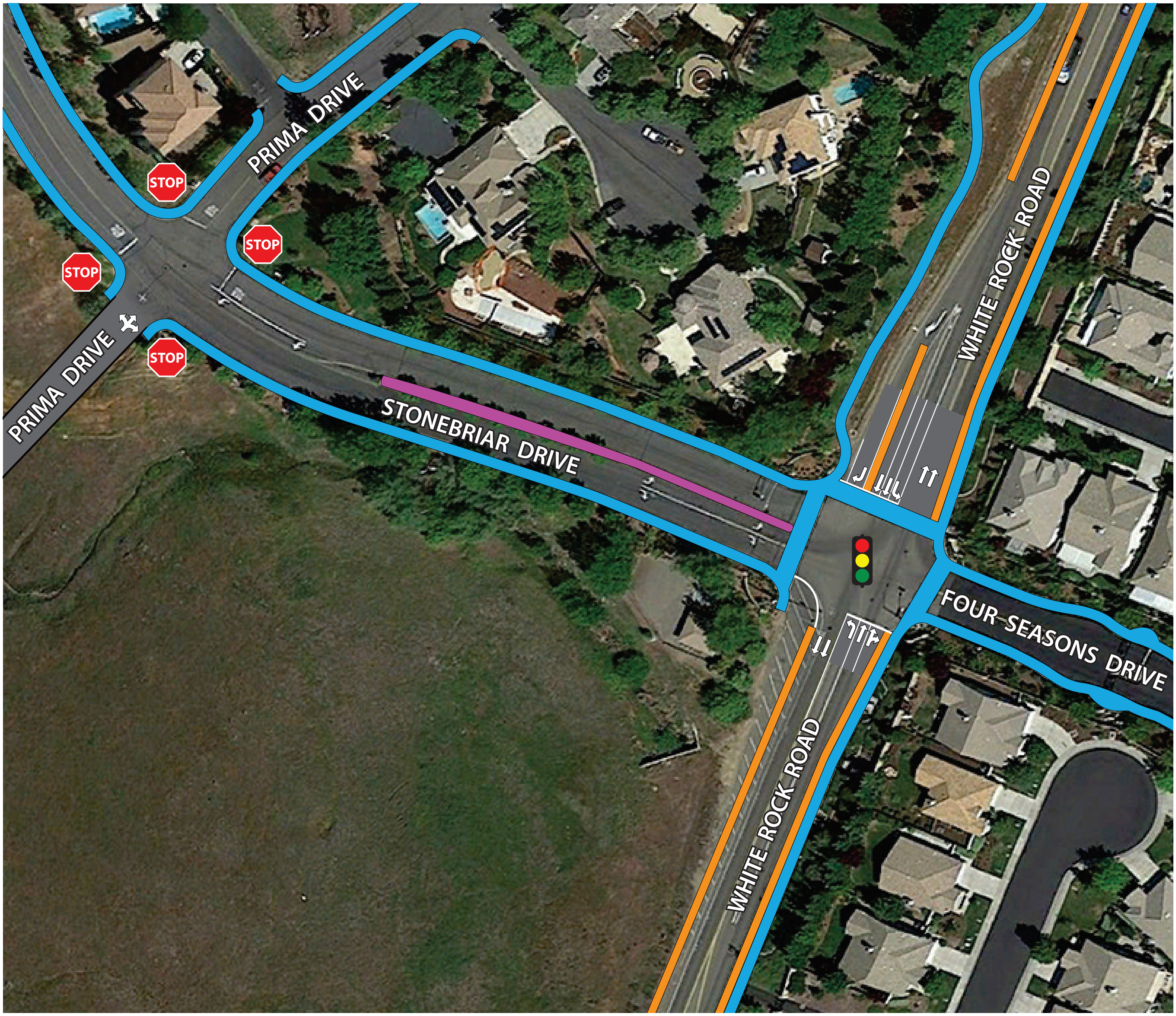
As documented in Table 12, under Cumulative Plus Project (i.e., buildout) conditions, both study intersections will operate at acceptable levels of service – specifically, LOS A or B. Similarly, the study roadway segments are projected to operate at LOS A or B. In comparison, El Dorado County requires operation at LOS E or better.

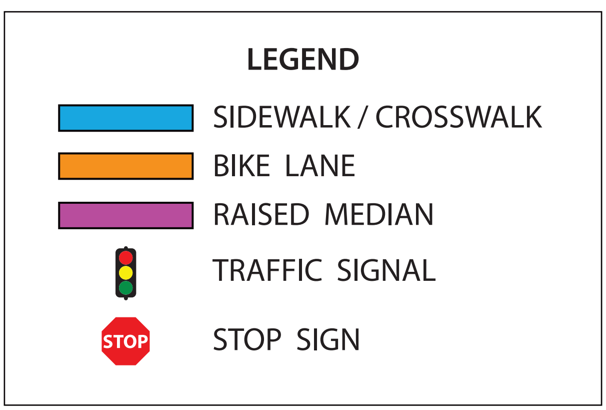
Given that buildout of the proposed Folsom Heights project will result in no significant impacts under cumulative conditions and that each of the intermediate phases will generate substantially less traffic than project buildout, construction of each those phases will not result in any additional significant traffic impacts at the study locations.

Specifically with respect to Phase 1 of the proposed project, Table 10 above showed that development of that project phase alone would have a relatively small effect on traffic operations at the study intersections and road segments under Existing Plus Phase 1 conditions, and would result in a less than significant impact. Similar results are anticipated for cumulative conditions.

Future Transportation System

Figure 10 illustrates the future transportation system in the study area, including the extension of Prima Drive to serve the proposed project and the additional through lane in each direction on White Rock Road.





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Auburn, CA 95603
Phone (916) 783-3838
www.mroengineers.com

FUTURE TRANSPORTATION SYSTEM

FIGURE 10

CONSISTENCY ASSESSMENT

Although some of the project's acreage values for individual land uses have changed slightly, the total number of residential units and the commercial square footage are identical to the project that was evaluated in the MRO Engineers, Inc., letter report dated March 10, 2016. That analysis determined that the traffic impacts of the proposed Folsom Heights project (as recently modified) had been adequately addressed in the environmental documentation prepared with respect to the entire Folsom Plan Area annexation project. Specifically, the analysis determined that, in all three key time periods (i.e., daily, AM peak hour, and PM peak hour), the currently-proposed land use plan will generate less traffic than the Folsom Heights land use plan addressed in the approved environmental documentation for the Folsom Plan Area annexation. Further, the analysis determined that projected cumulative conditions traffic operating conditions have not changed substantially since the Folsom Plan Area environmental document was certified.

Therefore, the March 2016 analysis concluded that the findings presented in the traffic analysis for the Folsom Plan Area annexation process remained valid for the modified version of the Folsom Heights project, and that no further traffic analysis is necessary for the project.

The recently-submitted Vesting Tentative Subdivision Map was reviewed to ensure that no other significant impacts might occur in connection with implementation of the proposed Folsom Heights project. This assessment was guided by the environmental issue areas addressed in the *Environmental Checklist and Addendum - Folsom Plan Area Specific Plan Amendment for the Folsom Heights Area* (Ascent Environmental, April 2016), as summarized below.

- Would the project conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, including all modes of travel?

  This issue was addressed in the April 2016 *Environmental Checklist and Addendum*, which found that previously-adopted environmental analyses fully addressed this subject. The currently-proposed project is unchanged from the project addressed at that time. Thus, the current project is consistent with the April 2016 findings.

- Would the project conflict with an applicable congestion management program, including level of service standards, travel demand measures, or other standards?

  This issue was addressed in the April 2016 *Environmental Checklist and Addendum* and the March 2016 MRO Engineers analysis. Because the currently-proposed project is unchanged from the project addressed at that time, the current project is consistent with the March and April 2016 findings.

- Would the project result in a change in air traffic patterns?

  This issue was considered in the April 2016 *Environmental Checklist and Addendum*, which found that the project would have no impact. The currently-proposed project is unchanged from the project addressed at that time. Thus, the current project is consistent with the April 2016 findings.

- Would the project substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections)?

  The April 2016 *Environmental Checklist and Addendum* found that the project would have no impact. A review of the recently-submitted Vesting Tentative Subdivision Map was conducted, which indicated that no design features are proposed that would substantially increase hazards. Therefore, no project-related impact would occur, which is consistent with the earlier findings.

- Would the project result in inadequate emergency access?

  The April 2016 *Environmental Checklist and Addendum* found that the prior environmental documentation adequately addressed this issue. A review of the recently-submitted Vesting Tentative Subdivision Map indicates that the current submittal is consistent with previous proposals.

- Would the project conflict with policies, plans or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?

  This issue was considered in the April 2016 *Environmental Checklist and Addendum*, which found that the project would have no impact. Review of the submitted Vesting Tentative Subdivision Map indicates that this conclusion remains valid, and that the current proposal is consistent with previous project plans.

APPENDIX A

TRAFFIC COUNT SUMMARY SHEETS

National Data and Surveying Services

City of El Dorado Hills
All Vehicles & Uturns On Unshifted
Peds & Bikes On Bank 1
Nothing On Bank 2

(323) 782-0090
info@ndsdata.com

File Name : 16-7893-001 White Rock Rd & Stonebriar Dr/4 Seasons Dr
Date : 12/1/2016

Unshifted Count = All Vehicles & Uturns

	White Rock Rd Southbound					Stonebriar Dr/4 Seasons Dr Westbound					White Rock Rd Northbound					Stonebriar Dr/4 Seasons Dr Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
7:00	5	145	5	0	155	0	0	1	0	1	1	47	0	0	48	32	0	15	0	47	251	0
7:15	5	141	9	0	155	3	0	2	0	5	3	47	2	0	52	22	0	14	0	36	248	0
7:30	2	169	9	0	180	0	0	6	0	6	1	76	2	0	79	32	0	13	0	45	310	0
7:45	6	172	10	0	188	4	0	7	0	11	4	68	0	0	72	24	0	16	0	40	311	0
Total	18	627	33	0	678	7	0	16	0	23	9	238	4	0	251	110	0	58	0	168	1120	0
8:00	4	135	24	0	163	3	0	7	0	10	0	70	1	0	71	15	0	11	0	26	270	0
8:15	5	93	8	0	106	4	0	3	0	7	3	61	2	0	66	22	0	11	0	33	212	0
8:30	1	72	11	0	84	3	1	14	0	18	4	61	1	0	66	16	0	16	0	32	200	0
8:45	5	39	9	0	53	3	0	10	0	13	4	58	1	0	63	24	0	9	0	33	162	0
Total	15	339	52	0	406	13	1	34	0	48	11	250	5	0	266	77	0	47	0	124	844	0
16:00	10	101	16	0	127	3	0	7	0	10	8	75	5	0	88	14	0	9	0	23	248	0
16:15	8	94	24	0	126	3	0	9	0	12	12	122	3	0	137	11	0	8	0	19	294	0
16:30	10	135	15	0	160	4	0	11	0	15	10	113	6	0	129	17	0	7	0	24	328	0
16:45	12	94	15	0	121	5	0	3	0	8	16	107	5	0	128	18	0	5	0	23	280	0
Total	40	424	70	0	534	15	0	30	0	45	46	417	19	0	482	60	0	29	0	89	1150	0
17:00	18	138	24	0	180	6	0	7	0	13	15	148	3	0	166	9	0	4	0	13	372	0
17:15	8	96	23	0	127	1	0	13	0	14	10	136	2	0	148	14	0	10	0	24	313	0
17:30	9	76	23	0	108	3	0	6	0	9	12	143	5	0	160	16	0	7	0	23	300	0
17:45	3	61	28	0	92	0	0	3	0	3	11	111	6	0	128	13	0	6	0	19	242	0
Total	38	371	98	0	507	10	0	29	0	39	48	538	16	0	602	52	0	27	0	79	1227	0
Grand Total	111	1761	253	0	2125	45	1	109	0	155	114	1443	44	0	1601	299	0	161	0	460	4341	0
Apprch %	5.2%	82.9%	11.9%	0.0%		29.0%	0.6%	70.3%	0.0%		7.1%	90.1%	2.7%	0.0%		65.0%	0.0%	35.0%	0.0%			
Total %	2.6%	40.6%	5.8%	0.0%	49.0%	1.0%	0.0%	2.5%	0.0%	3.6%	2.6%	33.2%	1.0%	0.0%	36.9%	6.9%	0.0%	3.7%	0.0%	10.6%	100.0%	

AM PEAK HOUR	White Rock Rd Southbound					Stonebriar Dr/4 Seasons Dr Westbound					White Rock Rd Northbound					Stonebriar Dr/4 Seasons Dr Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:15 to 08:15																					
Peak Hour For Entire Intersection Begins at 07:15																					
7:15	5	141	9	0	155	3	0	2	0	5	3	47	2	0	52	22	0	14	0	36	248
7:30	2	169	9	0	180	0	0	6	0	6	1	76	2	0	79	32	0	13	0	45	310
7:45	6	172	10	0	188	4	0	7	0	11	4	68	0	0	72	24	0	16	0	40	311
8:00	4	135	24	0	163	3	0	7	0	10	0	70	1	0	71	15	0	11	0	26	270
Total Volume	17	617	52	0	686	10	0	22	0	32	8	261	5	0	274	93	0	54	0	147	1139
% App Total	2.5%	89.9%	7.6%	0.0%		31.3%	0.0%	68.8%	0.0%		2.9%	95.3%	1.8%	0.0%		63.3%	0.0%	36.7%	0.0%		
PHF	.708	.897	.542	.000	.912	.625	.000	.786	.000	.727	.500	.859	.625	.000	.867	.727	.000	.844	.000	.817	.916

PM PEAK HOUR	White Rock Rd Southbound					Stonebriar Dr/4 Seasons Dr Westbound					White Rock Rd Northbound					Stonebriar Dr/4 Seasons Dr Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:30 to 17:30																					
Peak Hour For Entire Intersection Begins at 16:30																					
16:30	10	135	15	0	160	4	0	11	0	15	10	113	6	0	129	17	0	7	0	24	328
16:45	12	94	15	0	121	5	0	3	0	8	16	107	5	0	128	18	0	5	0	23	280
17:00	18	138	24	0	180	6	0	7	0	13	15	148	3	0	166	9	0	4	0	13	372
17:15	8	96	23	0	127	1	0	13	0	14	10	136	2	0	148	14	0	10	0	24	313
Total Volume	48	463	77	0	588	16	0	34	0	50	51	504	16	0	571	58	0	26	0	84	1293
% App Total	8.2%	78.7%	13.1%	0.0%		32.0%	0.0%	68.0%	0.0%		8.9%	88.3%	2.8%	0.0%		69.0%	0.0%	31.0%	0.0%		
PHF	.667	.839	.802	.000	.817	.667	.000	.654	.000	.833	.797	.851	.667	.000	.860	.806	.000	.650	.000	.875	.869

National Data and Surveying Services

City of El Dorado Hills
All Vehicles & Uturns On Unshifted
Peds & Bikes On Bank 1
Nothing On Bank 2

(323) 782-0090
info@ndsdata.com

File Name : 16-7893-001 White Rock Rd & Stonebriar Dr/4 Seasons Dr
Date : 12/1/2016

Bank 1 Count = Peds & Bikes

	White Rock Rd Southbound					Stonebriar Dr/4 Seasons Dr Westbound					White Rock Rd Northbound					Stonebriar Dr/4 Seasons Dr Eastbound						
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total	Peds Total
8:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
8:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
8:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	4
Grand Total	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	4
Apprch %	0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%				
Total %	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	

AM PEAK HOUR	White Rock Rd Southbound					Stonebriar Dr/4 Seasons Dr Westbound					White Rock Rd Northbound					Stonebriar Dr/4 Seasons Dr Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 07:15 to 08:15																					
Peak Hour For Entire Intersection Begins at 07:15																					
7:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App Total	0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			
PHF	.000	.000	.000		.000	.000	.000	.000		.000	.000	.000	.000		.000	.000	.000	.000		.000	.000

White Rock Rd & Stonebriar Dr/4 Seasons Dr

Date: 12/1/2016

Day: Thursday

Project #: 16-7893-001

Peak Hour Summary

AM Peak Hour	07:15 - 08:15
NOON Peak Hour	
PM Peak Hour	16:30 - 17:30

N

White Rock Rd

Southbound Approach

AM	52	617	17	0	376
NOON	0	0	0	0	0
PM	77	463	48	0	596

Stonebriar Dr/4 Seasons Dr

Eastbound Approach

AM	NOON	PM
60	0	128
0	0	0
93	0	58
0	0	0
54	0	26

Westbound Approach

AM	NOON	PM
22	0	34
0	0	0
10	0	16
0	0	0
22	0	64

CONTROL

Northbound Approach

AM	681	0	8	261	5
NOON	0	0	0	0	0
PM	505	0	51	504	16

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON	NONE	NONE
PM	4:00 PM	6:00 PM

Total Ins & Outs

North Leg

AM	686	376
NOON	0	0
PM	588	596

West Leg

AM	NOON	PM
60	0	128
147	0	84

East Leg

AM	NOON	PM
32	0	50
22	0	64

South Leg

AM	681	274
NOON	0	0
PM	505	571

Total Volume Per Leg

North Leg

AM	1062
NOON	0
PM	1184

West Leg

AM	NOON	PM
207	0	212

East Leg

AM	NOON	PM
54	0	114

South Leg

AM	955
NOON	0
PM	1076

National Data and Surveying Services

City of El Dorado Hills
All Vehicles & Uturns On Unshifted
Peds & Bikes On Bank 1
Nothing On Bank 2

(323) 782-0090
info@ndsdata.com

File Name : 16-7893-002 Prima Dr & Stonebriar Dr
Date : 12/1/2016

Unshifted Count = All Vehicles & Uturns

	Prima Dr Southbound					Stonebriar Dr Westbound					Prima Dr Northbound					Stonebriar Dr Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
7:00	7	0	0	0	7	0	5	1	0	6	0	0	0	0	0	1	40	0	0	41	54	0
7:15	3	0	0	0	3	0	7	5	0	12	0	0	0	0	0	0	35	0	0	35	50	0
7:30	4	0	0	0	4	0	9	1	0	10	0	0	0	0	0	0	40	0	0	40	54	0
7:45	6	0	0	0	6	0	11	3	0	14	0	0	0	0	0	0	34	0	0	34	54	0
Total	20	0	0	0	20	0	32	10	0	42	0	0	0	0	0	1	149	0	0	150	212	0
8:00	4	0	1	0	5	0	23	1	0	24	0	0	0	0	0	0	22	0	0	22	51	0
8:15	3	0	1	0	4	0	9	2	0	11	0	0	0	0	0	0	29	0	0	29	44	0
8:30	2	0	0	0	2	0	11	2	0	13	0	0	0	0	0	0	30	0	0	30	45	0
8:45	6	0	0	0	6	0	12	3	0	15	0	0	0	0	0	0	26	0	0	26	47	0
Total	15	0	2	0	17	0	55	8	0	63	0	0	0	0	0	0	107	0	0	107	187	0
16:00	6	0	0	0	6	0	20	5	0	25	0	0	0	0	0	1	17	0	0	18	49	0
16:15	3	0	0	0	3	0	31	4	0	35	0	0	0	0	0	0	16	0	0	16	54	0
16:30	3	0	0	0	3	0	22	3	0	25	0	0	0	0	0	0	25	0	0	25	53	0
16:45	3	0	0	0	3	0	27	4	0	31	0	0	0	0	0	0	16	0	0	16	50	0
Total	15	0	0	0	15	0	100	16	0	116	0	0	0	0	0	1	74	0	0	75	206	0
17:00	1	0	0	0	1	0	36	1	0	37	0	0	0	0	0	1	11	0	0	12	50	0
17:15	4	0	0	0	4	0	31	3	0	34	0	0	0	0	0	0	22	0	0	22	60	0
17:30	2	0	1	0	3	0	30	4	0	34	0	0	0	0	0	0	22	0	0	22	59	0
17:45	3	0	0	0	3	0	29	9	0	38	0	0	0	0	0	0	13	0	0	13	54	0
Total	10	0	1	0	11	0	126	17	0	143	0	0	0	0	0	1	68	0	0	69	223	0
Grand Total	60	0	3	0	63	0	313	51	0	364	0	0	0	0	0	3	398	0	0	401	828	0
Apprch %	95.2%	0.0%	4.8%	0.0%		0.0%	86.0%	14.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.7%	99.3%	0.0%	0.0%			
Total %	7.2%	0.0%	0.4%	0.0%	7.6%	0.0%	37.8%	6.2%	0.0%	44.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%	48.1%	0.0%	0.0%	48.4%	100.0%	

AM PEAK HOUR	Prima Dr Southbound					Stonebriar Dr Westbound					Prima Dr Northbound					Stonebriar Dr Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:00 to 08:00																					
Peak Hour For Entire Intersection Begins at 07:00																					
7:00	7	0	0	0	7	0	5	1	0	6	0	0	0	0	0	1	40	0	0	41	54
7:15	3	0	0	0	3	0	7	5	0	12	0	0	0	0	0	0	35	0	0	35	50
7:30	4	0	0	0	4	0	9	1	0	10	0	0	0	0	0	0	40	0	0	40	54
7:45	6	0	0	0	6	0	11	3	0	14	0	0	0	0	0	0	34	0	0	34	54
Total Volume	20	0	0	0	20	0	32	10	0	42	0	0	0	0	0	1	149	0	0	150	212
% App Total	100.0%	0.0%	0.0%	0.0%		0.0%	76.2%	23.8%	0.0%		0.0%	0.0%	0.0%	0.0%		0.7%	99.3%	0.0%	0.0%		
PHF	.714	.000	.000	.000	.714	.000	.727	.500	.000	.750	.000	.000	.000	.000	.000	.250	.931	.000	.000	.915	.981

PM PEAK HOUR	Prima Dr Southbound					Stonebriar Dr Westbound					Prima Dr Northbound					Stonebriar Dr Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 17:00 to 18:00																					
Peak Hour For Entire Intersection Begins at 17:00																					
17:00	1	0	0	0	1	0	36	1	0	37	0	0	0	0	0	1	11	0	0	12	50
17:15	4	0	0	0	4	0	31	3	0	34	0	0	0	0	0	0	22	0	0	22	60
17:30	2	0	1	0	3	0	30	4	0	34	0	0	0	0	0	0	22	0	0	22	59
17:45	3	0	0	0	3	0	29	9	0	38	0	0	0	0	0	0	13	0	0	13	54
Total Volume	10	0	1	0	11	0	126	17	0	143	0	0	0	0	0	1	68	0	0	69	223
% App Total	90.9%	0.0%	9.1%	0.0%		0.0%	88.1%	11.9%	0.0%		0.0%	0.0%	0.0%	0.0%		1.4%	98.6%	0.0%	0.0%		
PHF	.625	.000	.250	.000	.688	.000	.875	.472	.000	.941	.000	.000	.000	.000	.000	.250	.773	.000	.000	.784	.929

National Data and Surveying Services

City of El Dorado Hills
All Vehicles & Uturns On Unshifted
Peds & Bikes On Bank 1
Nothing On Bank 2

(323) 782-0090
info@ndsdata.com

File Name : 16-7893-002 Prima Dr & Stonebriar Dr
Date : 12/1/2016

Bank 1 Count = Peds & Bikes

	Prima Dr Southbound					Stonebriar Dr Westbound					Prima Dr Northbound					Stonebriar Dr Eastbound						
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total	Peds Total
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%				
Total %	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	

Prima Dr & Stonebriar Dr

Date: 12/1/2016

Day: Thursday

Project #: 16-7893-002

AM Peak Hour	07:00 - 08:00
NOON Peak Hour	
PM Peak Hour	17:00 - 18:00

N

Prima Dr

Stonebriar Dr

Peak Hour Summary

Southbound Approach

	Right	Through	Left	U-Turn	Out (North Leg)
AM	0	0	20	0	11
NOON	0	0	0	0	0
PM	1	0	10	0	18

Eastbound Approach

	AM	NOON	PM
Out (West Leg)	32	0	127
U-Turn	0	0	0
Left	1	0	1
Through	149	0	68
Right	0	0	0

Westbound Approach

	AM	NOON	PM
Right	10	0	17
Through	32	0	126
Left	0	0	0
U-Turn	0	0	0
Out (East Leg)	169	0	78

CONTROL

Northbound Approach

	Out (South Leg)	U-Turn	Left	Through	Right
AM	0	0	0	0	0
NOON	0	0	0	0	0
PM	0	0	0	0	0

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON	NONE	NONE
PM	4:00 PM	6:00 PM

Total Ins & Outs

North Leg

AM	20	11
NOON	0	0
PM	11	18

West Leg

	AM	NOON	PM
	32	0	127
	150	0	69

East Leg

	AM	NOON	PM
	42	0	143
	169	0	78

South Leg

AM	0	0
NOON	0	0
PM	0	0

Total Volume Per Leg

Leg	AM	NOON	PM
North Leg	31	0	29
West Leg	182	0	196
East Leg	211	0	221
South Leg	0	0	0

Prepared by NDS/ATD

VOLUME

White Rock Rd Bet. Stonebriar Dr & Sacramento/El Dorado County Line

Day: Thursday
Date: 12/1/2016

City: El Dorado Hills
Project #: CA16_7894_001

DAILY TOTALS	NB	SB	EB	WB	Total
	4,184	4,356	0	0	8,540

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
0:00	6		2		0	0	8		12:00	68		57		0	0	125	
0:15	2		3		0	0	5		12:15	57		47		0	0	104	
0:30	3		2		0	0	5		12:30	53		74		0	0	127	
0:45	4	15	1	8	0	0	5	23	12:45	64	242	63	241	0	0	127	483
1:00	2		4		0	0	6		13:00	63		56		0	0	119	
1:15	0		1		0	0	1		13:15	53		40		0	0	93	
1:30	1		2		0	0	3		13:30	79		44		0	0	123	
1:45	0	3	1	8	0	0	1	11	13:45	66	261	40	180	0	0	106	441
2:00	1		1		0	0	2		14:00	52		56		0	0	108	
2:15	1		0		0	0	1		14:15	64		66		0	0	130	
2:30	0		1		0	0	1		14:30	84		45		0	0	129	
2:45	1	3	1	3	0	0	2	6	14:45	101	301	51	218	0	0	152	519
3:00	1		1		0	0	2		15:00	86		78		0	0	164	
3:15	0		1		0	0	1		15:15	108		76		0	0	184	
3:30	0		2		0	0	2		15:30	82		99		0	0	181	
3:45	2	3	4	8	0	0	6	11	15:45	124	400	90	343	0	0	214	743
4:00	0		1		0	0	1		16:00	87		110		0	0	197	
4:15	0		3		0	0	3		16:15	133		107		0	0	240	
4:30	1		5		0	0	6		16:30	132		132		0	0	264	
4:45	2	3	4	13	0	0	6	16	16:45	128	480	110	459	0	0	238	939
5:00	7		3		0	0	10		17:00	158		141		0	0	299	
5:15	6		8		0	0	14		17:15	149		114		0	0	263	
5:30	12		23		0	0	35		17:30	155		87		0	0	242	
5:45	25	50	19	53	0	0	44	103	17:45	126	588	70	412	0	0	196	1000
6:00	17		30		0	0	47		18:00	92		78		0	0	170	
6:15	17		65		0	0	82		18:15	79		52		0	0	131	
6:30	33		94		0	0	127		18:30	70		41		0	0	111	
6:45	61	128	127	316	0	0	188	444	18:45	59	300	39	210	0	0	98	510
7:00	59		162		0	0	221		19:00	48		29		0	0	77	
7:15	48		162		0	0	210		19:15	32		22		0	0	54	
7:30	55		180		0	0	235		19:30	34		17		0	0	51	
7:45	87	249	184	688	0	0	271	937	19:45	30	144	16	84	0	0	46	228
8:00	54		142		0	0	196		20:00	33		16		0	0	49	
8:15	59		107		0	0	166		20:15	27		13		0	0	40	
8:30	87		93		0	0	180		20:30	20		10		0	0	30	
8:45	56	256	50	392	0	0	106	648	20:45	28	108	17	56	0	0	45	164
9:00	53		50		0	0	103		21:00	17		14		0	0	31	
9:15	29		50		0	0	79		21:15	15		9		0	0	24	
9:30	42		40		0	0	82		21:30	19		5		0	0	24	
9:45	43	167	66	206	0	0	109	373	21:45	10	61	7	35	0	0	17	96
10:00	37		56		0	0	93		22:00	10		8		0	0	18	
10:15	40		49		0	0	89		22:15	4		4		0	0	8	
10:30	65		57		0	0	122		22:30	8		7		0	0	15	
10:45	36	178	42	204	0	0	78	382	22:45	5	27	3	22	0	0	8	49
11:00	43		48		0	0	91		23:00	5		3		0	0	8	
11:15	57		43		0	0	100		23:15	1		3		0	0	4	
11:30	50		47		0	0	97		23:30	2		1		0	0	3	
11:45	54	204	52	190	0	0	106	394	23:45	5	13	0	7	0	0	5	20
TOTALS		1259		2089				**3348**	**TOTALS**		2925		2267				**5192**
SPLIT %		37.6%		62.4%				**39.2%**	**SPLIT %**		56.3%		43.7%				**60.8%**

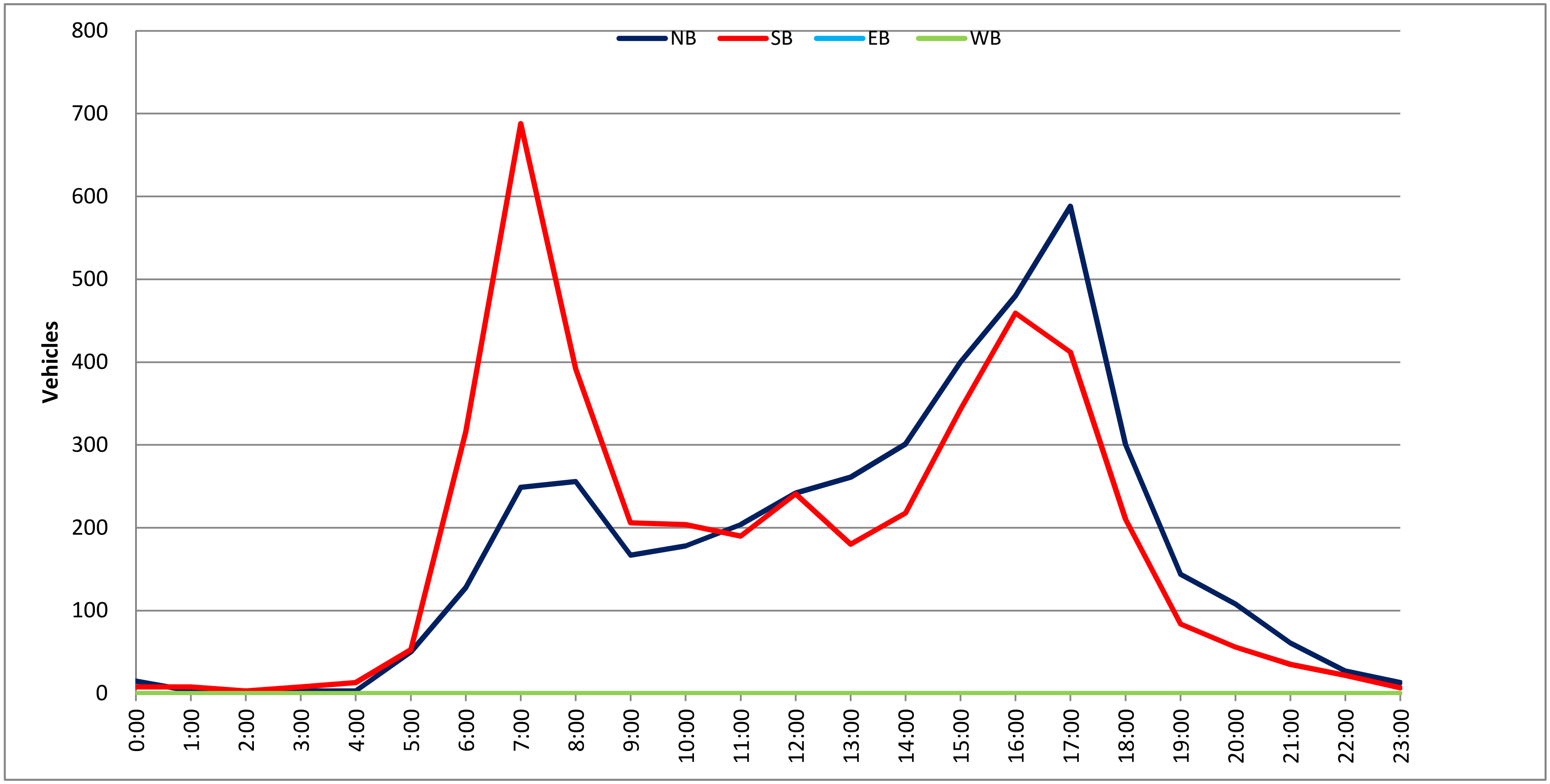
DAILY TOTALS	NB	SB	EB	WB	Total
	4,184	4,356	0	0	8,540

	NB	SB	EB	WB	Total		NB	SB	EB	WB	Total
AM Peak Hour	7:45	7:00			**7:00**	**PM Peak Hour**	16:45	16:30			**16:30**
AM Pk Volume	287	688			**937**	**PM Pk Volume**	590	497			**1064**
Pk Hr Factor	0.825	0.935			**0.864**	**Pk Hr Factor**	0.934	0.881			**0.890**
7 - 9 Volume	505	1080	0	0	**1585**	**4 - 6 Volume**	1068	871	0	0	**1939**
7 - 9 Peak Hour	7:45	7:00			**7:00**	**4 - 6 Peak Hour**	16:45	16:30			**16:30**
7 - 9 Pk Volume	287	688	0	0	**937**	**4 - 6 Pk Volume**	590	497	0	0	**1064**
Pk Hr Factor	0.825	0.935	0.000	0.000	**0.864**	**Pk Hr Factor**	0.934	0.881	0.000	0.000	**0.890**

Prepared by NDS/ATD

Project #: CA16_7894_001 **City:** El Dorado Hills

Location: White Rock Rd Bet. Stonebriar Dr & **Date:** 12/1/2016



CLASSIFICATION

White Rock Rd Bet. Stonebriar Dr & Sacramento/El Dorado County Line

Day: Thursday
Date: 12/1/2016

City: El Dorado Hills
Project #: CA16_7894_001n

North Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
0:00 AM	0	4	1	0	1	0	0	0	0	0	0	0	0	6
0:15	0	2	0	0	0	0	0	0	0	0	0	0	0	2
0:30	0	2	1	0	0	0	0	0	0	0	0	0	0	3
0:45	0	3	1	0	0	0	0	0	0	0	0	0	0	4
1:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
1:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30	0	1	0	0	0	0	0	0	0	0	0	0	0	1
1:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
2:15	0	1	0	0	0	0	0	0	0	0	0	0	0	1
2:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45	0	1	0	0	0	0	0	0	0	0	0	0	0	1
3:00	0	0	1	0	0	0	0	0	0	0	0	0	0	1
3:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45	0	2	0	0	0	0	0	0	0	0	0	0	0	2
4:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30	0	1	0	0	0	0	0	0	0	0	0	0	0	1
4:45	0	2	0	0	0	0	0	0	0	0	0	0	0	2
5:00	0	4	2	0	1	0	0	0	0	0	0	0	0	7
5:15	0	4	1	1	0	0	0	0	0	0	0	0	0	6
5:30	0	11	1	0	0	0	0	0	0	0	0	0	0	12
5:45	1	17	4	0	3	0	0	0	0	0	0	0	0	25
6:00	0	11	2	1	3	0	0	0	0	0	0	0	0	17
6:15	0	11	5	0	1	0	0	0	0	0	0	0	0	17
6:30	0	25	5	0	3	0	0	0	0	0	0	0	0	33
6:45	0	43	8	0	9	0	0	1	0	0	0	0	0	61
7:00	0	40	8	0	10	1	0	0	0	0	0	0	0	59
7:15	0	36	6	0	6	0	0	0	0	0	0	0	0	48
7:30	0	35	9	0	10	1	0	0	0	0	0	0	0	55
7:45	0	58	18	0	9	1	0	1	0	0	0	0	0	87
8:00	0	35	10	0	6	1	0	0	2	0	0	0	0	54
8:15	0	38	11	1	9	0	0	0	0	0	0	0	0	59
8:30	0	56	16	0	14	1	0	0	0	0	0	0	0	87
8:45	0	38	8	1	6	1	0	2	0	0	0	0	0	56
9:00	0	36	9	0	7	0	0	0	1	0	0	0	0	53
9:15	0	19	5	0	5	0	0	0	0	0	0	0	0	29
9:30	0	27	9	3	3	0	0	0	0	0	0	0	0	42
9:45	0	21	10	1	11	0	0	0	0	0	0	0	0	43
10:00	0	30	2	0	4	1	0	0	0	0	0	0	0	37
10:15	0	26	6	1	6	0	0	1	0	0	0	0	0	40
10:30	0	38	12	0	15	0	0	0	0	0	0	0	0	65
10:45	1	20	8	0	6	0	0	0	1	0	0	0	0	36
11:00	0	29	8	0	6	0	0	0	0	0	0	0	0	43
11:15	0	43	5	0	8	0	0	1	0	0	0	0	0	57
11:30	0	32	7	0	11	0	0	0	0	0	0	0	0	50
11:45	0	37	5	0	11	1	0	0	0	0	0	0	0	54
12:00 PM	0	44	10	0	14	0	0	0	0	0	0	0	0	68
12:15	0	39	9	1	8	0	0	0	0	0	0	0	0	57
12:30	0	37	9	0	6	1	0	0	0	0	0	0	0	53
12:45	0	44	9	0	10	1	0	0	0	0	0	0	0	64
13:00	0	41	8	0	14	0	0	0	0	0	0	0	0	63
13:15	0	34	8	0	11	0	0	0	0	0	0	0	0	53
13:30	1	58	10	1	9	0	0	0	0	0	0	0	0	79
13:45	0	45	12	0	9	0	0	0	0	0	0	0	0	66
14:00	0	33	12	0	7	0	0	0	0	0	0	0	0	52
14:15	0	46	9	0	9	0	0	0	0	0	0	0	0	64
14:30	0	59	15	0	10	0	0	0	0	0	0	0	0	84
14:45	1	67	18	0	15	0	0	0	0	0	0	0	0	101
15:00	0	69	6	0	11	0	0	0	0	0	0	0	0	86
15:15	1	70	24	0	13	0	0	0	0	0	0	0	0	108
15:30	0	57	14	0	11	0	0	0	0	0	0	0	0	82
15:45	0	77	26	1	20	0	0	0	0	0	0	0	0	124
16:00	1	62	17	0	6	1	0	0	0	0	0	0	0	87
16:15	0	98	17	0	17	1	0	0	0	0	0	0	0	133
16:30	0	93	21	0	17	1	0	0	0	0	0	0	0	132
16:45	0	88	24	0	16	0	0	0	0	0	0	0	0	128
17:00	1	119	23	0	15	0	0	0	0	0	0	0	0	158
17:15	0	116	14	0	19	0	0	0	0	0	0	0	0	149
17:30	0	112	24	0	19	0	0	0	0	0	0	0	0	155
17:45	0	93	15	0	18	0	0	0	0	0	0	0	0	126
18:00	0	60	14	0	18	0	0	0	0	0	0	0	0	92
18:15	0	62	9	0	8	0	0	0	0	0	0	0	0	79
18:30	0	50	13	0	7	0	0	0	0	0	0	0	0	70
18:45	0	42	8	0	9	0	0	0	0	0	0	0	0	59
19:00	0	36	6	0	6	0	0	0	0	0	0	0	0	48
19:15	0	21	8	0	3	0	0	0	0	0	0	0	0	32
19:30	0	22	6	0	6	0	0	0	0	0	0	0	0	34
19:45	0	22	4	0	4	0	0	0	0	0	0	0	0	30
20:00	0	23	6	1	3	0	0	0	0	0	0	0	0	33
20:15	0	16	7	0	4	0	0	0	0	0	0	0	0	27
20:30	0	14	4	0	2	0	0	0	0	0	0	0	0	20
20:45	0	19	5	0	4	0	0	0	0	0	0	0	0	28
21:00	0	15	2	0	0	0	0	0	0	0	0	0	0	17
21:15	0	12	1	0	2	0	0	0	0	0	0	0	0	15
21:30	0	14	4	0	1	0	0	0	0	0	0	0	0	19
21:45	0	6	1	1	2	0	0	0	0	0	0	0	0	10
22:00	0	10	0	0	0	0	0	0	0	0	0	0	0	10
22:15	0	2	1	0	1	0	0	0	0	0	0	0	0	4
22:30	0	7	0	0	1	0	0	0	0	0	0	0	0	8
22:45	0	3	1	0	1	0	0	0	0	0	0	0	0	5
23:00	0	2	2	0	1	0	0	0	0	0	0	0	0	5
23:15	0	1	0	0	0	0	0	0	0	0	0	0	0	1
23:30	0	0	1	0	1	0	0	0	0	0	0	0	0	2
23:45	0	3	1	0	1	0	0	0	0	0	0	0	0	5
Totals	7	2905	662	14	573	13		6	4					4184
% of Totals	0%	69%	16%	0%	14%	0%		0%	0%					100%

	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
AM Volumes	2	842	204	9	184	8	0	6	4	0	0	0	0	1259
% AM	0%	20%	5%	0%	4%	0%		0%	0%					30%
AM Peak Hour	5:00	7:45	7:45	9:30	11:15	7:00		8:00	7:15					7:45
Volume	1	187	55	5	44	3		2	2					287
PM Volumes	5	2063	458	5	389	5	0	0	0	0	0	0	0	2925
% PM	0%	49%	11%	0%	9%	0%								70%
PM Peak Hour	14:30	17:00	16:15	12:00	17:15	15:45								16:45
Volume	2	440	85	1	74	3								590

Directional Peak Periods	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
All Classes	Volume	%	Volume	%	Volume	%	Volume	%
	505 ⟷	12%	503 ⟷	12%	1068 ⟷	26%	2108 ⟷	50%

Classification Definitions

1 Motorcycles
2 Passenger Cars
3 2-Axle, 4-Tire Single Units
4 Buses
5 2-Axle, 6-Tire Single Units
6 3-Axle Single Units
7 > =4-Axle Single Units
8 <=4-Axle Single Trailers
9 5-Axle Single Trailers
10 >=6-Axle Single Trailers
11 <=5-Axle Multi-Trailers
12 6-Axle Multi-Trailers
13 >=7-Axle Multi-Trailers

Prepared by National Data & Surveying Services

CLASSIFICATION

White Rock Rd Bet. Stonebriar Dr & Sacramento/El Dorado County Line

Day: Thursday
Date: 12/1/2016

City: El Dorado Hills
Project #: CA16_7894_001s

South Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
0:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	2
0:15	0	1	2	0	0	0	0	0	0	0	0	0	0	3
0:30	0	2	0	0	0	0	0	0	0	0	0	0	0	2
0:45	0	1	0	0	0	0	0	0	0	0	0	0	0	1
1:00	0	2	1	0	1	0	0	0	0	0	0	0	0	4
1:15	0	0	0	0	1	0	0	0	0	0	0	0	0	1
1:30	0	0	1	0	1	0	0	0	0	0	0	0	0	2
1:45	0	1	0	0	0	0	0	0	0	0	0	0	0	1
2:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
2:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30	0	0	1	0	0	0	0	0	0	0	0	0	0	1
2:45	0	1	0	0	0	0	0	0	0	0	0	0	0	1
3:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
3:15	0	1	0	0	0	0	0	0	0	0	0	0	0	1
3:30	0	2	0	0	0	0	0	0	0	0	0	0	0	2
3:45	0	2	1	0	1	0	0	0	0	0	0	0	0	4
4:00	0	0	0	0	1	0	0	0	0	0	0	0	0	1
4:15	0	1	1	0	1	0	0	0	0	0	0	0	0	3
4:30	0	4	0	0	1	0	0	0	0	0	0	0	0	5
4:45	0	2	0	0	2	0	0	0	0	0	0	0	0	4
5:00	0	1	1	0	1	0	0	0	0	0	0	0	0	3
5:15	0	5	1	0	2	0	0	0	0	0	0	0	0	8
5:30	0	18	3	0	2	0	0	0	0	0	0	0	0	23
5:45	0	15	1	0	3	0	0	0	0	0	0	0	0	19
6:00	0	22	3	0	5	0	0	0	0	0	0	0	0	30
6:15	0	54	4	0	7	0	0	0	0	0	0	0	0	65
6:30	0	76	7	0	11	0	0	0	0	0	0	0	0	94
6:45	1	101	11	0	14	0	0	0	0	0	0	0	0	127
7:00	0	122	18	0	21	1	0	0	0	0	0	0	0	162
7:15	0	119	22	2	19	0	0	0	0	0	0	0	0	162
7:30	0	143	22	0	15	0	0	0	0	0	0	0	0	180
7:45	0	135	28	0	19	0	0	2	0	0	0	0	0	184
8:00	1	110	19	0	12	0	0	0	0	0	0	0	0	142
8:15	0	75	19	0	12	1	0	0	0	0	0	0	0	107
8:30	0	71	12	0	10	0	0	0	0	0	0	0	0	93
8:45	0	36	9	0	4	1	0	0	0	0	0	0	0	50
9:00	0	35	6	0	9	0	0	0	0	0	0	0	0	50
9:15	1	30	10	0	8	0	0	0	1	0	0	0	0	50
9:30	0	32	2	0	5	0	0	0	1	0	0	0	0	40
9:45	0	43	11	1	10	0	0	0	1	0	0	0	0	66
10:00	0	34	13	0	8	1	0	0	0	0	0	0	0	56
10:15	0	31	9	1	8	0	0	0	0	0	0	0	0	49
10:30	0	38	6	0	11	1	0	0	1	0	0	0	0	57
10:45	0	25	9	0	8	0	0	0	0	0	0	0	0	42
11:00	0	36	6	0	5	0	0	1	0	0	0	0	0	48
11:15	0	30	9	0	4	0	0	0	0	0	0	0	0	43
11:30	0	32	8	0	6	0	0	0	0	0	1	0	0	47
11:45	0	37	9	1	4	0	0	0	0	0	1	0	0	52
12:00 PM	0	42	10	0	5	0	0	0	0	0	0	0	0	57
12:15	0	34	8	0	5	0	0	0	0	0	0	0	0	47
12:30	0	56	12	0	6	0	0	0	0	0	0	0	0	74
12:45	1	44	5	0	13	0	0	0	0	0	0	0	0	63
13:00	0	44	10	0	2	0	0	0	0	0	0	0	0	56
13:15	0	31	5	1	3	0	0	0	0	0	0	0	0	40
13:30	0	31	7	2	4	0	0	0	0	0	0	0	0	44
13:45	0	28	6	0	5	0	0	0	0	0	1	0	0	40
14:00	0	36	12	2	6	0	0	0	0	0	0	0	0	56
14:15	0	49	8	1	6	1	0	1	0	0	0	0	0	66
14:30	0	34	2	0	9	0	0	0	0	0	0	0	0	45
14:45	0	35	11	0	5	0	0	0	0	0	0	0	0	51
15:00	0	59	14	0	5	0	0	0	0	0	0	0	0	78
15:15	0	54	10	0	12	0	0	0	0	0	0	0	0	76
15:30	0	69	17	1	12	0	0	0	0	0	0	0	0	99
15:45	1	65	14	0	9	0	0	1	0	0	0	0	0	90
16:00	0	85	15	0	9	0	0	1	0	0	0	0	0	110
16:15	0	79	16	0	11	0	0	0	1	0	0	0	0	107
16:30	0	102	17	0	13	0	0	0	0	0	0	0	0	132
16:45	1	84	12	0	11	1	0	1	0	0	0	0	0	110
17:00	0	120	11	0	10	0	0	0	0	0	0	0	0	141
17:15	0	95	12	0	7	0	0	0	0	0	0	0	0	114
17:30	0	72	10	0	5	0	0	0	0	0	0	0	0	87
17:45	1	54	10	0	5	0	0	0	0	0	0	0	0	70
18:00	0	62	11	0	5	0	0	0	0	0	0	0	0	78
18:15	0	42	7	0	2	0	0	1	0	0	0	0	0	52
18:30	0	27	7	0	7	0	0	0	0	0	0	0	0	41
18:45	0	29	8	0	2	0	0	0	0	0	0	0	0	39
19:00	0	21	5	0	2	0	0	1	0	0	0	0	0	29
19:15	0	14	3	0	5	0	0	0	0	0	0	0	0	22
19:30	0	15	0	0	2	0	0	0	0	0	0	0	0	17
19:45	0	12	4	0	0	0	0	0	0	0	0	0	0	16
20:00	0	13	2	0	1	0	0	0	0	0	0	0	0	16
20:15	0	12	1	0	0	0	0	0	0	0	0	0	0	13
20:30	0	6	2	0	2	0	0	0	0	0	0	0	0	10
20:45	0	11	4	0	2	0	0	0	0	0	0	0	0	17
21:00	0	9	3	0	2	0	0	0	0	0	0	0	0	14
21:15	0	8	0	1	0	0	0	0	0	0	0	0	0	9
21:30	0	4	0	0	1	0	0	0	0	0	0	0	0	5
21:45	0	5	0	0	2	0	0	0	0	0	0	0	0	7
22:00	0	7	1	0	0	0	0	0	0	0	0	0	0	8
22:15	0	3	1	0	0	0	0	0	0	0	0	0	0	4
22:30	0	6	1	0	0	0	0	0	0	0	0	0	0	7
22:45	0	2	1	0	0	0	0	0	0	0	0	0	0	3
23:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
23:15	0	1	1	0	1	0	0	0	0	0	0	0	0	3
23:30	0	1	0	0	0	0	0	0	0	0	0	0	0	1
23:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	7	3245	601	13	466	7		9	5		3			4356
% of Totals	0%	74%	14%	0%	11%	0%		0%	0%		0%			100%

	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
AM Volumes	3	1530	285	5	252	5	0	3	4	0	2	0	0	2089
% AM	0%	35%	7%	0%	6%	0%		0%	0%		0%			48%
AM Peak Hour	6:00	7:00	7:15	6:30	7:00	8:00		7:00	9:00		11:00			7:00
Volume	1	519	91	2	74	2		2	3		2			688
PM Volumes	4	1715	316	8	214	2	0	6	1	0	1	0	0	2267
% PM	0%	39%	7%	0%	5%	0%		0%	0%		0%			52%
PM Peak Hour	12:00	16:30	15:30	13:15	16:15	13:30		15:15	15:30		13:00			16:30
Volume	1	401	62	5	45	1		2	1		1			497

Directional Peak Periods	AM 7-9			NOON 12-2			PM 4-6			Off Peak Volumes		
All Classes	Volume		%	Volume		%	Volume		%	Volume		%
	1080	⟷	25%	421	⟷	10%	871	⟷	20%	1984	⟷	46%

Classification Definitions

1 Motorcycles	4 Buses	7 >=4-Axle Single Units	10 >=6-Axle Single Trailers	13 >=7-Axle Multi-Trailers
2 Passenger Cars	5 2-Axle, 6-Tire Single Units	8 <=4-Axle Single Trailers	11 <=5-Axle Multi-Trailers	
3 2-Axle, 4-Tire Single Units	6 3-Axle Single Units	9 5-Axle Single Trailers	12 6-Axle Multi-Trailers	

Prepared by National Data & Surveying Services

CLASSIFICATION

White Rock Rd Bet. Stonebriar Dr & Sacramento/El Dorado County Line

Day: Thursday **City:** El Dorado Hills

Date: 12/1/2016 **Project #:** CA16_7894_001

Summary

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
0:00 AM	0	6	1	0	1	0	0	0	0	0	0	0	0	8
0:15	0	3	2	0	0	0	0	0	0	0	0	0	0	5
0:30	0	4	1	0	0	0	0	0	0	0	0	0	0	5
0:45	0	4	1	0	0	0	0	0	0	0	0	0	0	5
1:00	0	4	1	0	1	0	0	0	0	0	0	0	0	6
1:15	0	0	0	0	1	0	0	0	0	0	0	0	0	1
1:30	0	1	1	0	1	0	0	0	0	0	0	0	0	3
1:45	0	1	0	0	0	0	0	0	0	0	0	0	0	1
2:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
2:15	0	1	0	0	0	0	0	0	0	0	0	0	0	1
2:30	0	0	1	0	0	0	0	0	0	0	0	0	0	1
2:45	0	2	0	0	0	0	0	0	0	0	0	0	0	2
3:00	0	1	1	0	0	0	0	0	0	0	0	0	0	2
3:15	0	1	0	0	0	0	0	0	0	0	0	0	0	1
3:30	0	2	0	0	0	0	0	0	0	0	0	0	0	2
3:45	0	4	1	0	1	0	0	0	0	0	0	0	0	6
4:00	0	0	0	0	1	0	0	0	0	0	0	0	0	1
4:15	0	1	1	0	1	0	0	0	0	0	0	0	0	3
4:30	0	5	0	0	1	0	0	0	0	0	0	0	0	6
4:45	0	4	0	0	2	0	0	0	0	0	0	0	0	6
5:00	0	5	3	0	2	0	0	0	0	0	0	0	0	10
5:15	0	9	2	1	2	0	0	0	0	0	0	0	0	14
5:30	0	29	4	0	2	0	0	0	0	0	0	0	0	35
5:45	1	32	5	0	6	0	0	0	0	0	0	0	0	44
6:00	0	33	5	1	8	0	0	0	0	0	0	0	0	47
6:15	0	65	9	0	8	0	0	0	0	0	0	0	0	82
6:30	0	101	12	0	14	0	0	0	0	0	0	0	0	127
6:45	1	144	19	0	23	0	0	1	0	0	0	0	0	188
7:00	0	162	26	0	31	2	0	0	0	0	0	0	0	221
7:15	0	155	28	2	25	0	0	0	0	0	0	0	0	210
7:30	0	178	31	0	25	1	0	0	0	0	0	0	0	235
7:45	0	193	46	0	28	1	0	3	0	0	0	0	0	271
8:00	1	145	29	0	18	1	0	0	2	0	0	0	0	196
8:15	0	113	30	1	21	1	0	0	0	0	0	0	0	166
8:30	0	127	28	0	24	1	0	0	0	0	0	0	0	180
8:45	0	74	17	1	10	2	0	2	0	0	0	0	0	106
9:00	0	71	15	0	16	0	0	0	1	0	0	0	0	103
9:15	1	49	15	0	13	0	0	0	1	0	0	0	0	79
9:30	0	59	11	3	8	0	0	0	1	0	0	0	0	82
9:45	0	64	21	2	21	0	0	0	1	0	0	0	0	109
10:00	0	64	15	0	12	2	0	0	0	0	0	0	0	93
10:15	0	57	15	2	14	0	0	1	0	0	0	0	0	89
10:30	0	76	18	0	26	1	0	0	1	0	0	0	0	122
10:45	1	45	17	0	14	0	0	0	1	0	0	0	0	78
11:00	0	65	14	0	11	0	0	1	0	0	0	0	0	91
11:15	0	73	14	0	12	0	0	1	0	0	0	0	0	100
11:30	0	64	15	0	17	0	0	0	0	0	1	0	0	97
11:45	0	74	14	1	15	1	0	0	0	0	1	0	0	106
12:00 PM	0	86	20	0	19	0	0	0	0	0	0	0	0	125
12:15	0	73	17	1	13	0	0	0	0	0	0	0	0	104
12:30	0	93	21	0	12	1	0	0	0	0	0	0	0	127
12:45	1	88	14	0	23	1	0	0	0	0	0	0	0	127
13:00	0	85	18	0	16	0	0	0	0	0	0	0	0	119
13:15	0	65	13	1	14	0	0	0	0	0	0	0	0	93
13:30	1	89	17	3	13	0	0	0	0	0	0	0	0	123
13:45	0	73	18	0	14	0	0	0	0	0	1	0	0	106
14:00	0	69	24	2	13	0	0	0	0	0	0	0	0	108
14:15	0	95	17	1	15	1	0	1	0	0	0	0	0	130
14:30	0	93	17	0	19	0	0	0	0	0	0	0	0	129
14:45	1	102	29	0	20	0	0	0	0	0	0	0	0	152
15:00	0	128	20	0	16	0	0	0	0	0	0	0	0	164
15:15	1	124	34	0	25	0	0	0	0	0	0	0	0	184
15:30	0	126	31	1	23	0	0	0	0	0	0	0	0	181
15:45	1	142	40	1	29	0	0	1	0	0	0	0	0	214
16:00	1	147	32	0	15	1	0	1	0	0	0	0	0	197
16:15	0	177	33	0	28	1	0	0	1	0	0	0	0	240
16:30	0	195	38	0	30	1	0	0	0	0	0	0	0	264
16:45	1	172	36	0	27	1	0	1	0	0	0	0	0	238
17:00	1	239	34	0	25	0	0	0	0	0	0	0	0	299
17:15	0	211	26	0	26	0	0	0	0	0	0	0	0	263
17:30	0	184	34	0	24	0	0	0	0	0	0	0	0	242
17:45	1	147	25	0	23	0	0	0	0	0	0	0	0	196
18:00	0	122	25	0	23	0	0	0	0	0	0	0	0	170
18:15	0	104	16	0	10	0	0	1	0	0	0	0	0	131
18:30	0	77	20	0	14	0	0	0	0	0	0	0	0	111
18:45	0	71	16	0	11	0	0	0	0	0	0	0	0	98
19:00	0	57	11	0	8	0	0	1	0	0	0	0	0	77
19:15	0	35	11	0	8	0	0	0	0	0	0	0	0	54
19:30	0	37	6	0	8	0	0	0	0	0	0	0	0	51
19:45	0	34	8	0	4	0	0	0	0	0	0	0	0	46
20:00	0	36	8	1	4	0	0	0	0	0	0	0	0	49
20:15	0	28	8	0	4	0	0	0	0	0	0	0	0	40
20:30	0	20	6	0	4	0	0	0	0	0	0	0	0	30
20:45	0	30	9	0	6	0	0	0	0	0	0	0	0	45
21:00	0	24	5	0	2	0	0	0	0	0	0	0	0	31
21:15	0	20	1	1	2	0	0	0	0	0	0	0	0	24
21:30	0	18	4	0	2	0	0	0	0	0	0	0	0	24
21:45	0	11	1	1	4	0	0	0	0	0	0	0	0	17
22:00	0	17	1	0	0	0	0	0	0	0	0	0	0	18
22:15	0	5	2	0	1	0	0	0	0	0	0	0	0	8
22:30	0	13	1	0	1	0	0	0	0	0	0	0	0	15
22:45	0	5	2	0	1	0	0	0	0	0	0	0	0	8
23:00	0	5	2	0	1	0	0	0	0	0	0	0	0	8
23:15	0	2	1	0	1	0	0	0	0	0	0	0	0	4
23:30	0	1	1	0	1	0	0	0	0	0	0	0	0	3
23:45	0	3	1	0	1	0	0	0	0	0	0	0	0	5
Totals	14	6150	1263	27	1039	20		15	9		3			8540
% of Totals	0%	72%	15%	0%	12%	0%		0%	0%		0%			100%

AM Volumes	5	2372	489	14	436	13	0	9	8	0	2	0	0	3348
% AM	0%	28%	6%	0%	5%	0%		0%	0%		0%			39%
AM Peak Hour	5:00	7:00	7:30	9:30	7:00	8:00		7:00	9:00		11:00			7:00
Volume	1	688	136	7	109	5		3	4		2			937
PM Volumes	9	3778	774	13	603	7	0	6	1	0	1	0	0	5192
% PM	0%	44%	9%	0%	7%	0%		0%	0%		0%			61%
PM Peak Hour	15:15	16:30	15:45	13:15	16:15	16:00		15:15	15:30		13:00			16:30
Volume	3	817	143	6	110	4		2	1		1			1064

Directional Peak Periods	AM 7-9			NOON 12-2			PM 4-6			Off Peak Volumes		
All Classes	Volume		%	Volume		%	Volume		%	Volume		%
	1585	⟷	19%	924	⟷	11%	1939	⟷	23%	4092	⟷	48%

Classification Definitions

1 Motorcycles	**4** Buses	**7** > =4-Axle Single Units	**10** >=6-Axle Single Trailers	**13** >=7-Axle Multi-Trailers
2 Passenger Cars	**5** 2-Axle, 6-Tire Single Units	**8** <=4-Axle Single Trailers	**11** <=5-Axle Multi-Trailers	
3 2-Axle, 4-Tire Single Units	**6** 3-Axle Single Units	**9** 5-Axle Single Trailers	**12** 6-Axle Multi-Trailers	

Prepared by NDS/ATD

VOLUME

White Rock Rd Bet. Stonebriar Dr & Manchester Dr

Day: Thursday
Date: 12/1/2016

City: El Dorado Hills
Project #: CA16_7894_002

DAILY TOTALS	NB	SB	EB	WB	Total
	4,907	5,049	0	0	9,956

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
0:00	5		3		0	0	8		12:00	71		78		0	0	149	
0:15	3		5		0	0	8		12:15	72		71		0	0	143	
0:30	3		4		0	0	7		12:30	64		87		0	0	151	
0:45	4	15	1	13	0	0	5	28	12:45	70	277	62	298	0	0	132	575
1:00	3		5		0	0	8		13:00	90		63		0	0	153	
1:15	0		2		0	0	2		13:15	57		59		0	0	116	
1:30	1		2		0	0	3		13:30	80		58		0	0	138	
1:45	1	5	1	10	0	0	2	15	13:45	78	305	62	242	0	0	140	547
2:00	0		1		0	0	1		14:00	75		74		0	0	149	
2:15	1		0		0	0	1		14:15	79		87		0	0	166	
2:30	0		1		0	0	1		14:30	93		71		0	0	164	
2:45	1	2	1	3	0	0	2	5	14:45	113	360	61	293	0	0	174	653
3:00	1		1		0	0	2		15:00	107		97		0	0	204	
3:15	0		2		0	0	2		15:15	106		111		0	0	217	
3:30	5		1		0	0	6		15:30	90		115		0	0	205	
3:45	4	10	2	6	0	0	6	16	15:45	129	432	107	430	0	0	236	862
4:00	0		1		0	0	1		16:00	95		121		0	0	216	
4:15	0		2		0	0	2		16:15	139		129		0	0	268	
4:30	1		3		0	0	4		16:30	141		153		0	0	294	
4:45	3	4	2	8	0	0	5	12	16:45	128	503	127	530	0	0	255	1033
5:00	8		4		0	0	12		17:00	159		172		0	0	331	
5:15	8		9		0	0	17		17:15	166		129		0	0	295	
5:30	15		18		0	0	33		17:30	156		107		0	0	263	
5:45	28	59	14	45	0	0	42	104	17:45	128	609	93	501	0	0	221	1110
6:00	19		24		0	0	43		18:00	98		94		0	0	192	
6:15	20		39		0	0	59		18:15	82		65		0	0	147	
6:30	32		83		0	0	115		18:30	76		73		0	0	149	
6:45	85	156	116	262	0	0	201	418	18:45	63	319	46	278	0	0	109	597
7:00	86		157		0	0	243		19:00	42		46		0	0	88	
7:15	76		158		0	0	234		19:15	37		33		0	0	70	
7:30	91		178		0	0	269		19:30	39		27		0	0	66	
7:45	116	369	186	679	0	0	302	1048	19:45	35	153	32	138	0	0	67	291
8:00	75		158		0	0	233		20:00	27		24		0	0	51	
8:15	94		98		0	0	192		20:15	24		24		0	0	48	
8:30	102		83		0	0	185		20:30	11		27		0	0	38	
8:45	88	359	59	398	0	0	147	757	20:45	24	86	23	98	0	0	47	184
9:00	75		56		0	0	131		21:00	16		28		0	0	44	
9:15	45		47		0	0	92		21:15	15		18		0	0	33	
9:30	56		40		0	0	96		21:30	21		10		0	0	31	
9:45	59	235	67	210	0	0	126	445	21:45	19	71	13	69	0	0	32	140
10:00	57		61		0	0	118		22:00	8		16		0	0	24	
10:15	60		57		0	0	117		22:15	6		8		0	0	14	
10:30	80		71		0	0	151		22:30	12		11		0	0	23	
10:45	64	261	53	242	0	0	117	503	22:45	4	30	5	40	0	0	9	70
11:00	51		64		0	0	115		23:00	5		8		0	0	13	
11:15	77		57		0	0	134		23:15	1		5		0	0	6	
11:30	69		51		0	0	120		23:30	2		6		0	0	8	
11:45	76	273	65	237	0	0	141	510	23:45	6	14	0	19	0	0	6	33
TOTALS		1748		2113				**3861**	**TOTALS**		3159		2936				**6095**
SPLIT %		45.3%		54.7%				**38.8%**	**SPLIT %**		51.8%		48.2%				**61.2%**

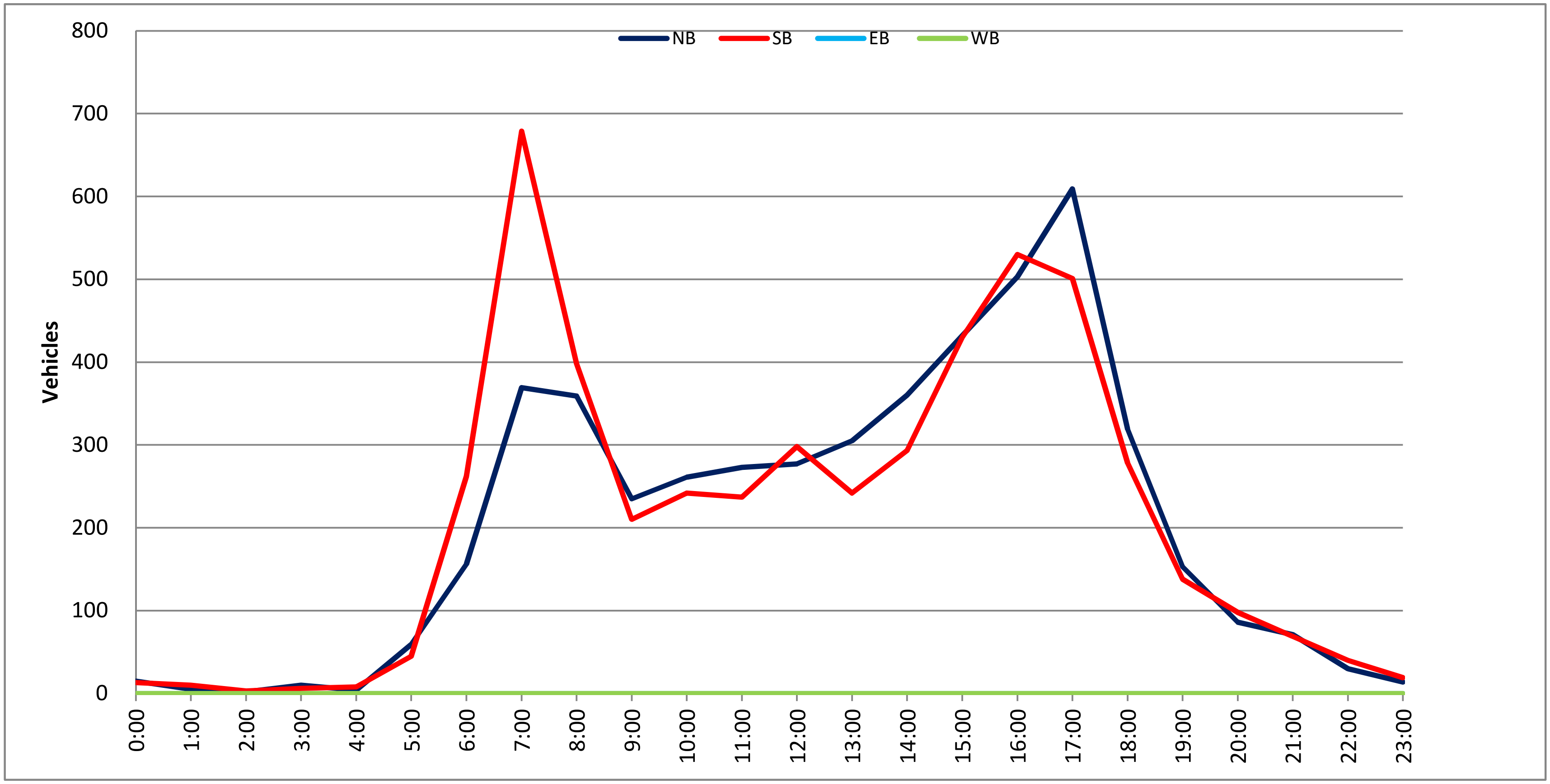
DAILY TOTALS	NB	SB	EB	WB	Total
	4,907	5,049	0	0	9,956

	NB	SB	EB	WB	TOTAL		NB	SB	EB	WB	TOTAL
AM Peak Hour	7:45	7:15			**7:00**	**PM Peak Hour**	16:45	16:15			**16:30**
AM Pk Volume	387	680			**1048**	**PM Pk Volume**	609	581			**1175**
Pk Hr Factor	0.834	0.914			**0.868**	**Pk Hr Factor**	0.917	0.844			**0.887**
7 - 9 Volume	728	1077	0	0	**1805**	**4 - 6 Volume**	1112	1031	0	0	**2143**
7 - 9 Peak Hour	7:45	7:15			**7:00**	**4 - 6 Peak Hour**	16:45	16:15			**16:30**
7 - 9 Pk Volume	387	680	0	0	**1048**	**4 - 6 Pk Volume**	609	581	0	0	**1175**
Pk Hr Factor	0.834	0.914	0.000	0.000	**0.868**	**Pk Hr Factor**	0.917	0.844	0.000	0.000	**0.887**

Prepared by NDS/ATD

Project #: CA16_7894_002 **City:** El Dorado Hills

Location: White Rock Rd Bet. Stonebriar Dr & **Date:** 12/1/2016



Prepared by National Data & Surveying Services

CLASSIFICATION

White Rock Rd Bet. Stonebriar Dr & Manchester Dr

Day: Thursday
Date: 12/1/2016

City: El Dorado Hills
Project #: CA16_7894_002n

North Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
0:00 AM	0	5	0	0	0	0	0	0	0	0	0	0	0	5
0:15	0	3	0	0	0	0	0	0	0	0	0	0	0	3
0:30	0	3	0	0	0	0	0	0	0	0	0	0	0	3
0:45	0	4	0	0	0	0	0	0	0	0	0	0	0	4
1:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
1:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30	0	1	0	0	0	0	0	0	0	0	0	0	0	1
1:45	0	1	0	0	0	0	0	0	0	0	0	0	0	1
2:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15	0	1	0	0	0	0	0	0	0	0	0	0	0	1
2:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45	0	1	0	0	0	0	0	0	0	0	0	0	0	1
3:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
3:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30	0	5	0	0	0	0	0	0	0	0	0	0	0	5
3:45	0	4	0	0	0	0	0	0	0	0	0	0	0	4
4:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30	0	1	0	0	0	0	0	0	0	0	0	0	0	1
4:45	0	2	0	0	1	0	0	0	0	0	0	0	0	3
5:00	0	7	1	0	0	0	0	0	0	0	0	0	0	8
5:15	0	6	1	0	1	0	0	0	0	0	0	0	0	8
5:30	0	14	0	0	1	0	0	0	0	0	0	0	0	15
5:45	1	24	3	0	0	0	0	0	0	0	0	0	0	28
6:00	0	14	2	0	3	0	0	0	0	0	0	0	0	19
6:15	0	19	1	0	0	0	0	0	0	0	0	0	0	20
6:30	0	28	2	1	1	0	0	0	0	0	0	0	0	32
6:45	0	68	9	0	7	0	1	0	0	0	0	0	0	85
7:00	0	72	11	1	1	1	0	0	0	0	0	0	0	86
7:15	0	67	6	1	2	0	0	0	0	0	0	0	0	76
7:30	0	75	12	0	3	1	0	0	0	0	0	0	0	91
7:45	0	102	7	0	5	1	0	1	0	0	0	0	0	116
8:00	0	64	8	0	1	1	0	0	1	0	0	0	0	75
8:15	0	82	9	1	1	0	0	0	1	0	0	0	0	94
8:30	0	87	11	1	2	1	0	0	0	0	0	0	0	102
8:45	0	76	7	1	1	1	0	2	0	0	0	0	0	88
9:00	0	65	4	1	4	0	0	0	1	0	0	0	0	75
9:15	0	37	5	0	3	0	0	0	0	0	0	0	0	45
9:30	0	46	5	1	4	0	0	0	0	0	0	0	0	56
9:45	0	47	10	0	2	0	0	0	0	0	0	0	0	59
10:00	0	51	3	0	2	1	0	0	0	0	0	0	0	57
10:15	1	46	10	0	2	0	0	1	0	0	0	0	0	60
10:30	0	65	7	1	3	0	0	0	1	0	3	0	0	80
10:45	1	49	8	0	5	0	0	0	1	0	0	0	0	64
11:00	0	41	8	0	2	0	0	0	0	0	0	0	0	51
11:15	0	66	8	0	3	0	0	0	0	0	0	0	0	77
11:30	0	54	8	0	7	0	0	0	0	0	0	0	0	69
11:45	0	60	11	0	4	1	0	0	0	0	0	0	0	76
12:00 PM	0	57	12	0	2	0	0	0	0	0	0	0	0	71
12:15	0	63	3	1	5	0	0	0	0	0	0	0	0	72
12:30	0	55	5	0	3	1	0	0	0	0	0	0	0	64
12:45	0	59	6	0	4	1	0	0	0	0	0	0	0	70
13:00	0	71	15	0	4	0	0	0	0	0	0	0	0	90
13:15	0	49	8	0	0	0	0	0	0	0	0	0	0	57
13:30	1	66	9	1	3	0	0	0	0	0	0	0	0	80
13:45	0	66	12	0	0	0	0	0	0	0	0	0	0	78
14:00	0	68	5	0	2	0	0	0	0	0	0	0	0	75
14:15	0	67	7	0	5	0	0	0	0	0	0	0	0	79
14:30	0	82	7	0	4	0	0	0	0	0	0	0	0	93
14:45	1	91	17	1	3	0	0	0	0	0	0	0	0	113
15:00	0	92	9	0	6	0	0	0	0	0	0	0	0	107
15:15	2	92	9	0	3	0	0	0	0	0	0	0	0	106
15:30	0	74	12	2	2	0	0	0	0	0	0	0	0	90
15:45	0	103	19	0	7	0	0	0	0	0	0	0	0	129
16:00	1	85	5	1	2	1	0	0	0	0	0	0	0	95
16:15	0	121	14	0	3	1	0	0	0	0	0	0	0	139
16:30	0	120	14	0	6	1	0	0	0	0	0	0	0	141
16:45	0	112	12	0	4	0	0	0	0	0	0	0	0	128
17:00	1	140	15	0	3	0	0	0	0	0	0	0	0	159
17:15	0	147	18	0	1	0	0	0	0	0	0	0	0	166
17:30	0	138	13	0	5	0	0	0	0	0	0	0	0	156
17:45	0	107	19	0	2	0	0	0	0	0	0	0	0	128
18:00	0	83	11	0	4	0	0	0	0	0	0	0	0	98
18:15	0	72	9	0	1	0	0	0	0	0	0	0	0	82
18:30	0	65	8	0	3	0	0	0	0	0	0	0	0	76
18:45	0	57	4	0	2	0	0	0	0	0	0	0	0	63
19:00	0	35	5	0	2	0	0	0	0	0	0	0	0	42
19:15	0	34	2	0	1	0	0	0	0	0	0	0	0	37
19:30	0	33	5	0	1	0	0	0	0	0	0	0	0	39
19:45	0	31	3	0	1	0	0	0	0	0	0	0	0	35
20:00	0	24	1	1	1	0	0	0	0	0	0	0	0	27
20:15	0	22	2	0	0	0	0	0	0	0	0	0	0	24
20:30	0	10	1	0	0	0	0	0	0	0	0	0	0	11
20:45	0	21	3	0	0	0	0	0	0	0	0	0	0	24
21:00	0	16	0	0	0	0	0	0	0	0	0	0	0	16
21:15	0	13	2	0	0	0	0	0	0	0	0	0	0	15
21:30	0	19	2	0	0	0	0	0	0	0	0	0	0	21
21:45	0	16	2	1	0	0	0	0	0	0	0	0	0	19
22:00	0	8	0	0	0	0	0	0	0	0	0	0	0	8
22:15	0	5	1	0	0	0	0	0	0	0	0	0	0	6
22:30	0	11	1	0	0	0	0	0	0	0	0	0	0	12
22:45	0	3	1	0	0	0	0	0	0	0	0	0	0	4
23:00	0	4	0	0	1	0	0	0	0	0	0	0	0	5
23:15	0	1	0	0	0	0	0	0	0	0	0	0	0	1
23:30	0	2	0	0	0	0	0	0	0	0	0	0	0	2
23:45	0	5	0	0	1	0	0	0	0	0	0	0	0	6
Totals	9	4182	505	17	168	13	1	4	5		3			4907
% of Totals	0%	85%	10%	0%	3%	0%	0%	0%	0%		0%			100%

AM Volumes	3	1467	177	9	71	8	1	4	5	0	3	0	0	1748
% AM	0%	30%	4%	0%	1%	0%	0%	0%	0%		0%			36%
AM Peak Hour	10:00	7:45	11:15	8:15	11:30	7:00	6:00	8:00	7:30		9:45			7:45
Volume	2	335	39	4	18	3	1	2	2		3			387
PM Volumes	6	2715	328	8	97	5	0	0	0	0	0	0	0	3159
% PM	0%	55%	7%	0%	2%	0%								64%
PM Peak Hour	14:30	16:45	17:00	14:45	14:15	15:45								16:45
Volume	3	537	65	3	18	3								609

Directional Peak Periods	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
All Classes	Volume	%	Volume	%	Volume	%	Volume	%
	728 ⟷	15%	582 ⟷	12%	1112 ⟷	23%	2485 ⟷	51%

Classification Definitions

1 Motorcycles	**4** Buses	**7** > =4-Axle Single Units	**10** >=6-Axle Single Trailers	**13** >=7-Axle Multi-Trailers
2 Passenger Cars	**5** 2-Axle, 6-Tire Single Units	**8** <=4-Axle Single Trailers	**11** <=5-Axle Multi-Trailers	
3 2-Axle, 4-Tire Single Units	**6** 3-Axle Single Units	**9** 5-Axle Single Trailers	**12** 6-Axle Multi-Trailers	

Prepared by National Data & Surveying Services

CLASSIFICATION

White Rock Rd Bet. Stonebriar Dr & Manchester Dr

Day: Thursday
Date: 12/1/2016

City: El Dorado Hills
Project #: CA16_7894_002s

South Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
0:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	3
0:15	0	5	0	0	0	0	0	0	0	0	0	0	0	5
0:30	0	4	0	0	0	0	0	0	0	0	0	0	0	4
0:45	0	1	0	0	0	0	0	0	0	0	0	0	0	1
1:00	0	4	0	0	1	0	0	0	0	0	0	0	0	5
1:15	0	1	1	0	0	0	0	0	0	0	0	0	0	2
1:30	0	0	2	0	0	0	0	0	0	0	0	0	0	2
1:45	0	1	0	0	0	0	0	0	0	0	0	0	0	1
2:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
2:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30	0	1	0	0	0	0	0	0	0	0	0	0	0	1
2:45	0	1	0	0	0	0	0	0	0	0	0	0	0	1
3:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
3:15	0	2	0	0	0	0	0	0	0	0	0	0	0	2
3:30	0	1	0	0	0	0	0	0	0	0	0	0	0	1
3:45	0	1	1	0	0	0	0	0	0	0	0	0	0	2
4:00	0	0	1	0	0	0	0	0	0	0	0	0	0	1
4:15	0	1	1	0	0	0	0	0	0	0	0	0	0	2
4:30	0	2	0	0	1	0	0	0	0	0	0	0	0	3
4:45	0	1	1	0	0	0	0	0	0	0	0	0	0	2
5:00	0	2	2	0	0	0	0	0	0	0	0	0	0	4
5:15	0	7	2	0	0	0	0	0	0	0	0	0	0	9
5:30	0	14	4	0	0	0	0	0	0	0	0	0	0	18
5:45	0	11	3	0	0	0	0	0	0	0	0	0	0	14
6:00	0	21	3	0	0	0	0	0	0	0	0	0	0	24
6:15	0	33	6	0	0	0	0	0	0	0	0	0	0	39
6:30	0	75	4	1	3	0	0	0	0	0	0	0	0	83
6:45	0	98	11	0	6	0	1	0	0	0	0	0	0	116
7:00	0	125	18	2	11	1	0	0	0	0	0	0	0	157
7:15	0	126	26	0	6	0	0	0	0	0	0	0	0	158
7:30	0	146	19	0	12	0	0	1	0	0	0	0	0	178
7:45	0	150	31	0	4	0	0	1	0	0	0	0	0	186
8:00	0	135	18	0	5	0	0	0	0	0	0	0	0	158
8:15	0	76	17	0	4	1	0	0	0	0	0	0	0	98
8:30	0	67	9	1	6	0	0	0	0	0	0	0	0	83
8:45	0	49	5	1	3	1	0	0	0	0	0	0	0	59
9:00	0	43	5	0	8	0	0	0	0	0	0	0	0	56
9:15	0	31	11	0	4	0	0	1	0	0	0	0	0	47
9:30	0	29	3	1	6	0	0	0	1	0	0	0	0	40
9:45	0	44	15	0	7	0	0	0	1	0	0	0	0	67
10:00	0	47	8	0	5	1	0	0	0	0	0	0	0	61
10:15	0	43	11	1	2	0	0	0	0	0	0	0	0	57
10:30	0	55	7	1	8	0	0	0	0	0	0	0	0	71
10:45	0	33	15	1	4	0	0	0	0	0	0	0	0	53
11:00	0	51	10	1	1	0	0	1	0	0	0	0	0	64
11:15	0	44	10	0	3	0	0	0	0	0	0	0	0	57
11:30	0	38	10	0	2	0	0	0	0	0	1	0	0	51
11:45	0	52	10	1	1	0	0	0	0	0	1	0	0	65
12:00 PM	0	63	13	0	2	0	0	0	0	0	0	0	0	78
12:15	0	56	14	0	1	0	0	0	0	0	0	0	0	71
12:30	0	68	14	0	5	0	0	0	0	0	0	0	0	87
12:45	1	48	6	0	7	0	0	0	0	0	0	0	0	62
13:00	0	52	10	0	1	0	0	0	0	0	0	0	0	63
13:15	0	49	6	1	3	0	0	0	0	0	0	0	0	59
13:30	0	46	5	2	5	0	0	0	0	0	0	0	0	58
13:45	0	45	14	1	1	0	0	0	0	0	1	0	0	62
14:00	0	52	17	1	4	0	0	0	0	0	0	0	0	74
14:15	0	67	14	1	3	1	0	1	0	0	0	0	0	87
14:30	0	57	12	0	2	0	0	0	0	0	0	0	0	71
14:45	0	46	12	1	2	0	0	0	0	0	0	0	0	61
15:00	0	82	15	0	0	0	0	0	0	0	0	0	0	97
15:15	0	84	21	1	4	0	1	0	0	0	0	0	0	111
15:30	0	94	16	2	3	0	0	0	0	0	0	0	0	115
15:45	1	91	9	0	5	0	0	1	0	0	0	0	0	107
16:00	0	102	15	1	2	0	0	1	0	0	0	0	0	121
16:15	0	109	13	0	6	0	0	0	1	0	0	0	0	129
16:30	0	124	21	0	8	0	0	0	0	0	0	0	0	153
16:45	1	106	9	0	9	1	0	1	0	0	0	0	0	127
17:00	0	154	14	0	4	0	0	0	0	0	0	0	0	172
17:15	0	117	7	0	5	0	0	0	0	0	0	0	0	129
17:30	0	95	10	0	2	0	0	0	0	0	0	0	0	107
17:45	0	80	11	0	2	0	0	0	0	0	0	0	0	93
18:00	0	82	10	0	2	0	0	0	0	0	0	0	0	94
18:15	0	55	7	0	2	0	0	1	0	0	0	0	0	65
18:30	0	59	10	0	4	0	0	0	0	0	0	0	0	73
18:45	0	38	6	0	2	0	0	0	0	0	0	0	0	46
19:00	0	41	3	0	1	0	0	1	0	0	0	0	0	46
19:15	0	24	8	0	1	0	0	0	0	0	0	0	0	33
19:30	0	24	2	0	1	0	0	0	0	0	0	0	0	27
19:45	0	28	4	0	0	0	0	0	0	0	0	0	0	32
20:00	0	22	1	0	1	0	0	0	0	0	0	0	0	24
20:15	0	23	1	0	0	0	0	0	0	0	0	0	0	24
20:30	0	24	3	0	0	0	0	0	0	0	0	0	0	27
20:45	0	19	3	0	1	0	0	0	0	0	0	0	0	23
21:00	0	25	2	0	1	0	0	0	0	0	0	0	0	28
21:15	0	16	1	1	0	0	0	0	0	0	0	0	0	18
21:30	0	8	2	0	0	0	0	0	0	0	0	0	0	10
21:45	0	10	3	0	0	0	0	0	0	0	0	0	0	13
22:00	0	16	0	0	0	0	0	0	0	0	0	0	0	16
22:15	0	7	1	0	0	0	0	0	0	0	0	0	0	8
22:30	0	10	1	0	0	0	0	0	0	0	0	0	0	11
22:45	0	3	2	0	0	0	0	0	0	0	0	0	0	5
23:00	0	8	0	0	0	0	0	0	0	0	0	0	0	8
23:15	0	4	1	0	0	0	0	0	0	0	0	0	0	5
23:30	0	5	1	0	0	0	0	0	0	0	0	0	0	6
23:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	3	4114	670	23	215	6	2	10	3		3			5049
% of Totals	0%	81%	13%	0%	4%	0%	0%	0%	0%		0%			100%

	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
AM Volumes	0	1676	300	11	113	4	1	4	2	0	2	0	0	2113
% AM		33%	6%	0%	2%	0%	0%	0%	0%		0%			42%
AM Peak Hour		7:15	7:00	10:15	6:45	8:00	6:00	7:00	9:00		11:00			7:15
Volume		557	94	4	35	2	1	2	2		2			680
PM Volumes	3	2438	370	12	102	2	1	6	1	0	1	0	0	2936
% PM	0%	48%	7%	0%	2%	0%	0%	0%	0%		0%			58%
PM Peak Hour	12:00	16:30	14:45	13:15	16:15	13:30	14:30	15:15	15:30		13:00			16:15
Volume	1	501	64	5	27	1	1	2	1		1			581

Directional Peak Periods	AM 7-9			NOON 12-2			PM 4-6			Off Peak Volumes		
All Classes	Volume		%	Volume		%	Volume		%	Volume		%
	1077	⟷	21%	540	⟷	11%	1031	⟷	20%	2401	⟷	48%

Classification Definitions

1 Motorcycles	4 Buses	7 > =4-Axle Single Units	10 >=6-Axle Single Trailers	13 >=7-Axle Multi-Trailers
2 Passenger Cars	5 2-Axle, 6-Tire Single Units	8 <=4-Axle Single Trailers	11 <=5-Axle Multi-Trailers	
3 2-Axle, 4-Tire Single Units	6 3-Axle Single Units	9 5-Axle Single Trailers	12 6-Axle Multi-Trailers	

Prepared by National Data & Surveying Services

CLASSIFICATION

White Rock Rd Bet. Stonebriar Dr & Manchester Dr

Day: Thursday
Date: 12/1/2016

City: El Dorado Hills
Project #: CA16_7894_002

Summary

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
0:00 AM	0	8	0	0	0	0	0	0	0	0	0	0	0	8
0:15	0	8	0	0	0	0	0	0	0	0	0	0	0	8
0:30	0	7	0	0	0	0	0	0	0	0	0	0	0	7
0:45	0	5	0	0	0	0	0	0	0	0	0	0	0	5
1:00	0	7	0	0	1	0	0	0	0	0	0	0	0	8
1:15	0	1	1	0	0	0	0	0	0	0	0	0	0	2
1:30	0	1	2	0	0	0	0	0	0	0	0	0	0	3
1:45	0	2	0	0	0	0	0	0	0	0	0	0	0	2
2:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
2:15	0	1	0	0	0	0	0	0	0	0	0	0	0	1
2:30	0	1	0	0	0	0	0	0	0	0	0	0	0	1
2:45	0	2	0	0	0	0	0	0	0	0	0	0	0	2
3:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
3:15	0	2	0	0	0	0	0	0	0	0	0	0	0	2
3:30	0	6	0	0	0	0	0	0	0	0	0	0	0	6
3:45	0	5	1	0	0	0	0	0	0	0	0	0	0	6
4:00	0	0	1	0	0	0	0	0	0	0	0	0	0	1
4:15	0	1	1	0	0	0	0	0	0	0	0	0	0	2
4:30	0	3	0	0	1	0	0	0	0	0	0	0	0	4
4:45	0	3	1	0	1	0	0	0	0	0	0	0	0	5
5:00	0	9	3	0	0	0	0	0	0	0	0	0	0	12
5:15	0	13	3	0	1	0	0	0	0	0	0	0	0	17
5:30	0	28	4	0	1	0	0	0	0	0	0	0	0	33
5:45	1	35	6	0	0	0	0	0	0	0	0	0	0	42
6:00	0	35	5	0	3	0	0	0	0	0	0	0	0	43
6:15	0	52	7	0	0	0	0	0	0	0	0	0	0	59
6:30	0	103	6	2	4	0	0	0	0	0	0	0	0	115
6:45	0	166	20	0	13	0	2	0	0	0	0	0	0	201
7:00	0	197	29	3	12	2	0	0	0	0	0	0	0	243
7:15	0	193	32	1	8	0	0	0	0	0	0	0	0	234
7:30	0	221	31	0	15	1	0	1	0	0	0	0	0	269
7:45	0	252	38	0	9	1	0	2	0	0	0	0	0	302
8:00	0	199	26	0	6	1	0	0	1	0	0	0	0	233
8:15	0	158	26	1	5	1	0	0	1	0	0	0	0	192
8:30	0	154	20	2	8	1	0	0	0	0	0	0	0	185
8:45	0	125	12	2	4	2	0	2	0	0	0	0	0	147
9:00	0	108	9	1	12	0	0	0	1	0	0	0	0	131
9:15	0	68	16	0	7	0	0	1	0	0	0	0	0	92
9:30	0	75	8	2	10	0	0	0	1	0	0	0	0	96
9:45	0	91	25	0	9	0	0	0	1	0	0	0	0	126
10:00	0	98	11	0	7	2	0	0	0	0	0	0	0	118
10:15	1	89	21	1	4	0	0	1	0	0	0	0	0	117
10:30	0	120	14	2	11	0	0	0	1	0	3	0	0	151
10:45	1	82	23	1	9	0	0	0	1	0	0	0	0	117
11:00	0	92	18	1	3	0	0	1	0	0	0	0	0	115
11:15	0	110	18	0	6	0	0	0	0	0	0	0	0	134
11:30	0	92	18	0	9	0	0	0	0	0	1	0	0	120
11:45	0	112	21	1	5	1	0	0	0	0	1	0	0	141
12:00 PM	0	120	25	0	4	0	0	0	0	0	0	0	0	149
12:15	0	119	17	1	6	0	0	0	0	0	0	0	0	143
12:30	0	123	19	0	8	1	0	0	0	0	0	0	0	151
12:45	1	107	12	0	11	1	0	0	0	0	0	0	0	132
13:00	0	123	25	0	5	0	0	0	0	0	0	0	0	153
13:15	0	98	14	1	3	0	0	0	0	0	0	0	0	116
13:30	1	112	14	3	8	0	0	0	0	0	0	0	0	138
13:45	0	111	26	1	1	0	0	0	0	0	1	0	0	140
14:00	0	120	22	1	6	0	0	0	0	0	0	0	0	149
14:15	0	134	21	1	8	1	0	1	0	0	0	0	0	166
14:30	0	139	19	0	6	0	0	0	0	0	0	0	0	164
14:45	1	137	29	2	5	0	0	0	0	0	0	0	0	174
15:00	0	174	24	0	6	0	0	0	0	0	0	0	0	204
15:15	2	176	30	1	7	0	1	0	0	0	0	0	0	217
15:30	0	168	28	4	5	0	0	0	0	0	0	0	0	205
15:45	1	194	28	0	12	0	0	1	0	0	0	0	0	236
16:00	1	187	20	2	4	1	0	1	0	0	0	0	0	216
16:15	0	230	27	0	9	1	0	0	1	0	0	0	0	268
16:30	0	244	35	0	14	1	0	0	0	0	0	0	0	294
16:45	1	218	21	0	13	1	0	1	0	0	0	0	0	255
17:00	1	294	29	0	7	0	0	0	0	0	0	0	0	331
17:15	0	264	25	0	6	0	0	0	0	0	0	0	0	295
17:30	0	233	23	0	7	0	0	0	0	0	0	0	0	263
17:45	0	187	30	0	4	0	0	0	0	0	0	0	0	221
18:00	0	165	21	0	6	0	0	0	0	0	0	0	0	192
18:15	0	127	16	0	3	0	0	1	0	0	0	0	0	147
18:30	0	124	18	0	7	0	0	0	0	0	0	0	0	149
18:45	0	95	10	0	4	0	0	0	0	0	0	0	0	109
19:00	0	76	8	0	3	0	0	1	0	0	0	0	0	88
19:15	0	58	10	0	2	0	0	0	0	0	0	0	0	70
19:30	0	57	7	0	2	0	0	0	0	0	0	0	0	66
19:45	0	59	7	0	1	0	0	0	0	0	0	0	0	67
20:00	0	46	2	1	2	0	0	0	0	0	0	0	0	51
20:15	0	45	3	0	0	0	0	0	0	0	0	0	0	48
20:30	0	34	4	0	0	0	0	0	0	0	0	0	0	38
20:45	0	40	6	0	1	0	0	0	0	0	0	0	0	47
21:00	0	41	2	0	1	0	0	0	0	0	0	0	0	44
21:15	0	29	3	1	0	0	0	0	0	0	0	0	0	33
21:30	0	27	4	0	0	0	0	0	0	0	0	0	0	31
21:45	0	26	5	1	0	0	0	0	0	0	0	0	0	32
22:00	0	24	0	0	0	0	0	0	0	0	0	0	0	24
22:15	0	12	2	0	0	0	0	0	0	0	0	0	0	14
22:30	0	21	2	0	0	0	0	0	0	0	0	0	0	23
22:45	0	6	3	0	0	0	0	0	0	0	0	0	0	9
23:00	0	12	0	0	1	0	0	0	0	0	0	0	0	13
23:15	0	5	1	0	0	0	0	0	0	0	0	0	0	6
23:30	0	7	1	0	0	0	0	0	0	0	0	0	0	8
23:45	0	5	0	0	1	0	0	0	0	0	0	0	0	6
Totals	12	8296	1175	40	383	19	3	14	8		6			9956
% of Totals	0%	83%	12%	0%	4%	0%	0%	0%	0%		0%			100%

AM Volumes	3	3143	477	20	184	12	2	8	7	0	5	0	0	3861
% AM	0%	32%	5%	0%	2%	0%	0%	0%	0%		0%			39%
AM Peak Hour	10:00	7:15	7:00	6:30	6:45	8:00	6:00	7:00	9:00		9:45			7:00
Volume	2	865	130	6	48	5	2	3	3		3			1048
PM Volumes	9	5153	698	20	199	7	1	6	1	0	1	0	0	6095
% PM	0%	52%	7%	0%	2%	0%	0%	0%	0%		0%			61%
PM Peak Hour	15:15	16:30	16:15	14:45	16:15	16:00	14:30	15:15	15:30		13:00			16:30
Volume	4	1020	112	7	43	4	1	2	1		1			1175

Directional Peak Periods	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
All Classes	Volume	%	Volume	%	Volume	%	Volume	%
	1805 ⟷	18%	1122 ⟷	11%	2143 ⟷	22%	4886 ⟷	49%

Classification Definitions

1 Motorcycles	**4** Buses	**7** > =4-Axle Single Units	**10** >=6-Axle Single Trailers	**13** >=7-Axle Multi-Trailers
2 Passenger Cars	**5** 2-Axle, 6-Tire Single Units	**8** <=4-Axle Single Trailers	**11** <=5-Axle Multi-Trailers	
3 2-Axle, 4-Tire Single Units	**6** 3-Axle Single Units	**9** 5-Axle Single Trailers	**12** 6-Axle Multi-Trailers	

APPENDIX B

EXISTING CONDITIONS
LEVEL OF SERVICE CALCULATION WORKSHEETS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	8	261	5	17	617	52	10	0	22	93	0	54
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	9	284	5	18	671	57	11	0	24	101	0	59
Adj No. of Lanes	1	1	0	1	1	1	0	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	17	910	16	32	945	803	16	0	35	165	0	147
Arrive On Green	0.01	0.50	0.50	0.02	0.51	0.51	0.03	0.00	0.03	0.09	0.00	0.09
Sat Flow, veh/h	1774	1825	32	1774	1863	1583	515	0	1124	1774	0	1583
Grp Volume(v), veh/h	9	0	289	18	671	57	35	0	0	101	0	59
Grp Sat Flow(s),veh/h/ln	1774	0	1857	1774	1863	1583	1639	0	0	1774	0	1583
Q Serve(g_s), s	0.2	0.0	4.1	0.4	12.4	0.8	0.9	0.0	0.0	2.4	0.0	1.6
Cycle Q Clear(g_c), s	0.2	0.0	4.1	0.4	12.4	0.8	0.9	0.0	0.0	2.4	0.0	1.6
Prop In Lane	1.00		0.02	1.00		1.00	0.31		0.69	1.00		1.00
Lane Grp Cap(c), veh/h	17	0	926	32	945	803	52	0	0	165	0	147
V/C Ratio(X)	0.54	0.00	0.31	0.57	0.71	0.07	0.68	0.00	0.00	0.61	0.00	0.40
Avail Cap(c_a), veh/h	159	0	2331	199	2380	2023	331	0	0	557	0	497
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	22.0	0.0	6.6	21.7	8.5	5.6	21.4	0.0	0.0	19.5	0.0	19.1
Incr Delay (d2), s/veh	24.0	0.0	0.2	14.8	1.0	0.0	14.3	0.0	0.0	3.6	0.0	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	2.1	0.3	6.4	0.4	0.6	0.0	0.0	1.3	0.0	0.8
LnGrp Delay(d),s/veh	46.0	0.0	6.8	36.6	9.5	5.7	35.7	0.0	0.0	23.1	0.0	20.8
LnGrp LOS	D		A	D	A	A	D			C		C
Approach Vol, veh/h		298			746			35			160	
Approach Delay, s/veh		8.0			9.8			35.7			22.3	
Approach LOS		A			A			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		5.4	4.8	26.3		8.1	4.4	26.6
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		9.0	5.0	56.0		14.0	4.0	57.0
Max Q Clear Time (g_c+I1), s		2.9	2.4	6.1		4.4	2.2	14.4
Green Ext Time (p_c), s		0.0	0.0	8.4		0.4	0.0	8.3

Intersection Summary	
HCM 2010 Ctrl Delay	11.7
HCM 2010 LOS	B

Intersection	
Intersection Delay, s/veh	7.7
Intersection LOS	A

Movement	WBU	WBL	WBR	NBU	NBT	NBR	SBU	SBL	SBT
Vol, veh/h	0	20	0	0	32	10	0	1	149
Peak Hour Factor	0.92	0.93	0.93	0.92	0.93	0.93	0.92	0.93	0.93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	22	0	0	34	11	0	1	160
Number of Lanes	0	1	0	0	1	0	0	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	7.7	7.2	7.9
HCM LOS	A	A	A

Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	100%	1%
Vol Thru, %	76%	0%	99%
Vol Right, %	24%	0%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	42	20	150
LT Vol	0	20	1
Through Vol	32	0	149
RT Vol	10	0	0
Lane Flow Rate	45	22	161
Geometry Grp	1	1	1
Degree of Util (X)	0.05	0.027	0.179
Departure Headway (Hd)	3.949	4.488	4.006
Convergence, Y/N	Yes	Yes	Yes
Cap	902	787	895
Service Time	1.995	2.576	2.031
HCM Lane V/C Ratio	0.05	0.028	0.18
HCM Control Delay	7.2	7.7	7.9
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.2	0.1	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	51	504	16	48	463	77	16	0	34	58	0	26
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	59	579	18	55	532	89	18	0	39	67	0	30
Adj No. of Lanes	1	1	0	1	1	1	0	1	0	1	1	0
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	82	902	28	78	931	791	23	0	50	110	0	98
Arrive On Green	0.05	0.50	0.50	0.04	0.50	0.50	0.04	0.00	0.04	0.06	0.00	0.06
Sat Flow, veh/h	1774	1797	56	1774	1863	1583	518	0	1121	1774	0	1583
Grp Volume(v), veh/h	59	0	597	55	532	89	57	0	0	67	0	30
Grp Sat Flow(s),veh/h/ln	1774	0	1853	1774	1863	1583	1639	0	0	1774	0	1583
Q Serve(g_s), s	1.5	0.0	10.9	1.4	9.2	1.4	1.6	0.0	0.0	1.7	0.0	0.8
Cycle Q Clear(g_c), s	1.5	0.0	10.9	1.4	9.2	1.4	1.6	0.0	0.0	1.7	0.0	0.8
Prop In Lane	1.00		0.03	1.00		1.00	0.32		0.68	1.00		1.00
Lane Grp Cap(c), veh/h	82	0	930	78	931	791	74	0	0	110	0	98
V/C Ratio(X)	0.72	0.00	0.64	0.71	0.57	0.11	0.77	0.00	0.00	0.61	0.00	0.31
Avail Cap(c_a), veh/h	424	0	2174	385	2145	1823	320	0	0	424	0	378
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.7	0.0	8.4	21.7	8.1	6.1	21.7	0.0	0.0	21.1	0.0	20.7
Incr Delay (d2), s/veh	11.4	0.0	0.7	11.1	0.6	0.1	15.6	0.0	0.0	5.4	0.0	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	5.7	0.9	4.7	0.6	1.0	0.0	0.0	1.0	0.0	0.4
LnGrp Delay(d),s/veh	33.0	0.0	9.2	32.8	8.6	6.2	37.4	0.0	0.0	26.5	0.0	22.4
LnGrp LOS	C		A	C	A	A	D			C		C
Approach Vol, veh/h		656			676			57			97	
Approach Delay, s/veh		11.3			10.3			37.4			25.2	
Approach LOS		B			B			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		6.1	6.0	27.1		6.8	6.1	27.0
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		9.0	10.0	54.0		11.0	11.0	53.0
Max Q Clear Time (g_c+I1), s		3.6	3.4	12.9		3.7	3.5	11.2
Green Ext Time (p_c), s		0.1	0.0	10.2		0.1	0.1	10.2

Intersection Summary	
HCM 2010 Ctrl Delay	12.7
HCM 2010 LOS	B

Intersection	
Intersection Delay, s/veh	7.6
Intersection LOS	A

Movement	WBU	WBL	WBR	NBU	NBT	NBR	SBU	SBL	SBT
Vol, veh/h	0	10	1	0	126	17	0	1	68
Peak Hour Factor	0.92	0.98	0.98	0.92	0.98	0.98	0.92	0.98	0.98
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	10	1	0	129	17	0	1	69
Number of Lanes	0	1	0	0	1	0	0	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	7.6	7.7	7.5
HCM LOS	A	A	A

Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	91%	1%
Vol Thru, %	88%	0%	99%
Vol Right, %	12%	9%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	143	11	69
LT Vol	0	10	1
Through Vol	126	0	68
RT Vol	17	1	0
Lane Flow Rate	146	11	70
Geometry Grp	1	1	1
Degree of Util (X)	0.159	0.014	0.08
Departure Headway (Hd)	3.935	4.433	4.065
Convergence, Y/N	Yes	Yes	Yes
Cap	912	797	879
Service Time	1.957	2.52	2.098
HCM Lane V/C Ratio	0.16	0.014	0.08
HCM Control Delay	7.7	7.6	7.5
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.6	0	0.3

DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*NKL*	Highway / Direction of Travel	*White Rock Road - EB/NB*
Agency or Company	*MRO Engineers, Inc.*	From/To	*Stonebriar Dr. to County Line*
Date Performed	*12/19/2016*	Jurisdiction	*El Dorado County, CA*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*Existing Conditions*

Project Description: *Folsom Heights*

Input Data

☐ Class I highway ☐ Class II highway ☑ Class III highway

Terrain ☑ Level ☐ Rolling

Grade Length mi	Up/down
Peak-hour factor, PHF	*0.83*
No-passing zone	*100%*
% Trucks and Buses , P_T	*15* %
% Recreational vehicles, P_R	*0%*
Access points *mi*	*3*/mi

Analysis direction vol., V_d	*274*veh/h
Opposing direction vol., V_o	*681*veh/h
Shoulder width ft	*6.0*
Lane Width ft	*12.0*
Segment Length mi	*0.3*

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.4*	*1.1*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.943*	*0.985*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*1.00*	*1.00*
Demand flow rate[2], v_i (pc/h) $v_i=V_i$ / (PHF* $f_{g,ATS}$ * $f_{HV,ATS}$)	*350*	*833*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
		Base free-flow speed[4], BFFS	*60.0* *mi/h*
		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*0.0* *mi/h*
Mean speed of sample[3], S_{FM}		Adj. for access points[4], f_A (Exhibit 15-8)	*0.8* *mi/h*
Total demand flow rate, both directions, *v*		Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*59.3* *mi/h*
Free-flow speed, FFS=S_{FM}+0.00776(*v*/ $f_{HV,ATS}$)		Average travel speed, ATS_d=FFS-0.00776($v_{d,ATS}$ + $v_{o,ATS}$) - $f_{np,ATS}$	*48.7* *mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*1.4* *mi/h*	Percent free flow speed, PFFS	*82.2* *%*

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.1*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.985*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*1.00*	*1.00*
Directional flow rate[2], v_i(pc/h) $v_i=V_i$/(PHF*$f_{HV,PTSF}$* $f_{g,PTSF}$)	*335*	*820*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*43.5*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*28.2*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*51.7*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*C*
Volume to capacity ratio, *v/c*	*0.53*
Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1700*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1700*

Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*82.2*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*330.1*
Effective width, Wv (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*7.17*
Bicycle level of service (Exhibit 15-4)	*F*
Notes	
1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain. 2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F. 3. For the analysis direction only and for v>200 veh/h. 4. For the analysis direction only 5. Exhibit 15-20 provides coefficients a and b for Equation 15-10. 6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.	

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DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	*NKL*	Highway / Direction of Travel	*White Rock Road - WB/SB*
Agency or Company	*MRO Engineers, Inc.*	From/To	*Stonebriar Dr. to County Line*
Date Performed	*12/19/2016*	Jurisdiction	*El Dorado County, CA*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*Existing Conditions*

Project Description: *Folsom Heights*

Input Data

Analysis direction vol., V_d	*681*veh/h	☐ Class I highway ☐ Class II highway ☑ Class III highway	
Opposing direction vol., V_o	*274*veh/h	Terrain ☑ Level ☐ Rolling	
Shoulder width ft	*6.0*	Grade Length mi Up/down	
Lane Width ft	*12.0*	Peak-hour factor, PHF	*0.94*
Segment Length mi	*0.3*	No-passing zone	*100%*
		% Trucks and Buses , P_T	*10 %*
		% Recreational vehicles, P_R	*0%*
		Access points *mi*	*3*/mi

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.1*	*1.4*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.990*	*0.962*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*1.00*	*1.00*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF^* f_{g,ATS} * f_{HV,ATS})$	*732*	*303*

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
		Base free-flow speed[4], BFFS	*60.0 mi/h*
		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*0.0 mi/h*
Mean speed of sample[3], S_{FM}		Adj. for access points[4], f_A (Exhibit 15-8)	*0.8 mi/h*
Total demand flow rate, both directions, *v*		Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*59.3 mi/h*
Free-flow speed, $FFS=S_{FM}+0.00776(v/f_{HV,ATS})$		Average travel speed, $ATS_d=FFS-0.00776(v_{d,ATS}+v_{o,ATS})-f_{np,ATS}$	*47.3 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*4.0 mi/h*	Percent free flow speed, PFFS	*79.8 %*

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.1*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*0.990*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*1.00*	*1.00*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF^*f_{HV,PTSF}{}^* f_{g,PTSF})$	*724*	*294*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*60.6*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*30.7*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}{}^*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*82.4*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*C*
Volume to capacity ratio, *v/c*	*0.53*
Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1700*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1700*

Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*79.8*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*724.5*
Effective width, Wv (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*5.28*
Bicycle level of service (Exhibit 15-4)	*E*

Notes

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	*NKL*	Highway / Direction of Travel	*White Rock Road - EB/NB*
Agency or Company	*MRO Engineers, Inc.*	From/To	*Stonebriar Drive to Manchester*
Date Performed	*12/19/2016*	Jurisdiction	*El Dorado County, CA*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*Existing Conditions*

Project Description: *Folsom Heights*

Input Data

Analysis direction vol., V_d	*376*veh/h	☐ Class I highway ☐ Class II highway ☑ Class III highway	
Opposing direction vol., V_o	*686*veh/h	Terrain ☑ Level ☐ Rolling	
Shoulder width ft	*6.0*	Grade Length mi Up/down	
Lane Width ft	*12.0*	Peak-hour factor, PHF	*0.83*
Segment Length mi	*0.3*	No-passing zone	*100%*
		% Trucks and Buses , P_T	*5* %
		% Recreational vehicles, P_R	*0%*
		Access points *mi*	*3*/mi

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.2*	*1.1*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV,ATS}$=1/ (1+ P_T (E_T -1)+P_R (E_R -1))	*0.990*	*0.995*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*1.00*	*1.00*
Demand flow rate[2], v_i (pc/h) $v_i=V_i$ / (PHF* $f_{g,ATS}$ * $f_{HV,ATS}$)	*458*	*831*

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*60.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*0.0 mi/h*
Free-flow speed, FFS=S_{FM}+0.00776(*v*/ $f_{HV,ATS}$)		Adj. for access points[4], f_A (Exhibit 15-8)	*0.8 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*1.4 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*59.3 mi/h*
		Average travel speed, ATS_d=FFS-0.00776($v_{d,ATS}$ + $v_{o,ATS}$) - $f_{np,ATS}$	*47.9 mi/h*
		Percent free flow speed, PFFS	*80.8 %*

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, f_{HV}=1/ (1+ P_T(E_T-1)+P_R(E_R-1))	*1.000*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*1.00*	*1.00*
Directional flow rate[2], v_i(pc/h) $v_i=V_i$/(PHF*$f_{HV,PTSF}$* $f_{g,PTSF}$)	*453*	*827*
Base percent time-spent-following[4], $BPTSF_d$(%)=100(1-$e^{av_d^b}$)	*52.6*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*27.7*	
Percent time-spent-following, $PTSF_d$(%)=$BPTSF_d$+$f_{np,PTSF}$ *($v_{d,PTSF}$ / $v_{d,PTSF}$ + $v_{o,PTSF}$)	*62.4*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*C*
Volume to capacity ratio, *v/c*	*0.53*
Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1700*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1700*

Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*80.8*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*453.0*
Effective width, Wv (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*3.27*
Bicycle level of service (Exhibit 15-4)	*C*
Notes	
1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain. 2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F. 3. For the analysis direction only and for v>200 veh/h. 4. For the analysis direction only 5. Exhibit 15-20 provides coefficients a and b for Equation 15-10. 6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.	

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DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	*NKL*	Highway / Direction of Travel	*White Rock Road - WB/SB*
Agency or Company	*MRO Engineers, Inc.*	From/To	*Stonebriar Drive to Manchester*
Date Performed	*12/19/2016*	Jurisdiction	*El Dorado County, CA*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*Existing Conditions*

Project Description: *Folsom Heights*

Input Data

	☐ Class I highway ☐ Class II highway ☑ Class III highway
	Terrain ☑ Level ☐ Rolling
	Grade Length mi Up/down
	Peak-hour factor, PHF *0.91*
	No-passing zone *100%*
Analysis direction vol., V_d *686*veh/h	% Trucks and Buses , P_T *4* %
Opposing direction vol., V_o *376*veh/h	% Recreational vehicles, P_R *0%*
Shoulder width ft *6.0*	Access points *mi* *3*/mi
Lane Width ft *12.0*	
Segment Length mi *0.3*	

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.1*	*1.3*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.996*	*0.988*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*1.00*	*1.00*
Demand flow rate[2], v_i (pc/h) $v_i=V_i$ / (PHF* $f_{g,ATS}$ * $f_{HV,ATS}$)	*757*	*418*

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
		Base free-flow speed[4], BFFS	*60.0 mi/h*
		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*0.0 mi/h*
Mean speed of sample[3], S_{FM}		Adj. for access points[4], f_A (Exhibit 15-8)	*0.8 mi/h*
Total demand flow rate, both directions, *v*		Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*59.3 mi/h*
Free-flow speed, FFS=S_{FM}+0.00776(*v*/ $f_{HV,ATS}$)		Average travel speed, ATS_d=FFS-0.00776($v_{d,ATS}$ + $v_{o,ATS}$) - $f_{np,ATS}$	*46.6 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*3.6 mi/h*	Percent free flow speed, PFFS	*78.6 %*

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*1.00*	*1.00*
Directional flow rate[2], v_i(pc/h) $v_i=V_i$/(PHF*$f_{HV,PTSF}$* $f_{g,PTSF}$)	*754*	*413*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*64.0*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*30.3*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*83.6*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*C*
Volume to capacity ratio, *v/c*	*0.53*
Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1700*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1700*

Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*78.6*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*753.8*
Effective width, Wv (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*3.24*
Bicycle level of service (Exhibit 15-4)	*C*
Notes	
1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain. 2. If $v_i(v_d$ or $v_o)$ >=1,700 pc/h, terminate analysis--the LOS is F. 3. For the analysis direction only and for v>200 veh/h. 4. For the analysis direction only 5. Exhibit 15-20 provides coefficients a and b for Equation 15-10. 6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.	

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DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*NKL*	Highway / Direction of Travel	*White Rock Road - EB/NB*
Agency or Company	*MRO Engineers, Inc.*	From/To	*Stonebriar Dr. to County Line*
Date Performed	*12/19/2016*	Jurisdiction	*El Dorado County, CA*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*Existing Conditions*

Project Description: *Folsom Heights*

Input Data

Analysis direction vol., V_d	*571*veh/h	☐ Class I highway ☐ Class II highway ☑ Class III highway	
Opposing direction vol., V_o	*505*veh/h	Terrain ☑ Level ☐ Rolling	
Shoulder width ft	*6.0*	Grade Length mi Up/down	
Lane Width ft	*12.0*	Peak-hour factor, PHF	*0.93*
Segment Length mi	*0.3*	No-passing zone	*100%*
		% Trucks and Buses , P_T	*12* %
		% Recreational vehicles, P_R	*0%*
		Access points *mi*	*3*/mi

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.1*	*1.2*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV,ATS}$=1/ (1+ P_T (E_T -1)+P_R (E_R -1))	*0.988*	*0.977*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*1.00*	*1.00*
Demand flow rate[2], v_i (pc/h) v_i=V_i / (PHF* $f_{g,ATS}$ * $f_{HV,ATS}$)	*621*	*556*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*60.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*0.0 mi/h*
Free-flow speed, FFS=S_{FM}+0.00776(*v*/ $f_{HV,ATS}$)		Adj. for access points[4], f_A (Exhibit 15-8)	*0.8 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*2.4 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*59.3 mi/h*
		Average travel speed, ATS_d=FFS-0.00776($v_{d,ATS}$ + $v_{o,ATS}$) - $f_{np,ATS}$	*47.7 mi/h*
		Percent free flow speed, PFFS	*80.6 %*

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, f_{HV}=1/ (1+ P_T(E_T-1)+P_R(E_R-1))	*1.000*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*1.00*	*1.00*
Directional flow rate[2], v_i(pc/h) v_i=V_i/(PHF*$f_{HV,PTSF}$* $f_{g,PTSF}$)	*614*	*543*
Base percent time-spent-following[4], $BPTSF_d$(%)=100(1-$e^{av_d^b}$)	*58.5*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*35.0*	
Percent time-spent-following, $PTSF_d$(%)=$BPTSF_d$+$f_{np,PTSF}$ *($v_{d,PTSF}$ / $v_{d,PTSF}$ + $v_{o,PTSF}$)	*77.1*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*C*
Volume to capacity ratio, *v/c*	*0.53*
Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1700*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1700*

Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*80.6*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*614.0*
Effective width, Wv (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*6.05*
Bicycle level of service (Exhibit 15-4)	*F*
Notes	

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If $v_i(v_d$ or $v_o)$ >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	*NKL*	Highway / Direction of Travel	*White Rock Road - WB/SB*
Agency or Company	*MRO Engineers, Inc.*	From/To	*Stonebriar Dr. to County Line*
Date Performed	*12/19/2016*	Jurisdiction	*El Dorado County, CA*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*Existing Conditions*

Project Description: *Folsom Heights*

Input Data

Analysis direction vol., V_d	*505*veh/h	☐ Class I highway ☐ Class II highway ☑ Class III highway	
Opposing direction vol., V_o	*571*veh/h	Terrain ☑ Level ☐ Rolling	
Shoulder width ft	*6.0*	Grade Length mi Up/down	
Lane Width ft	*12.0*	Peak-hour factor, PHF	*0.88*
Segment Length mi	*0.3*	No-passing zone	*100%*
		% Trucks and Buses , P_T	*9* %
		% Recreational vehicles, P_R	*0%*
		Access points *mi*	*3*/mi

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.1*	*1.1*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV,ATS}$=1/ (1+ P_T (E_T -1)+P_R (E_R -1))	*0.991*	*0.991*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*1.00*	*1.00*
Demand flow rate[2], v_i (pc/h) v_i=V_i / (PHF* $f_{g,ATS}$ * $f_{HV,ATS}$)	*579*	*655*

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
		Base free-flow speed[4], BFFS	*60.0 mi/h*
Mean speed of sample[3], S_{FM}		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*0.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for access points[4], f_A (Exhibit 15-8)	*0.8 mi/h*
Free-flow speed, FFS=S_{FM}+0.00776(*v*/ $f_{HV,ATS}$)		Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*59.3 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*1.8 mi/h*	Average travel speed, ATS_d=FFS-0.00776($v_{d,ATS}$ + $v_{o,ATS}$) - $f_{np,ATS}$	*47.9 mi/h*
		Percent free flow speed, PFFS	*80.8 %*

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, f_{HV}=1/ (1+ P_T(E_T-1)+P_R(E_R-1))	*1.000*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*1.00*	*1.00*
Directional flow rate[2], v_i(pc/h) v_i=V_i/(PHF*$f_{HV,PTSF}$* $f_{g,PTSF}$)	*574*	*649*
Base percent time-spent-following[4], $BPTSF_d$(%)=100(1-$e^{av_d^b}$)	*57.5*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*33.1*	
Percent time-spent-following, $PTSF_d$(%)=$BPTSF_d$+$f_{np,PTSF}$ *($v_{d,PTSF}$ / $v_{d,PTSF}$ + $v_{o,PTSF}$)	*73.0*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*C*
Volume to capacity ratio, *v/c*	*0.53*
Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1700*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1700*

Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	80.8
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	573.9
Effective width, Wv (Eq. 15-29) ft	24.00
Effective speed factor, S_t (Eq. 15-30)	4.79
Bicycle level of service score, BLOS (Eq. 15-31)	4.77
Bicycle level of service (Exhibit 15-4)	E
Notes	
1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain. 2. If $v_i(v_d$ or $v_o)$ >=1,700 pc/h, terminate analysis--the LOS is F. 3. For the analysis direction only and for v>200 veh/h. 4. For the analysis direction only 5. Exhibit 15-20 provides coefficients a and b for Equation 15-10. 6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.	

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DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	*NKL*	Highway / Direction of Travel	*White Rock Road - EB/NB*
Agency or Company	*MRO Engineers, Inc.*	From/To	*Stonebriar Drive to Manchester*
Date Performed	*12/19/2016*	Jurisdiction	*El Dorado County, CA*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*Existing Conditions*

Project Description: *Folsom Heights*

Input Data

☐ Class I highway ☐ Class II highway ☑ Class III highway

Terrain ☑ Level ☐ Rolling

Analysis direction vol., V_d	*596*veh/h
Opposing direction vol., V_o	*588*veh/h
Shoulder width ft	*6.0*
Lane Width ft	*12.0*
Segment Length mi	*0.3*
Grade Length mi	Up/down
Peak-hour factor, PHF	*0.92*
No-passing zone	*100%*
% Trucks and Buses , P_T	*3* %
% Recreational vehicles, P_R	*0%*
Access points *mi*	*3*/mi

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.1*	*1.1*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.997*	*0.997*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*1.00*	*1.00*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF^* f_{g,ATS} * f_{HV,ATS})$	*650*	*641*

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*60.0* *mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*0.0* *mi/h*
Free-flow speed, $FFS=S_{FM}+0.00776(v/f_{HV,ATS})$		Adj. for access points[4], f_A (Exhibit 15-8)	*0.8* *mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*1.9* *mi/h*	Free-flow speed, FFS $(FSS=BFFS-f_{LS}-f_A)$	*59.3* *mi/h*
		Average travel speed, $ATS_d=FFS-0.00776(v_{d,ATS}+v_{o,ATS})-f_{np,ATS}$	*47.4* *mi/h*
		Percent free flow speed, PFFS	*79.9* *%*

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*1.00*	*1.00*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF^*f_{HV,PTSF}^* f_{g,PTSF})$	*648*	*639*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*60.7*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*31.9*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*76.8*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*C*
Volume to capacity ratio, *v/c*	*0.53*
Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1700*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1700*

Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*79.9*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*647.8*
Effective width, Wv (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*2.89*
Bicycle level of service (Exhibit 15-4)	*C*

Notes

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If $v_i(v_d$ or $v_o)$ >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	*NKL*	Highway / Direction of Travel	*White Rock Road - WB/SB*
Agency or Company	*MRO Engineers, Inc.*	From/To	*Stonebriar Drive to Manchester*
Date Performed	*12/19/2016*	Jurisdiction	*El Dorado County, CA*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*Existing Conditions*

Project Description: *Folsom Heights*

Input Data

☐ Class I highway ☐ Class II highway ☑ Class III highway

Terrain ☑ Level ☐ Rolling

Analysis direction vol., V_d	*588*veh/h
Opposing direction vol., V_o	*596*veh/h
Shoulder width ft	*6.0*
Lane Width ft	*12.0*
Segment Length mi	*0.3*
Grade Length mi Up/down	
Peak-hour factor, PHF	*0.84*
No-passing zone	*100%*
% Trucks and Buses , P_T	*5* %
% Recreational vehicles, P_R	*0%*
Access points *mi*	*3*/mi

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.1*	*1.1*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.995*	*0.995*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*1.00*	*1.00*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF^* f_{g,ATS} * f_{HV,ATS})$	*704*	*713*

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
		Base free-flow speed[4], BFFS	*60.0 mi/h*
Mean speed of sample[3], S_{FM}		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*0.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for access points[4], f_A (Exhibit 15-8)	*0.8 mi/h*
Free-flow speed, $FFS=S_{FM}+0.00776(v/f_{HV,ATS})$		Free-flow speed, FFS $(FSS=BFFS-f_{LS}-f_A)$	*59.3 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*1.7 mi/h*	Average travel speed, $ATS_d=FFS-0.00776(v_{d,ATS}+v_{o,ATS})-f_{np,ATS}$	*46.6 mi/h*
		Percent free flow speed, PFFS	*78.6 %*

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*1.00*	*1.00*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF^*f_{HV,PTSF}*f_{g,PTSF})$	*700*	*710*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*64.9*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*28.4*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*79.0*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*C*
Volume to capacity ratio, *v/c*	*0.53*
Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1700*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1700*

Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*78.6*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*700.0*
Effective width, Wv (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*3.49*
Bicycle level of service (Exhibit 15-4)	*C*
Notes	
1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain. 2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F. 3. For the analysis direction only and for v>200 veh/h. 4. For the analysis direction only 5. Exhibit 15-20 provides coefficients a and b for Equation 15-10. 6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.	

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APPENDIX C

TRIP GENERATION COMPARISON
FOLSOM HEIGHTS COMMERCIAL

Table C-1
Trip Generation Comparison[1]
Folsom Heights Commercial

Scenario	Land Use		Size[2]	Daily Trips	AM Peak Hour			PM Peak Hour		
					In	Out	Total	In	Out	Total
Proposed Commercial (11.8 Acres)	Option A - Shopping Center		128,500 SF	8,000	113	69	182	340	369	709
Proposed Commercial (11.8 Acres)	Option B	Supermarket	50,000 SF	5,115	105	65	170	242	232	474
		Retail	78,500 SF	5,800	83	51	134	244	265	509
		TOTAL	128,500 SF	10,915	188	116	304	486	497	983

Notes:
1 Reference: Institute of Transportation Engineers, *Trip Generation Manual*, Ninth Edition, 2012.
2 Assuming floor area ratio (FAR) of 0.25

APPENDIX D

INTERNAL TRIP ESTIMATION SPREADSHEETS

NCHRP 684 Internal Trip Capture Estimation Tool			
Project Name:	Folsom Heights - Proposed	**Organization:**	
Project Location:	Folsom, CA	**Performed By:**	
Scenario Description:		**Date:**	
Analysis Year:		**Checked By:**	
Analysis Period:	**AM Street Peak Hour**	**Date:**	

Table 1-A: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips[3]		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office				0		
Retail				304	188	116
Restaurant				0		
Cinema/Entertainment				0		
Residential				398	99	299
Hotel				0		
All Other Land Uses[2]				0		
				702	287	415

Table 2-A: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.[4]	% Transit	% Non-Motorized	Veh. Occ.[4]	% Transit	% Non-Motorized
Office						
Retail	1.00	0%	0%	1.00	0%	0%
Restaurant						
Cinema/Entertainment						
Residential	1.00	0%	0%	1.00	0%	0%
Hotel						
All Other Land Uses[2]						

Table 3-A: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-A: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	0		0	0	2	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	3	0	0		0
Hotel	0	0	0	0	0	

Table 5-A: Computations Summary

	Total	Entering	Exiting
All Person-Trips	702	287	415
Internal Capture Percentage	1%	2%	1%
External Vehicle-Trips[5]	692	282	410
External Transit-Trips[6]	0	0	0
External Non-Motorized Trips[6]	0	0	0

Table 6-A: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	N/A	N/A
Retail	2%	2%
Restaurant	N/A	N/A
Cinema/Entertainment	N/A	N/A
Residential	2%	1%
Hotel	N/A	N/A

[1]Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

[3]Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).

[4]Enter vehicle occupancy assumed in Table 1-A vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be made to Tables 5-A, 9-A (O and D). Enter transit, non-motorized percentages that will result with proposed mixed-use project complete.

[5]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A.

[6]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas A&M Transportation Institute - Version 2013.1

Project Name:	Folsom Heights - Proposed
Analysis Period:	**AM Street Peak Hour**

Table 7-A: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-A (D): Entering Trips				Table 7-A (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*		Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	0	0		1.00	0	0
Retail	1.00	188	188		1.00	116	116
Restaurant	1.00	0	0		1.00	0	0
Cinema/Entertainment	1.00	0	0		1.00	0	0
Residential	1.00	99	99		1.00	299	299
Hotel	1.00	0	0		1.00	0	0

Table 8-A (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	34		15	0	16	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	6	3	60	0		0
Hotel	0	0	0	0	0	

Table 8-A (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		60	0	0	0	0
Retail	0		0	0	2	0
Restaurant	0	15		0	5	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	32	0	0		0
Hotel	0	8	0	0	0	

Table 9-A (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates				External Trips by Mode*		
	Internal	External	Total		Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	0	0	0		0	0	0
Retail	3	185	188		185	0	0
Restaurant	0	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0	0
Residential	2	97	99		97	0	0
Hotel	0	0	0		0	0	0
All Other Land Uses[3]	0	0	0		0	0	0

Table 9-A (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates				External Trips by Mode*		
	Internal	External	Total		Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	0	0	0		0	0	0
Retail	2	114	116		114	0	0
Restaurant	0	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0	0
Residential	3	296	299		296	0	0
Hotel	0	0	0		0	0	0
All Other Land Uses[3]	0	0	0		0	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A
[2]Person-Trips
[3]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator
*Indicates computation that has been rounded to the nearest whole number.

NCHRP 684 Internal Trip Capture Estimation Tool			
Project Name:	Folsom Heights - Proposed	**Organization:**	
Project Location:	Folsom, CA	**Performed By:**	
Scenario Description:		**Date:**	
Analysis Year:		**Checked By:**	
Analysis Period:	**PM Street Peak Hour**	**Date:**	

Table 1-P: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips[3]		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office				0		
Retail				983	486	497
Restaurant				0		
Cinema/Entertainment				0		
Residential				530	334	196
Hotel				0		
All Other Land Uses[2]				0		
				1,513	820	693

Table 2-P: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.[4]	% Transit	% Non-Motorized	Veh. Occ.[4]	% Transit	% Non-Motorized
Office						
Retail	1.00	0%	0%	1.00	0%	0%
Restaurant						
Cinema/Entertainment						
Residential	1.00	0%	0%	1.00	0%	0%
Hotel						
All Other Land Uses[2]						

Table 3-P: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-P: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	0		0	0	129	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	49	0	0		0
Hotel	0	0	0	0	0	

Table 5-P: Computations Summary

	Total	Entering	Exiting
All Person-Trips	1,513	820	693
Internal Capture Percentage	24%	22%	26%
External Vehicle-Trips[5]	1,157	642	515
External Transit-Trips[6]	0	0	0
External Non-Motorized Trips[6]	0	0	0

Table 6-P: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	N/A	N/A
Retail	10%	26%
Restaurant	N/A	N/A
Cinema/Entertainment	N/A	N/A
Residential	39%	25%
Hotel	N/A	N/A

[1]Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

[3]Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).

[4]Enter vehicle occupancy assumed in Table 1-P vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be

[5]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P.

[6]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas A&M Transportation Institute - Version 2013.1

Project Name:	Folsom Heights - Proposed
Analysis Period:	**PM Street Peak Hour**

Table 7-P: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-P (D): Entering Trips				Table 7-P (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*		Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	0	0		1.00	0	0
Retail	1.00	486	486		1.00	497	497
Restaurant	1.00	0	0		1.00	0	0
Cinema/Entertainment	1.00	0	0		1.00	0	0
Residential	1.00	334	334		1.00	196	196
Hotel	1.00	0	0		1.00	0	0

Table 8-P (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	10		144	20	129	25
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	8	82	41	0		6
Hotel	0	0	0	0	0	

Table 8-P (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		39	0	0	13	0
Retail	0		0	0	154	0
Restaurant	0	243		0	53	0
Cinema/Entertainment	0	19	0		13	0
Residential	0	49	0	0		0
Hotel	0	10	0	0	0	

Table 9-P (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates				External Trips by Mode*		
	Internal	External	Total		Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	0	0	0		0	0	0
Retail	49	437	486		437	0	0
Restaurant	0	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0	0
Residential	129	205	334		205	0	0
Hotel	0	0	0		0	0	0
All Other Land Uses[3]	0	0	0		0	0	0

Table 9-P (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates				External Trips by Mode*		
	Internal	External	Total		Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	0	0	0		0	0	0
Retail	129	368	497		368	0	0
Restaurant	0	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0	0
Residential	49	147	196		147	0	0
Hotel	0	0	0		0	0	0
All Other Land Uses[3]	0	0	0		0	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

APPENDIX E

EXISTING PLUS PROJECT
LEVEL OF SERVICE CALCULATION WORKSHEETS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	15	261	5	17	617	156	10	1	22	310	1	75
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	16	284	5	18	671	170	11	1	24	337	1	82
Adj No. of Lanes	1	1	0	1	1	1	0	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	28	842	15	31	863	733	15	1	33	413	4	365
Arrive On Green	0.02	0.46	0.46	0.02	0.46	0.46	0.03	0.03	0.03	0.23	0.23	0.23
Sat Flow, veh/h	1774	1825	32	1774	1863	1583	502	46	1096	1774	19	1567
Grp Volume(v), veh/h	16	0	289	18	671	170	36	0	0	337	0	83
Grp Sat Flow(s),veh/h/ln	1774	0	1857	1774	1863	1583	1644	0	0	1774	0	1586
Q Serve(g_s), s	0.6	0.0	6.1	0.6	18.7	4.0	1.3	0.0	0.0	11.1	0.0	2.6
Cycle Q Clear(g_c), s	0.6	0.0	6.1	0.6	18.7	4.0	1.3	0.0	0.0	11.1	0.0	2.6
Prop In Lane	1.00		0.02	1.00		1.00	0.31		0.67	1.00		0.99
Lane Grp Cap(c), veh/h	28	0	857	31	863	733	49	0	0	413	0	369
V/C Ratio(X)	0.58	0.00	0.34	0.59	0.78	0.23	0.73	0.00	0.00	0.82	0.00	0.22
Avail Cap(c_a), veh/h	115	0	1381	143	1415	1203	186	0	0	746	0	667
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	30.2	0.0	10.6	30.2	13.9	10.0	29.8	0.0	0.0	22.5	0.0	19.2
Incr Delay (d2), s/veh	17.8	0.0	0.2	16.8	1.6	0.2	18.9	0.0	0.0	4.0	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	3.2	0.4	9.9	1.8	0.9	0.0	0.0	5.9	0.0	1.2
LnGrp Delay(d),s/veh	48.1	0.0	10.9	47.0	15.5	10.1	48.7	0.0	0.0	26.5	0.0	19.5
LnGrp LOS	D		B	D	B	B	D			C		B
Approach Vol, veh/h		305			859			36			420	
Approach Delay, s/veh		12.8			15.1			48.7			25.1	
Approach LOS		B			B			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		5.8	5.1	32.5		18.4	5.0	32.6
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		7.0	5.0	46.0		26.0	4.0	47.0
Max Q Clear Time (g_c+I1), s		3.3	2.6	8.1		13.1	2.6	20.7
Green Ext Time (p_c), s		0.0	0.0	8.7		1.3	0.0	7.9

Intersection Summary		
HCM 2010 Ctrl Delay		18.0
HCM 2010 LOS		B

Intersection	
Intersection Delay, s/veh	9
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	1	1	218	0	20	2	0	0	104	32	10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.93	0.92	0.93	0.92	0.92	0.93	0.93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1	1	237	0	22	2	0	0	113	34	11
Number of Lanes	0	0	1	0	0	0	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	2	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	1	1
HCM Control Delay	8.8	8.4	9.3
HCM LOS	A	A	A

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	100%	0%	0%	91%	1%
Vol Thru, %	0%	76%	0%	9%	98%
Vol Right, %	0%	24%	99%	0%	1%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	104	42	220	22	152
LT Vol	104	0	1	20	1
Through Vol	0	32	1	2	149
RT Vol	0	10	218	0	2
Lane Flow Rate	113	45	239	24	163
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.181	0.064	0.278	0.034	0.218
Departure Headway (Hd)	5.761	5.09	4.185	5.209	4.812
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	621	701	858	685	742
Service Time	3.514	2.842	2.214	3.261	2.864
HCM Lane V/C Ratio	0.182	0.064	0.279	0.035	0.22
HCM Control Delay	9.8	8.2	8.8	8.4	9.2
HCM Lane LOS	A	A	A	A	A
HCM 95th-tile Q	0.7	0.2	1.1	0.1	0.8

Intersection				
Intersection Delay, s/veh				
Intersection LOS				

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	1	149	2
Peak Hour Factor	0.92	0.93	0.93	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	1	160	2
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	9.2
HCM LOS	A

Lane

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	66	504	16	48	463	306	16	4	34	235	4	36
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	76	579	18	55	532	352	18	5	39	270	5	41
Adj No. of Lanes	1	1	0	1	1	1	0	1	0	1	1	0
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	98	829	26	70	831	706	22	6	48	339	33	275
Arrive On Green	0.05	0.46	0.46	0.04	0.45	0.45	0.05	0.05	0.05	0.19	0.19	0.19
Sat Flow, veh/h	1774	1797	56	1774	1863	1583	480	133	1041	1774	175	1435
Grp Volume(v), veh/h	76	0	597	55	532	352	62	0	0	270	0	46
Grp Sat Flow(s),veh/h/ln	1774	0	1853	1774	1863	1583	1655	0	0	1774	0	1610
Q Serve(g_s), s	2.6	0.0	15.7	1.9	13.5	9.7	2.3	0.0	0.0	8.9	0.0	1.5
Cycle Q Clear(g_c), s	2.6	0.0	15.7	1.9	13.5	9.7	2.3	0.0	0.0	8.9	0.0	1.5
Prop In Lane	1.00		0.03	1.00		1.00	0.29		0.63	1.00		0.89
Lane Grp Cap(c), veh/h	98	0	855	70	831	706	76	0	0	339	0	308
V/C Ratio(X)	0.78	0.00	0.70	0.78	0.64	0.50	0.81	0.00	0.00	0.80	0.00	0.15
Avail Cap(c_a), veh/h	261	0	1363	203	1310	1113	216	0	0	696	0	632
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	28.5	0.0	13.1	29.1	13.1	12.1	28.9	0.0	0.0	23.6	0.0	20.6
Incr Delay (d2), s/veh	12.5	0.0	1.0	16.8	0.8	0.5	18.1	0.0	0.0	4.3	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.0	8.2	1.2	7.1	4.3	1.4	0.0	0.0	4.8	0.0	0.7
LnGrp Delay(d),s/veh	41.0	0.0	14.1	45.9	14.0	12.6	47.0	0.0	0.0	27.8	0.0	20.8
LnGrp LOS	D		B	D	B	B	D			C		C
Approach Vol, veh/h		673			939			62			316	
Approach Delay, s/veh		17.2			15.3			47.0			26.8	
Approach LOS		B			B			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		6.8	6.4	32.2		15.7	7.4	31.3
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		8.0	7.0	45.0		24.0	9.0	43.0
Max Q Clear Time (g_c+I1), s		4.3	3.9	17.7		10.9	4.6	15.5
Green Ext Time (p_c), s		0.1	0.0	10.5		0.9	0.0	10.6

Intersection Summary			
HCM 2010 Ctrl Delay			18.8
HCM 2010 LOS			B

Intersection	
Intersection Delay, s/veh	10.1
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	4	3	181	0	10	4	1	0	229	126	17
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.98	0.92	0.98	0.92	0.92	0.98	0.98
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	4	3	197	0	10	4	1	0	249	129	17
Number of Lanes	0	0	1	0	0	0	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	2	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	1	1
HCM Control Delay	9.1	8.6	10.9
HCM LOS	A	A	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	100%	0%	2%	67%	1%
Vol Thru, %	0%	88%	2%	27%	92%
Vol Right, %	0%	12%	96%	7%	7%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	229	143	188	15	74
LT Vol	229	0	4	10	1
Through Vol	0	126	3	4	68
RT Vol	0	17	181	1	5
Lane Flow Rate	249	146	204	16	76
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.388	0.203	0.256	0.023	0.105
Departure Headway (Hd)	5.605	5.019	4.508	5.425	4.965
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	640	712	795	656	717
Service Time	3.361	2.774	2.543	3.487	3.031
HCM Lane V/C Ratio	0.389	0.205	0.257	0.024	0.106
HCM Control Delay	11.9	9.1	9.1	8.6	8.6
HCM Lane LOS	B	A	A	A	A
HCM 95th-tile Q	1.8	0.8	1	0.1	0.4

Intersection				
Intersection Delay, s/veh				
Intersection LOS				

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	1	68	5
Peak Hour Factor	0.92	0.98	0.98	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	1	69	5
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	8.6
HCM LOS	A

Lane

DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	*NKL*	Highway / Direction of Travel	*White Rock Road - EB/NB*
Agency or Company	*MRO Engineers, Inc.*	From/To	*Stonebriar Dr. to County Line*
Date Performed	*12/19/2016*	Jurisdiction	*El Dorado County, CA*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*Existing + Project*

Project Description: *Folsom Heights*

Input Data

Analysis direction vol., V_d	*281*veh/h	☐ Class I highway ☐ Class II highway ☑ Class III highway	
Opposing direction vol., V_o	*702*veh/h	Terrain ☑ Level ☐ Rolling	
Shoulder width ft	*6.0*	Grade Length mi Up/down	
Lane Width ft	*12.0*	Peak-hour factor, PHF	*0.83*
Segment Length mi	*0.3*	No-passing zone	*100%*
		% Trucks and Buses , P_T	*15 %*
		% Recreational vehicles, P_R	*0%*
		Access points *mi*	*3*/mi

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.4*	*1.1*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.943*	*0.985*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*1.00*	*1.00*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF^* f_{g,ATS} * f_{HV,ATS})$	*359*	*859*

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
		Base free-flow speed[4], BFFS	*60.0 mi/h*
Mean speed of sample[3], S_{FM}		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*0.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for access points[4], f_A (Exhibit 15-8)	*0.8 mi/h*
Free-flow speed, $FFS=S_{FM}+0.00776(v/ f_{HV,ATS})$		Free-flow speed, FFS $(FSS=BFFS-f_{LS}-f_A)$	*59.3 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*1.3 mi/h*	Average travel speed, $ATS_d=FFS-0.00776(v_{d,ATS} + v_{o,ATS}) - f_{np,ATS}$	*48.5 mi/h*
		Percent free flow speed, PFFS	*81.8 %*

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.1*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.985*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*1.00*	*1.00*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF^*f_{HV,PTSF}* f_{g,PTSF})$	*344*	*846*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*44.7*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*27.6*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF} / v_{d,PTSF} + v_{o,PTSF})$	*52.7*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*C*
Volume to capacity ratio, *v/c*	*0.53*
Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1700*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1700*

Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*81.8*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*338.6*
Effective width, Wv (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*7.18*
Bicycle level of service (Exhibit 15-4)	*F*

Notes

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	*NKL*	Highway / Direction of Travel	*White Rock Road - WB/SB*
Agency or Company	*MRO Engineers, Inc.*	From/To	*Stonebriar Dr. to County Line*
Date Performed	*12/19/2016*	Jurisdiction	*El Dorado County, CA*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*Existing + Project*

Project Description: *Folsom Heights*

Input Data

Analysis direction vol., V_d	*702*veh/h	☐ Class I highway ☐ Class II highway ☑ Class III highway	
Opposing direction vol., V_o	*281*veh/h	Terrain ☑ Level ☐ Rolling	
Shoulder width ft	*6.0*	Grade Length mi	Up/down
Lane Width ft	*12.0*	Peak-hour factor, PHF	*0.94*
Segment Length mi	*0.3*	No-passing zone	*100%*
		% Trucks and Buses , P_T	*10 %*
		% Recreational vehicles, P_R	*0%*
		Access points *mi*	*3*/mi

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.1*	*1.4*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV,ATS}$=1/ (1+ P_T (E_T -1)+P_R (E_R -1))	*0.990*	*0.962*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*1.00*	*1.00*
Demand flow rate[2], v_i (pc/h) v_i=V_i / (PHF* $f_{g,ATS}$ * $f_{HV,ATS}$)	*754*	*311*

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*60.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*0.0 mi/h*
Free-flow speed, FFS=S_{FM}+0.00776(*v*/ $f_{HV,ATS}$)		Adj. for access points[4], f_A (Exhibit 15-8)	*0.8 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*3.9 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*59.3 mi/h*
		Average travel speed, ATS_d=FFS-0.00776($v_{d,ATS}$ + $v_{o,ATS}$) - $f_{np,ATS}$	*47.1 mi/h*
		Percent free flow speed, PFFS	*79.4 %*

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.1*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, f_{HV}=1/ (1+ P_T(E_T-1)+P_R(E_R-1))	*1.000*	*0.990*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*1.00*	*1.00*
Directional flow rate[2], v_i(pc/h) v_i=V_i/(PHF*$f_{HV,PTSF}$* $f_{g,PTSF}$)	*747*	*302*
Base percent time-spent-following[4], $BPTSF_d$(%)=100(1-$e^{av_d^b}$)	*61.2*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*30.1*	
Percent time-spent-following, $PTSF_d$(%)=$BPTSF_d$+$f_{np,PTSF}$ *($v_{d,PTSF}$ / $v_{d,PTSF}$ + $v_{o,PTSF}$)	*82.6*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*C*
Volume to capacity ratio, *v/c*	*0.53*
Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1700*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1700*

Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*79.4*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*746.8*
Effective width, Wv (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*5.30*
Bicycle level of service (Exhibit 15-4)	*E*

Notes

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	*NKL*	Highway / Direction of Travel	*White Rock Road - EB/NB*
Agency or Company	*MRO Engineers, Inc.*	From/To	*Stonebriar Drive to Manchester*
Date Performed	*12/19/2016*	Jurisdiction	*El Dorado County, CA*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*Existing + Project*

Project Description: *Folsom Heights*

Input Data

Analysis direction vol., V_d	*593*veh/h	Class I highway ☐ Class II highway ☐ Class III highway ☑	
Opposing direction vol., V_o	*790*veh/h	Terrain	Level ☑ Rolling ☐
Shoulder width ft	*6.0*	Grade Length mi	Up/down
Lane Width ft	*12.0*	Peak-hour factor, PHF	*0.83*
Segment Length mi	*0.3*	No-passing zone	*100%*
		% Trucks and Buses , P_T	*5* %
		% Recreational vehicles, P_R	*0%*
		Access points *mi*	*3*/mi

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.1*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV,ATS}$=1/ (1+ P_T(E_T-1)+P_R(E_R-1))	*0.995*	*1.000*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*1.00*	*1.00*
Demand flow rate[2], v_i (pc/h) v_i=V_i / (PHF* $f_{g,ATS}$ * $f_{HV,ATS}$)	*718*	*952*

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*60.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*0.0 mi/h*
Free-flow speed, FFS=S_{FM}+0.00776(*v*/ $f_{HV,ATS}$)		Adj. for access points[4], f_A (Exhibit 15-8)	*0.8 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*1.2 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*59.3 mi/h*
		Average travel speed, ATS_d=FFS-0.00776($v_{d,ATS}$ + $v_{o,ATS}$) - $f_{np,ATS}$	*45.1 mi/h*
		Percent free flow speed, PFFS	*76.0 %*

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, f_{HV}=1/ (1+ P_T(E_T-1)+P_R(E_R-1))	*1.000*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*1.00*	*1.00*
Directional flow rate[2], v_i(pc/h) v_i=V_i/(PHF*$f_{HV,PTSF}$* $f_{g,PTSF}$)	*714*	*952*
Base percent time-spent-following[4], $BPTSF_d$(%)=100(1-$e^{av_d^b}$)	*67.4*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*23.3*	
Percent time-spent-following, $PTSF_d$(%)=$BPTSF_d$+$f_{np,PTSF}$ *($v_{d,PTSF}$ / $v_{d,PTSF}$ + $v_{o,PTSF}$)	*77.4*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*C*
Volume to capacity ratio, *v/c*	*0.53*
Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1700*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1700*

Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*76.0*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*714.5*
Effective width, Wv (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*3.50*
Bicycle level of service (Exhibit 15-4)	*D*
Notes	
1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain. 2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F. 3. For the analysis direction only and for v>200 veh/h. 4. For the analysis direction only 5. Exhibit 15-20 provides coefficients a and b for Equation 15-10. 6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.	

DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	*NKL*	Highway / Direction of Travel	*White Rock Road - WB/SB*
Agency or Company	*MRO Engineers, Inc.*	From/To	*Stonebriar Drive to Manchester*
Date Performed	*12/19/2016*	Jurisdiction	*El Dorado County, CA*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*Existing Conditions*

Project Description: *Folsom Heights*

Input Data

Analysis direction vol., V_d	*790*veh/h	☐ Class I highway ☐ Class II highway ☑ Class III highway	
Opposing direction vol., V_o	*593*veh/h	Terrain ☑ Level ☐ Rolling	
Shoulder width ft	*6.0*	Grade Length mi Up/down	
Lane Width ft	*12.0*	Peak-hour factor, PHF	*0.91*
Segment Length mi	*0.3*	No-passing zone	*100%*
		% Trucks and Buses , P_T	*4* %
		% Recreational vehicles, P_R	*0%*
		Access points *mi*	*3*/mi

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.0*	*1.1*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/\ (1+ P_T\,(E_T -1)+P_R\,(E_R -1)\ )$	*1.000*	*0.996*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*1.00*	*1.00*
Demand flow rate[2], v_i (pc/h) $v_i=V_i\ /\ (PHF^*\ f_{g,ATS}\ ^*\ f_{HV,ATS})$	*868*	*654*

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
		Base free-flow speed[4], BFFS	*60.0 mi/h*
Mean speed of sample[3], S_{FM}		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*0.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for access points[4], f_A (Exhibit 15-8)	*0.8 mi/h*
Free-flow speed, $FFS=S_{FM}+0.00776(v/\ f_{HV,ATS}\ )$		Free-flow speed, FFS $(FSS=BFFS-f_{LS}-f_A)$	*59.3 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*1.8 mi/h*	Average travel speed, $ATS_d=FFS-0.00776(v_{d,ATS} + v_{o,ATS}) - f_{np,ATS}$	*45.6 mi/h*
		Percent free flow speed, PFFS	*77.0 %*

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/\ (1+ P_T(E_T-1)+P_R(E_R-1)\ )$	*1.000*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*1.00*	*1.00*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF^*f_{HV,PTSF}{}^*\ f_{g,PTSF})$	*868*	*652*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^{\,b}})$	*70.2*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*25.7*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{\,np,PTSF}\ {}^*(v_{d,PTSF}\ /\ v_{d,PTSF} + v_{o,PTSF})$	*84.9*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*C*
Volume to capacity ratio, *v/c*	*0.53*
Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1700*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1700*

Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*77.0*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*868.1*
Effective width, Wv (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*3.31*
Bicycle level of service (Exhibit 15-4)	*C*
Notes	

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	*NKL*	Highway / Direction of Travel	*White Rock Road - EB/NB*
Agency or Company	*MRO Engineers, Inc.*	From/To	*Stonebriar Dr. to County Line*
Date Performed	*12/19/2016*	Jurisdiction	*El Dorado County, CA*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*Existing + Project*

Project Description: *Folsom Heights*

Input Data

☐ Class I highway ☐ Class II highway ☑ Class III highway

Terrain ☑ Level ☐ Rolling

Analysis direction vol., V_d	*586*veh/h	Grade Length mi Up/down	
Opposing direction vol., V_o	*515*veh/h	Peak-hour factor, PHF	*0.93*
Shoulder width ft	*6.0*	No-passing zone	*100%*
Lane Width ft	*12.0*	% Trucks and Buses , P_T	*12 %*
Segment Length mi	*0.3*	% Recreational vehicles, P_R	*0%*
		Access points *mi*	*3/mi*

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.1*	*1.1*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/ (1+ P_T(E_T-1)+P_R(E_R-1))$	*0.988*	*0.988*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*1.00*	*1.00*
Demand flow rate[2], v_i (pc/h) $v_i=V_i / (PHF^* f_{g,ATS} * f_{HV,ATS})$	*638*	*560*

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*60.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*0.0 mi/h*
Free-flow speed, $FFS=S_{FM}+0.00776(v/ f_{HV,ATS})$		Adj. for access points[4], f_A (Exhibit 15-8)	*0.8 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*2.3 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*59.3 mi/h*
		Average travel speed, $ATS_d=FFS-0.00776(v_{d,ATS} + v_{o,ATS}) - f_{np,ATS}$	*47.6 mi/h*
		Percent free flow speed, PFFS	*80.4 %*

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/ (1+ P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*1.00*	*1.00*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF^*f_{HV,PTSF}^* f_{g,PTSF})$	*630*	*554*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*58.7*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*34.2*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF} *(v_{d,PTSF} / v_{d,PTSF} + v_{o,PTSF})$	*76.9*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*C*
Volume to capacity ratio, *v/c*	*0.53*
Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1700*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1700*

Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*80.4*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*630.1*
Effective width, Wv (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*6.06*
Bicycle level of service (Exhibit 15-4)	*F*

Notes

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	*NKL*	Highway / Direction of Travel	*White Rock Road - WB/SB*
Agency or Company	*MRO Engineers, Inc.*	From/To	*Stonebriar Dr. to County Line*
Date Performed	*12/19/2016*	Jurisdiction	*El Dorado County, CA*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*Existing + Project*

Project Description: *Folsom Heights*

Input Data

Analysis direction vol., V_d	*515*veh/h	☐ Class I highway ☐ Class II highway ☑ Class III highway	
Opposing direction vol., V_o	*586*veh/h	Terrain ☑ Level ☐ Rolling	
Shoulder width ft	*6.0*	Grade Length mi Up/down	
Lane Width ft	*12.0*	Peak-hour factor, PHF	*0.88*
Segment Length mi	*0.3*	No-passing zone	*100%*
		% Trucks and Buses , P_T	*9* %
		% Recreational vehicles, P_R	*0%*
		Access points *mi*	*3*/mi

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.1*	*1.1*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV,ATS}$=1/ (1+ P_T (E_T -1)+P_R (E_R -1))	*0.991*	*0.991*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*1.00*	*1.00*
Demand flow rate[2], v_i (pc/h) $v_i=V_i$ / (PHF* $f_{g,ATS}$ * $f_{HV,ATS}$)	*591*	*672*

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*60.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*0.0 mi/h*
Free-flow speed, FFS=S_{FM}+0.00776(*v*/ $f_{HV,ATS}$)		Adj. for access points[4], f_A (Exhibit 15-8)	*0.8 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*1.8 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*59.3 mi/h*
		Average travel speed, ATS_d=FFS-0.00776($v_{d,ATS}$ + $v_{o,ATS}$) - $f_{np,ATS}$	*47.7 mi/h*
		Percent free flow speed, PFFS	*80.5 %*

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, f_{HV}=1/ (1+ P_T(E_T-1)+P_R(E_R-1))	*1.000*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*1.00*	*1.00*
Directional flow rate[2], v_i(pc/h) $v_i=V_i$/(PHF*$f_{HV,PTSF}$* $f_{g,PTSF}$)	*585*	*666*
Base percent time-spent-following[4], $BPTSF_d$(%)=100(1-$e^{av_d^b}$)	*58.3*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*32.3*	
Percent time-spent-following, $PTSF_d$(%)=$BPTSF_d$+$f_{np,PTSF}$ *($v_{d,PTSF}$ / $v_{d,PTSF}$ + $v_{o,PTSF}$)	*73.4*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*C*
Volume to capacity ratio, *v/c*	*0.53*
Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1700*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1700*

Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*80.5*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*585.2*
Effective width, Wv (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*4.78*
Bicycle level of service (Exhibit 15-4)	*E*
Notes	

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	*NKL*	Highway / Direction of Travel	*White Rock Road - EB/NB*
Agency or Company	*MRO Engineers, Inc.*	From/To	*Stonebriar Drive to Manchester*
Date Performed	*12/19/2016*	Jurisdiction	*El Dorado County, CA*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*Existing + Project*

Project Description: *Folsom Heights*

Input Data

Analysis direction vol., V_d	*773*veh/h
Opposing direction vol., V_o	*817*veh/h
Shoulder width ft	*6.0*
Lane Width ft	*12.0*
Segment Length mi	*0.3*

☐ Class I highway ☐ Class II highway ☑ Class III highway

Terrain ☑ Level ☐ Rolling

Grade Length mi	Up/down
Peak-hour factor, PHF	*0.92*
No-passing zone	*100%*
% Trucks and Buses , P_T	*3* %
% Recreational vehicles, P_R	*0%*
Access points *mi*	*3*/mi

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.1*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV,ATS}$=1/ (1+ P_T(E_T-1)+P_R (E_R-1))	*0.997*	*1.000*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*1.00*	*1.00*
Demand flow rate[2], v_i (pc/h) v_i=V_i / (PHF* $f_{g,ATS}$ * $f_{HV,ATS}$)	*843*	*888*

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*60.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*0.0 mi/h*
Free-flow speed, FFS=S_{FM}+0.00776(*v*/ $f_{HV,ATS}$)		Adj. for access points[4], f_A (Exhibit 15-8)	*0.8 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*1.3 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*59.3 mi/h*
		Average travel speed, ATS_d=FFS-0.00776($v_{d,ATS}$ + $v_{o,ATS}$) - $f_{np,ATS}$	*44.5 mi/h*
		Percent free flow speed, PFFS	*75.1 %*

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, f_{HV}=1/ (1+ P_T(E_T-1)+P_R(E_R-1))	*1.000*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*1.00*	*1.00*
Directional flow rate[2], v_i(pc/h) v_i=V_i/(PHF*$f_{HV,PTSF}$* $f_{g,PTSF}$)	*840*	*888*
Base percent time-spent-following[4], $BPTSF_d$(%)=100(1-$e^{av_d^b}$)	*71.8*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*23.0*	
Percent time-spent-following, $PTSF_d$(%)=$BPTSF_d$+$f_{np,PTSF}$ *($v_{d,PTSF}$ / $v_{d,PTSF}$ + $v_{o,PTSF}$)	*83.0*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*C*
Volume to capacity ratio, *v/c*	*0.53*
Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1700*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1700*

Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*75.1*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*840.2*
Effective width, Wv (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*3.02*
Bicycle level of service (Exhibit 15-4)	*C*
Notes	
1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain. 2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F. 3. For the analysis direction only and for v>200 veh/h. 4. For the analysis direction only 5. Exhibit 15-20 provides coefficients a and b for Equation 15-10. 6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.	

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DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	*NKL*	Highway / Direction of Travel	*White Rock Road - WB/SB*
Agency or Company	*MRO Engineers, Inc.*	From/To	*Stonebriar Drive to Manchester*
Date Performed	*12/19/2016*	Jurisdiction	*El Dorado County, CA*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*Existing + Project*

Project Description: *Folsom Heights*

Input Data

Analysis direction vol., V_d	*817*veh/h	☐ Class I highway ☐ Class II highway ☑ Class III highway	
Opposing direction vol., V_o	*773*veh/h	Terrain ☑ Level ☐ Rolling	
Shoulder width ft	*6.0*	Grade Length mi Up/down	
Lane Width ft	*12.0*	Peak-hour factor, PHF	*0.84*
Segment Length mi	*0.3*	No-passing zone	*100%*
		% Trucks and Buses , P_T	*5* %
		% Recreational vehicles, P_R	*0%*
		Access points *mi*	*3*/mi

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.0*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*1.000*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*1.00*	*1.00*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF^* f_{g,ATS} * f_{HV,ATS})$	*973*	*920*

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*60.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*0.0 mi/h*
Free-flow speed, $FFS=S_{FM}+0.00776(v/f_{HV,ATS})$		Adj. for access points[4], f_A (Exhibit 15-8)	*0.8 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*1.3 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*59.3 mi/h*
		Average travel speed, $ATS_d=FFS-0.00776(v_{d,ATS}+v_{o,ATS})-f_{np,ATS}$	*43.3 mi/h*
		Percent free flow speed, PFFS	*73.1 %*

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*1.00*	*1.00*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF^* f_{HV,PTSF} * f_{g,PTSF})$	*973*	*920*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*76.1*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*20.3*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF} * (v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*86.5*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*D*
Volume to capacity ratio, *v/c*	*0.57*
Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1700*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1700*

Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*73.1*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*972.6*
Effective width, Wv (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*3.66*
Bicycle level of service (Exhibit 15-4)	*D*
Notes	
1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain. 2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F. 3. For the analysis direction only and for v>200 veh/h. 4. For the analysis direction only 5. Exhibit 15-20 provides coefficients a and b for Equation 15-10. 6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.	

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	17	261	5	17	617	68	10	0	22	124	0	81
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	18	284	5	18	671	74	11	0	24	135	0	88
Adj No. of Lanes	1	1	0	1	1	1	0	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	32	906	16	32	925	786	16	0	35	214	0	191
Arrive On Green	0.02	0.50	0.50	0.02	0.50	0.50	0.03	0.00	0.03	0.12	0.00	0.12
Sat Flow, veh/h	1774	1825	32	1774	1863	1583	515	0	1124	1774	0	1583
Grp Volume(v), veh/h	18	0	289	18	671	74	35	0	0	135	0	88
Grp Sat Flow(s),veh/h/ln	1774	0	1857	1774	1863	1583	1639	0	0	1774	0	1583
Q Serve(g_s), s	0.5	0.0	4.4	0.5	13.6	1.2	1.0	0.0	0.0	3.5	0.0	2.5
Cycle Q Clear(g_c), s	0.5	0.0	4.4	0.5	13.6	1.2	1.0	0.0	0.0	3.5	0.0	2.5
Prop In Lane	1.00		0.02	1.00		1.00	0.31		0.69	1.00		1.00
Lane Grp Cap(c), veh/h	32	0	922	32	925	786	51	0	0	214	0	191
V/C Ratio(X)	0.57	0.00	0.31	0.57	0.73	0.09	0.69	0.00	0.00	0.63	0.00	0.46
Avail Cap(c_a), veh/h	185	0	2093	185	2100	1785	308	0	0	592	0	529
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	23.3	0.0	7.2	23.3	9.5	6.4	23.0	0.0	0.0	20.1	0.0	19.6
Incr Delay (d2), s/veh	15.2	0.0	0.2	15.2	1.1	0.1	15.1	0.0	0.0	3.1	0.0	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	2.3	0.4	7.2	0.5	0.7	0.0	0.0	1.9	0.0	1.2
LnGrp Delay(d),s/veh	38.5	0.0	7.4	38.5	10.6	6.4	38.1	0.0	0.0	23.1	0.0	21.4
LnGrp LOS	D		A	D	B	A	D			C		C
Approach Vol, veh/h		307			763			35			223	
Approach Delay, s/veh		9.2			10.8			38.1			22.4	
Approach LOS		A			B			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		5.5	4.9	27.8		9.8	4.9	27.8
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		9.0	5.0	54.0		16.0	5.0	54.0
Max Q Clear Time (g_c+I1), s		3.0	2.5	6.4		5.5	2.5	15.6
Green Ext Time (p_c), s		0.0	0.0	8.4		0.6	0.0	8.2

Intersection Summary		
HCM 2010 Ctrl Delay		13.1
HCM 2010 LOS		B

Intersection	
Intersection Delay, s/veh	8
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	0	0	76	0	20	0	0	0	25	32	10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.93	0.92	0.93	0.92	0.92	0.93	0.93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	83	0	22	0	0	0	27	34	11
Number of Lanes	0	0	1	0	0	0	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	2	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	1	1
HCM Control Delay	7.3	7.9	7.9
HCM LOS	A	A	A

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	100%	0%	0%	100%	1%
Vol Thru, %	0%	76%	0%	0%	99%
Vol Right, %	0%	24%	100%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	25	42	76	20	150
LT Vol	25	0	0	20	1
Through Vol	0	32	0	0	149
RT Vol	0	10	76	0	0
Lane Flow Rate	27	45	83	22	161
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.04	0.058	0.09	0.028	0.191
Departure Headway (Hd)	5.303	4.634	3.901	4.762	4.271
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	669	764	924	756	829
Service Time	3.086	2.417	1.902	2.766	2.351
HCM Lane V/C Ratio	0.04	0.059	0.09	0.029	0.194
HCM Control Delay	8.3	7.7	7.3	7.9	8.4
HCM Lane LOS	A	A	A	A	A
HCM 95th-tile Q	0.1	0.2	0.3	0.1	0.7

Intersection				
Intersection Delay, s/veh				
Intersection LOS				

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	1	149	0
Peak Hour Factor	0.92	0.93	0.93	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	1	160	0
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	8.4
HCM LOS	A

Lane

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	81	504	16	48	463	132	16	0	34	90	0	44
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	93	579	18	55	532	152	18	0	39	103	0	51
Adj No. of Lanes	1	1	0	1	1	1	0	1	0	1	1	0
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	121	888	28	76	874	743	23	0	49	161	0	144
Arrive On Green	0.07	0.49	0.49	0.04	0.47	0.47	0.04	0.00	0.04	0.09	0.00	0.09
Sat Flow, veh/h	1774	1797	56	1774	1863	1583	518	0	1121	1774	0	1583
Grp Volume(v), veh/h	93	0	597	55	532	152	57	0	0	103	0	51
Grp Sat Flow(s),veh/h/ln	1774	0	1853	1774	1863	1583	1639	0	0	1774	0	1583
Q Serve(g_s), s	2.5	0.0	11.7	1.5	10.4	2.8	1.7	0.0	0.0	2.7	0.0	1.5
Cycle Q Clear(g_c), s	2.5	0.0	11.7	1.5	10.4	2.8	1.7	0.0	0.0	2.7	0.0	1.5
Prop In Lane	1.00		0.03	1.00		1.00	0.32		0.68	1.00		1.00
Lane Grp Cap(c), veh/h	121	0	916	76	874	743	72	0	0	161	0	144
V/C Ratio(X)	0.77	0.00	0.65	0.72	0.61	0.20	0.79	0.00	0.00	0.64	0.00	0.35
Avail Cap(c_a), veh/h	472	0	1972	291	1792	1523	336	0	0	508	0	454
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	22.4	0.0	9.2	23.1	9.6	7.6	23.1	0.0	0.0	21.4	0.0	20.9
Incr Delay (d2), s/veh	9.9	0.0	0.8	12.0	0.7	0.1	17.0	0.0	0.0	4.2	0.0	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.0	6.2	1.0	5.3	1.2	1.1	0.0	0.0	1.5	0.0	0.7
LnGrp Delay(d),s/veh	32.3	0.0	10.0	35.0	10.3	7.7	40.1	0.0	0.0	25.6	0.0	22.3
LnGrp LOS	C		B	D	B	A	D			C		C
Approach Vol, veh/h		690			739			57			154	
Approach Delay, s/veh		13.0			11.6			40.1			24.5	
Approach LOS		B			B			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		6.2	6.1	28.2		8.4	7.3	26.9
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		10.0	8.0	52.0		14.0	13.0	47.0
Max Q Clear Time (g_c+I1), s		3.7	3.5	13.7		4.7	4.5	12.4
Green Ext Time (p_c), s		0.1	0.0	10.4		0.3	0.1	10.2

Intersection Summary		
HCM 2010 Ctrl Delay		14.4
HCM 2010 LOS		B

Intersection	
Intersection Delay, s/veh	8.2
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	0	0	50	0	10	0	1	0	85	126	17
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.98	0.92	0.98	0.92	0.92	0.98	0.98
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	54	0	10	0	1	0	92	129	17
Number of Lanes	0	0	1	0	0	0	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	2	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	1	1
HCM Control Delay	7.3	7.9	8.5
HCM LOS	A	A	A

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	100%	0%	0%	91%	1%
Vol Thru, %	0%	88%	0%	0%	99%
Vol Right, %	0%	12%	100%	9%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	85	143	50	11	69
LT Vol	85	0	0	10	1
Through Vol	0	126	0	0	68
RT Vol	0	17	50	1	0
Lane Flow Rate	92	146	54	11	70
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.133	0.186	0.061	0.015	0.087
Departure Headway (Hd)	5.185	4.601	4.063	4.84	4.43
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	689	776	886	743	813
Service Time	2.936	2.351	2.068	2.846	2.438
HCM Lane V/C Ratio	0.134	0.188	0.061	0.015	0.086
HCM Control Delay	8.7	8.4	7.3	7.9	7.9
HCM Lane LOS	A	A	A	A	A
HCM 95th-tile Q	0.5	0.7	0.2	0	0.3

Intersection				
Intersection Delay, s/veh				
Intersection LOS				

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	1	68	0
Peak Hour Factor	0.92	0.98	0.98	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	1	69	0
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	7.9
HCM LOS	A

Lane

DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	*NKL*	Highway / Direction of Travel	*White Rock Road - EB/NB*
Agency or Company	*MRO Engineers, Inc.*	From/To	*Stonebriar Dr. to County Line*
Date Performed	*12/19/2016*	Jurisdiction	*El Dorado County, CA*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*Existing + Project Phase 1*

Project Description: *Folsom Heights*

Input Data

Analysis direction vol., V_d	*283*veh/h	☐ Class I highway ☐ Class II highway ☑ Class III highway	
Opposing direction vol., V_o	*708*veh/h	Terrain ☑ Level ☐ Rolling	
Shoulder width ft	*6.0*	Grade Length mi Up/down	
Lane Width ft	*12.0*	Peak-hour factor, PHF	*0.83*
Segment Length mi	*0.3*	No-passing zone	*100%*
		% Trucks and Buses , P_T	*15 %*
		% Recreational vehicles, P_R	*0%*
		Access points *mi*	*3*/mi

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.4*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV,ATS}$=1/ (1+ P_T (E_T -1)+P_R (E_R -1))	*0.943*	*1.000*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*1.00*	*1.00*
Demand flow rate[2], v_i (pc/h) v_i=V_i / (PHF* $f_{g,ATS}$ * $f_{HV,ATS}$)	*362*	*853*

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*60.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*0.0 mi/h*
Free-flow speed, FFS=S_{FM}+0.00776(*v*/ $f_{HV,ATS}$)		Adj. for access points[4], f_A (Exhibit 15-8)	*0.8 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*1.3 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*59.3 mi/h*
		Average travel speed, ATS_d=FFS-0.00776($v_{d,ATS}$ + $v_{o,ATS}$) - $f_{np,ATS}$	*48.5 mi/h*
		Percent free flow speed, PFFS	*81.8 %*

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.1*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, f_{HV}=1/ (1+ P_T(E_T-1)+P_R(E_R-1))	*0.985*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*1.00*	*1.00*
Directional flow rate[2], v_i(pc/h) v_i=V_i/(PHF*$f_{HV,PTSF}$* $f_{g,PTSF}$)	*346*	*853*
Base percent time-spent-following[4], $BPTSF_d$(%)=100(1-$e^{av_d^b}$)	*44.9*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*27.4*	
Percent time-spent-following, $PTSF_d$(%)=$BPTSF_d$+$f_{np,PTSF}$ *($v_{d,PTSF}$ / $v_{d,PTSF}$ + $v_{o,PTSF}$)	*52.8*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*C*
Volume to capacity ratio, *v/c*	*0.53*
Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1700*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1700*

Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*81.8*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*341.0*
Effective width, Wv (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*7.18*
Bicycle level of service (Exhibit 15-4)	*F*

Notes

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	*NKL*	Highway / Direction of Travel	*White Rock Road - WB/SB*
Agency or Company	*MRO Engineers, Inc.*	From/To	*Stonebriar Dr. to County Line*
Date Performed	*12/19/2016*	Jurisdiction	*El Dorado County, CA*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*Existing + Project Phase 1*

Project Description: *Folsom Heights*

Input Data

		☐ Class I highway ☐ Class II highway ☑ Class III highway	
		Terrain ☑ Level ☐ Rolling	
		Grade Length mi	Up/down
		Peak-hour factor, PHF	*0.94*
		No-passing zone	*100%*
Analysis direction vol., V_d	*708*veh/h	% Trucks and Buses , P_T	*10 %*
Opposing direction vol., V_o	*283*veh/h	% Recreational vehicles, P_R	*0%*
Shoulder width ft	*6.0*	Access points *mi*	*3*/mi
Lane Width ft	*12.0*		
Segment Length mi	*0.3*		

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.1*	*1.4*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV,ATS}$=1/ (1+ P_T (E_T -1)+P_R (E_R -1))	*0.990*	*0.962*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*1.00*	*1.00*
Demand flow rate[2], v_i (pc/h) v_i=V_i / (PHF* $f_{g,ATS}$ * $f_{HV,ATS}$)	*761*	*313*

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
		Base free-flow speed[4], BFFS	*60.0 mi/h*
		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*0.0 mi/h*
Mean speed of sample[3], S_{FM}		Adj. for access points[4], f_A (Exhibit 15-8)	*0.8 mi/h*
Total demand flow rate, both directions, *v*		Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*59.3 mi/h*
Free-flow speed, FFS=S_{FM}+0.00776(*v*/ $f_{HV,ATS}$)		Average travel speed, ATS_d=FFS-0.00776($v_{d,ATS}$ + $v_{o,ATS}$) - $f_{np,ATS}$	*47.0 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*3.9 mi/h*	Percent free flow speed, PFFS	*79.3 %*

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.1*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, f_{HV}=1/ (1+ P_T(E_T-1)+P_R(E_R-1))	*1.000*	*0.990*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*1.00*	*1.00*
Directional flow rate[2], v_i(pc/h) v_i=V_i/(PHF*$f_{HV,PTSF}$* $f_{g,PTSF}$)	*753*	*304*
Base percent time-spent-following[4], $BPTSF_d$(%)=100(1-$e^{av_d^b}$)	*61.5*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*30.0*	
Percent time-spent-following, $PTSF_d$(%)=$BPTSF_d$+$f_{np,PTSF}$ *($v_{d,PTSF}$ / $v_{d,PTSF}$ + $v_{o,PTSF}$)	*82.9*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*C*
Volume to capacity ratio, *v/c*	*0.53*
Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1700*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1700*

Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*79.3*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*753.2*
Effective width, Wv (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*5.30*
Bicycle level of service (Exhibit 15-4)	*E*
Notes	
1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain. 2. If $v_i(v_d$ or $v_o)$ >=1,700 pc/h, terminate analysis--the LOS is F. 3. For the analysis direction only and for v>200 veh/h. 4. For the analysis direction only 5. Exhibit 15-20 provides coefficients a and b for Equation 15-10. 6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.	

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DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	*NKL*	Highway / Direction of Travel	*White Rock Road - EB/NB*
Agency or Company	*MRO Engineers, Inc.*	From/To	*Stonebriar Drive to Manchester*
Date Performed	*12/19/2016*	Jurisdiction	*El Dorado County, CA*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*Existing + Project Phase 1*

Project Description: *Folsom Heights*

Input Data

Analysis direction vol., V_d	*425*veh/h
Opposing direction vol., V_o	*702*veh/h
Shoulder width ft	*6.0*
Lane Width ft	*12.0*
Segment Length mi	*0.3*

☐ Class I highway ☐ Class II highway ☑ Class III highway

Terrain ☑ Level ☐ Rolling

Grade Length mi	Up/down
Peak-hour factor, PHF	*0.83*
No-passing zone	*100%*
% Trucks and Buses , P_T	*5* %
% Recreational vehicles, P_R	*0%*
Access points *mi*	*3*/mi

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.2*	*1.1*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.990*	*0.995*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*1.00*	*1.00*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF^* f_{g,ATS} * f_{HV,ATS})$	*517*	*850*

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*60.0* mi/h
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*0.0* mi/h
Free-flow speed, $FFS=S_{FM}+0.00776(v/f_{HV,ATS})$		Adj. for access points[4], f_A (Exhibit 15-8)	*0.8* mi/h
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*1.3* mi/h	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*59.3* mi/h
		Average travel speed, $ATS_d=FFS-0.00776(v_{d,ATS}+v_{o,ATS})-f_{np,ATS}$	*47.3* mi/h
		Percent free flow speed, PFFS	*79.8* %

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*1.00*	*1.00*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF^*f_{HV,PTSF}^* f_{g,PTSF})$	*512*	*846*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*56.2*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*27.1*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*66.4*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*C*
Volume to capacity ratio, *v/c*	*0.53*
Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1700*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1700*

Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*79.8*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*512.0*
Effective width, Wv (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*3.34*
Bicycle level of service (Exhibit 15-4)	*C*
Notes	
1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain. 2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F. 3. For the analysis direction only and for v>200 veh/h. 4. For the analysis direction only 5. Exhibit 15-20 provides coefficients a and b for Equation 15-10. 6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.	

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DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*NKL*	Highway / Direction of Travel	*White Rock Road - WB/SB*
Agency or Company	*MRO Engineers, Inc.*	From/To	*Stonebriar Drive to Manchester*
Date Performed	*12/19/2016*	Jurisdiction	*El Dorado County, CA*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*Existing + Project Phase 1*

Project Description: *Folsom Heights*

Input Data

Analysis direction vol., V_d	*702*veh/h	☐ Class I highway ☐ Class II highway ☑ Class III highway	
Opposing direction vol., V_o	*425*veh/h	Terrain ☑ Level ☐ Rolling	
Shoulder width ft	*6.0*	Grade Length mi Up/down	
Lane Width ft	*12.0*	Peak-hour factor, PHF	*0.91*
Segment Length mi	*0.3*	No-passing zone	*100%*
		% Trucks and Buses , P_T	*4* %
		% Recreational vehicles, P_R	*0%*
		Access points *mi*	*3*/mi

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.1*	*1.2*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV,ATS}$=1/ (1+ P_T (E_T -1)+P_R (E_R -1))	*0.996*	*0.992*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*1.00*	*1.00*
Demand flow rate[2], v_i (pc/h) $v_i=V_i$ / (PHF* $f_{g,ATS}$ * $f_{HV,ATS}$)	*775*	*471*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*60.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*0.0 mi/h*
Free-flow speed, FFS=S_{FM}+0.00776(*v*/ $f_{HV,ATS}$)		Adj. for access points[4], f_A (Exhibit 15-8)	*0.8 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*3.1 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*59.3 mi/h*
		Average travel speed, ATS_d=FFS-0.00776($v_{d,ATS}$ + $v_{o,ATS}$) - $f_{np,ATS}$	*46.5 mi/h*
		Percent free flow speed, PFFS	*78.4 %*

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, f_{HV}=1/ (1+ P_T(E_T-1)+P_R(E_R-1))	*1.000*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*1.00*	*1.00*
Directional flow rate[2], v_i(pc/h) $v_i=V_i$/(PHF*$f_{HV,PTSF}$* $f_{g,PTSF}$)	*771*	*467*
Base percent time-spent-following[4], $BPTSF_d$(%)=100(1-$e^{av_d^b}$)	*65.6*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*29.9*	
Percent time-spent-following, $PTSF_d$(%)=$BPTSF_d$+$f_{np,PTSF}$ *($v_{d,PTSF}$ / $v_{d,PTSF}$ + $v_{o,PTSF}$)	*84.2*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*C*
Volume to capacity ratio, *v/c*	*0.53*
Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1700*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1700*

Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*78.4*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*771.4*
Effective width, Wv (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*3.25*
Bicycle level of service (Exhibit 15-4)	*C*
Notes	
1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain. 2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F. 3. For the analysis direction only and for v>200 veh/h. 4. For the analysis direction only 5. Exhibit 15-20 provides coefficients a and b for Equation 15-10. 6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.	

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DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	*NKL*	Highway / Direction of Travel	*White Rock Road - EB/NB*
Agency or Company	*MRO Engineers, Inc.*	From/To	*Stonebriar Dr. to County Line*
Date Performed	*12/19/2016*	Jurisdiction	*El Dorado County, CA*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*Existing + Project Phase 1*

Project Description: *Folsom Heights*

Input Data

Analysis direction vol., V_d	*601*veh/h
Opposing direction vol., V_o	*523*veh/h
Shoulder width ft	*6.0*
Lane Width ft	*12.0*
Segment Length mi	*0.3*

☐ Class I highway ☐ Class II highway ☑ Class III highway

Terrain ☑ Level ☐ Rolling

Grade Length mi	Up/down
Peak-hour factor, PHF	*0.93*
No-passing zone	*100%*
% Trucks and Buses , P_T	*12 %*
% Recreational vehicles, P_R	*0%*
Access points *mi*	*3*/mi

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.1*	*1.1*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV,ATS}$=1/ (1+ P_T (E_T -1)+P_R (E_R -1))	*0.988*	*0.988*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*1.00*	*1.00*
Demand flow rate[2], v_i (pc/h) v_i=V_i / (PHF* $f_{g,ATS}$ * $f_{HV,ATS}$)	*654*	*569*

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*60.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*0.0 mi/h*
Free-flow speed, FFS=S_{FM}+0.00776(*v*/ $f_{HV,ATS}$)		Adj. for access points[4], f_A (Exhibit 15-8)	*0.8 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*2.3 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*59.3 mi/h*
		Average travel speed, ATS_d=FFS-0.00776($v_{d,ATS}$ + $v_{o,ATS}$) - $f_{np,ATS}$	*47.5 mi/h*
		Percent free flow speed, PFFS	*80.2 %*

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, f_{HV}=1/ (1+ P_T(E_T-1)+P_R(E_R-1))	*1.000*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*1.00*	*1.00*
Directional flow rate[2], v_i(pc/h) v_i=V_i/(PHF*$f_{HV,PTSF}$* $f_{g,PTSF}$)	*646*	*562*
Base percent time-spent-following[4], $BPTSF_d$(%)=100(1-$e^{av_d^b}$)	*60.2*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*33.5*	
Percent time-spent-following, $PTSF_d$(%)=$BPTSF_d$+$f_{np,PTSF}$ *($v_{d,PTSF}$ / $v_{d,PTSF}$ + $v_{o,PTSF}$)	*78.1*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*C*
Volume to capacity ratio, *v/c*	*0.53*
Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1700*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1700*

Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*80.2*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*646.2*
Effective width, Wv (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*6.07*
Bicycle level of service (Exhibit 15-4)	*F*
Notes	
1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain. 2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F. 3. For the analysis direction only and for v>200 veh/h. 4. For the analysis direction only 5. Exhibit 15-20 provides coefficients a and b for Equation 15-10. 6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.	

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DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		**Site Information**	
Analyst	*NKL*	Highway / Direction of Travel	*White Rock Road - WB/SB*
Agency or Company	*MRO Engineers, Inc.*	From/To	*Stonebriar Dr. to County Line*
Date Performed	*12/19/2016*	Jurisdiction	*El Dorado County, CA*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*Existing + Project Phase 1*

Project Description: *Folsom Heights*

Input Data

☐ Class I highway ☐ Class II highway ☑ Class III highway

Terrain ☑ Level ☐ Rolling

Analysis direction vol., V_d	*523*veh/h
Opposing direction vol., V_o	*601*veh/h
Shoulder width ft	*6.0*
Lane Width ft	*12.0*
Segment Length mi	*0.3*
Grade Length mi	Up/down
Peak-hour factor, PHF	*0.88*
No-passing zone	*100%*
% Trucks and Buses , P_T	*9* %
% Recreational vehicles, P_R	*0%*
Access points *mi*	*3*/mi

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.1*	*1.1*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.991*	*0.991*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*1.00*	*1.00*
Demand flow rate[2], v_i (pc/h) $v_i=V_i$ / (PHF* $f_{g,ATS}$ * $f_{HV,ATS}$)	*600*	*689*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
		Base free-flow speed[4], BFFS	*60.0* mi/h
Mean speed of sample[3], S_{FM}		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*0.0* mi/h
Total demand flow rate, both directions, *v*		Adj. for access points[4], f_A (Exhibit 15-8)	*0.8* mi/h
Free-flow speed, $FFS=S_{FM}+0.00776(v/f_{HV,ATS})$		Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*59.3* mi/h
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*1.7* mi/h	Average travel speed, ATS_d=FFS-0.00776($v_{d,ATS}$ + $v_{o,ATS}$) - $f_{np,ATS}$	*47.5* mi/h
		Percent free flow speed, PFFS	*80.2* %

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*1.00*	*1.00*
Directional flow rate[2], v_i(pc/h) $v_i=V_i$/(PHF*$f_{HV,PTSF}$* $f_{g,PTSF}$)	*594*	*683*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*59.1*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*31.6*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*73.8*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*C*
Volume to capacity ratio, *v/c*	*0.53*
Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1700*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1700*

Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*80.2*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*594.3*
Effective width, Wv (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*4.78*
Bicycle level of service (Exhibit 15-4)	*E*
Notes	

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*NKL*	Highway / Direction of Travel	*White Rock Road - EB/NB*
Agency or Company	*MRO Engineers, Inc.*	From/To	*Stonebriar Drive to Manchester*
Date Performed	*12/19/2016*	Jurisdiction	*El Dorado County, CA*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*Existing + Project Phase 1*

Project Description: *Folsom Heights*

Input Data

Analysis direction vol., V_d	*628*veh/h	☐ Class I highway ☐ Class II highway ☑ Class III highway	
Opposing direction vol., V_o	*643*veh/h	Terrain ☑ Level ☐ Rolling	
Shoulder width ft	*6.0*	Grade Length mi Up/down	
Lane Width ft	*12.0*	Peak-hour factor, PHF	*0.92*
Segment Length mi	*0.3*	No-passing zone	*100%*
		% Trucks and Buses , P_T	*3 %*
		% Recreational vehicles, P_R	*0%*
		Access points *mi*	*3*/mi

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.1*	*1.1*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV,ATS}$=1/ (1+ P_T(E_T-1)+P_R(E_R-1))	*0.997*	*0.997*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*1.00*	*1.00*
Demand flow rate[2], v_i (pc/h) v_i=V_i / (PHF* $f_{g,ATS}$ * $f_{HV,ATS}$)	*685*	*701*

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*60.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*0.0 mi/h*
Free-flow speed, FFS=S_{FM}+0.00776(*v*/ $f_{HV,ATS}$)		Adj. for access points[4], f_A (Exhibit 15-8)	*0.8 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*1.7 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*59.3 mi/h*
		Average travel speed, ATS_d=FFS-0.00776($v_{d,ATS}$ + $v_{o,ATS}$) - $f_{np,ATS}$	*46.8 mi/h*
		Percent free flow speed, PFFS	*79.0 %*

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, f_{HV}=1/ (1+ P_T(E_T-1)+P_R(E_R-1))	*1.000*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*1.00*	*1.00*
Directional flow rate[2], v_i(pc/h) v_i=V_i/(PHF*$f_{HV,PTSF}$* $f_{g,PTSF}$)	*683*	*699*
Base percent time-spent-following[4], $BPTSF_d$(%)=100(1-$e^{av_d^b}$)	*63.7*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*29.1*	
Percent time-spent-following, $PTSF_d$(%)=$BPTSF_d$+$f_{np,PTSF}$ *($v_{d,PTSF}$ / $v_{d,PTSF}$ + $v_{o,PTSF}$)	*78.1*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*C*
Volume to capacity ratio, *v/c*	*0.53*
Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1700*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1700*

Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*79.0*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*682.6*
Effective width, Wv (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*2.92*
Bicycle level of service (Exhibit 15-4)	*C*
Notes	

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	*NKL*	Highway / Direction of Travel	*White Rock Road - WB/SB*
Agency or Company	*MRO Engineers, Inc.*	From/To	*Stonebriar Drive to Manchester*
Date Performed	*12/19/2016*	Jurisdiction	*El Dorado County, CA*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*Existing + Project Phase 1*

Project Description: *Folsom Heights*

Input Data

Analysis direction vol., V_d	*643*veh/h	☐ Class I highway ☐ Class II highway ☑ Class III highway	
Opposing direction vol., V_o	*628*veh/h	Terrain ☑ Level ☐ Rolling	
Shoulder width ft	*6.0*	Grade Length mi Up/down	
Lane Width ft	*12.0*	Peak-hour factor, PHF	*0.84*
Segment Length mi	*0.3*	No-passing zone	*100%*
		% Trucks and Buses , P_T	*5* %
		% Recreational vehicles, P_R	*0%*
		Access points *mi*	*3*/mi

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.1*	*1.1*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV,ATS}$=1/ (1+ P_T(E_T-1)+P_R(E_R-1))	*0.995*	*0.995*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*1.00*	*1.00*
Demand flow rate[2], v_i (pc/h) $v_i=V_i$ / (PHF* $f_{g,ATS}$ * $f_{HV,ATS}$)	*769*	*751*

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*60.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*0.0 mi/h*
Free-flow speed, FFS=S_{FM}+0.00776(*v*/ $f_{HV,ATS}$)		Adj. for access points[4], f_A (Exhibit 15-8)	*0.8 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*1.5 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*59.3 mi/h*
		Average travel speed, ATS_d=FFS-0.00776($v_{d,ATS}$ + $v_{o,ATS}$) - $f_{np,ATS}$	*45.9 mi/h*
		Percent free flow speed, PFFS	*77.5 %*

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, f_{HV}=1/ (1+ P_T(E_T-1)+P_R(E_R-1))	*1.000*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*1.00*	*1.00*
Directional flow rate[2], v_i(pc/h) $v_i=V_i$/(PHF*$f_{HV,PTSF}$* $f_{g,PTSF}$)	*765*	*748*
Base percent time-spent-following[4], $BPTSF_d$(%)=100(1-$e^{av_d^b}$)	*67.8*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*26.7*	
Percent time-spent-following, $PTSF_d$(%)=$BPTSF_d$+$f_{np,PTSF}$ *($v_{d,PTSF}$ / $v_{d,PTSF}$ + $v_{o,PTSF}$)	*81.3*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*C*
Volume to capacity ratio, *v/c*	*0.53*
Capacity, $C_{d,ATS}$ (Equation 15-12) veh/h	*1700*
Capacity, $C_{d,PTSF}$ (Equation 15-13) veh/h	*1700*

Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*77.5*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*765.5*
Effective width, Wv (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*3.54*
Bicycle level of service (Exhibit 15-4)	*D*
Notes	

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If $v_i(v_d$ or $v_o)$ >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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APPENDIX F

CUMULATIVE NO PROJECT
LEVEL OF SERVICE CALCULATION WORKSHEETS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	10	1490	10	20	1060	60	10	0	30	100	0	70
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	11	1620	11	22	1152	65	11	0	33	109	0	76
Adj No. of Lanes	1	2	0	1	2	1	0	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	19	2379	16	34	2367	1059	13	0	40	155	0	138
Arrive On Green	0.01	0.66	0.66	0.02	0.67	0.67	0.03	0.00	0.03	0.09	0.00	0.09
Sat Flow, veh/h	1774	3604	24	1774	3539	1583	407	0	1220	1774	0	1583
Grp Volume(v), veh/h	11	795	836	22	1152	65	44	0	0	109	0	76
Grp Sat Flow(s),veh/h/ln	1774	1770	1858	1774	1770	1583	1627	0	0	1774	0	1583
Q Serve(g_s), s	0.5	22.1	22.2	1.0	12.7	1.1	2.1	0.0	0.0	4.8	0.0	3.7
Cycle Q Clear(g_c), s	0.5	22.1	22.2	1.0	12.7	1.1	2.1	0.0	0.0	4.8	0.0	3.7
Prop In Lane	1.00		0.01	1.00		1.00	0.25		0.75	1.00		1.00
Lane Grp Cap(c), veh/h	19	1168	1227	34	2367	1059	53	0	0	155	0	138
V/C Ratio(X)	0.57	0.68	0.68	0.64	0.49	0.06	0.83	0.00	0.00	0.71	0.00	0.55
Avail Cap(c_a), veh/h	89	1309	1375	111	2662	1191	163	0	0	267	0	238
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	39.3	8.4	8.4	38.8	6.5	4.6	38.4	0.0	0.0	35.4	0.0	34.9
Incr Delay (d2), s/veh	24.0	1.3	1.2	18.2	0.2	0.0	26.3	0.0	0.0	5.8	0.0	3.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	11.0	11.6	0.7	6.1	0.5	1.3	0.0	0.0	2.6	0.0	1.7
LnGrp Delay(d),s/veh	63.3	9.6	9.6	57.0	6.6	4.6	64.7	0.0	0.0	41.2	0.0	38.3
LnGrp LOS	E	A	A	E	A	A	E			D		D
Approach Vol, veh/h		1642			1239			44			185	
Approach Delay, s/veh		9.9			7.4			64.7			40.0	
Approach LOS		A			A			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		6.6	5.5	56.7		10.9	4.9	57.3
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		8.0	5.0	59.0		12.0	4.0	60.0
Max Q Clear Time (g_c+I1), s		4.1	3.0	24.2		6.8	2.5	14.7
Green Ext Time (p_c), s		0.0	0.0	28.5		0.3	0.0	35.2

Intersection Summary	
HCM 2010 Ctrl Delay	11.5
HCM 2010 LOS	B

Intersection	
Intersection Delay, s/veh	7.8
Intersection LOS	A

Movement	WBU	WBL	WBR	NBU	NBT	NBR	SBU	SBL	SBT
Vol, veh/h	0	20	0	0	50	20	0	5	150
Peak Hour Factor	0.92	0.93	0.93	0.92	0.93	0.93	0.92	0.93	0.93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	22	0	0	54	22	0	5	161
Number of Lanes	0	1	0	0	1	0	0	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	7.8	7.3	8
HCM LOS	A	A	A

Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	100%	3%
Vol Thru, %	71%	0%	97%
Vol Right, %	29%	0%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	70	20	155
LT Vol	0	20	5
Through Vol	50	0	150
RT Vol	20	0	0
Lane Flow Rate	75	22	167
Geometry Grp	1	1	1
Degree of Util (X)	0.082	0.028	0.187
Departure Headway (Hd)	3.924	4.65	4.034
Convergence, Y/N	Yes	Yes	Yes
Cap	907	774	888
Service Time	1.975	2.65	2.065
HCM Lane V/C Ratio	0.083	0.028	0.188
HCM Control Delay	7.3	7.8	8
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.3	0.1	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	60	1400	20	50	1340	90	20	0	40	60	0	30
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	69	1609	23	57	1540	103	23	0	46	69	0	34
Adj No. of Lanes	1	2	0	1	2	1	0	1	0	1	1	0
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	89	2354	34	73	2301	1029	29	0	58	102	0	91
Arrive On Green	0.05	0.66	0.66	0.04	0.65	0.65	0.05	0.00	0.05	0.06	0.00	0.06
Sat Flow, veh/h	1774	3572	51	1774	3539	1583	547	0	1095	1774	0	1583
Grp Volume(v), veh/h	69	796	836	57	1540	103	69	0	0	69	0	34
Grp Sat Flow(s),veh/h/ln	1774	1770	1854	1774	1770	1583	1642	0	0	1774	0	1583
Q Serve(g_s), s	3.2	23.5	23.6	2.7	22.7	2.1	3.5	0.0	0.0	3.2	0.0	1.7
Cycle Q Clear(g_c), s	3.2	23.5	23.6	2.7	22.7	2.1	3.5	0.0	0.0	3.2	0.0	1.7
Prop In Lane	1.00		0.03	1.00		1.00	0.33		0.67	1.00		1.00
Lane Grp Cap(c), veh/h	89	1166	1222	73	2301	1029	87	0	0	102	0	91
V/C Ratio(X)	0.78	0.68	0.68	0.78	0.67	0.10	0.80	0.00	0.00	0.68	0.00	0.37
Avail Cap(c_a), veh/h	189	1238	1297	168	2434	1089	156	0	0	189	0	169
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	39.6	8.9	8.9	40.1	9.1	5.5	39.5	0.0	0.0	39.0	0.0	38.3
Incr Delay (d2), s/veh	13.3	1.4	1.4	16.3	0.7	0.0	15.0	0.0	0.0	7.7	0.0	2.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	11.7	12.3	1.6	11.1	0.9	2.0	0.0	0.0	1.8	0.0	0.8
LnGrp Delay(d),s/veh	52.9	10.4	10.3	56.4	9.8	5.6	54.5	0.0	0.0	46.7	0.0	40.8
LnGrp LOS	D	B	B	E	A	A	D			D		D
Approach Vol, veh/h		1701			1700			69			103	
Approach Delay, s/veh		12.1			11.1			54.5			44.7	
Approach LOS		B			B			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		8.5	7.5	59.6		8.8	8.2	58.8
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		8.0	8.0	59.0		9.0	9.0	58.0
Max Q Clear Time (g_c+I1), s		5.5	4.7	25.6		5.2	5.2	24.7
Green Ext Time (p_c), s		0.1	0.0	30.0		0.1	0.0	29.9

Intersection Summary		
HCM 2010 Ctrl Delay		13.4
HCM 2010 LOS		B

Intersection	
Intersection Delay, s/veh	7.7
Intersection LOS	A

Movement	WBU	WBL	WBR	NBU	NBT	NBR	SBU	SBL	SBT
Vol, veh/h	0	10	0	0	130	20	0	5	80
Peak Hour Factor	0.92	0.98	0.98	0.92	0.98	0.98	0.92	0.98	0.98
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	10	0	0	133	20	0	5	82
Number of Lanes	0	1	0	0	1	0	0	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	7.7	7.8	7.6
HCM LOS	A	A	A

Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	100%	6%
Vol Thru, %	87%	0%	94%
Vol Right, %	13%	0%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	150	10	85
LT Vol	0	10	5
Through Vol	130	0	80
RT Vol	20	0	0
Lane Flow Rate	153	10	87
Geometry Grp	1	1	1
Degree of Util (X)	0.167	0.013	0.098
Departure Headway (Hd)	3.936	4.544	4.077
Convergence, Y/N	Yes	Yes	Yes
Cap	911	776	877
Service Time	1.962	2.641	2.111
HCM Lane V/C Ratio	0.168	0.013	0.099
HCM Control Delay	7.8	7.7	7.6
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.6	0	0.3

MULTILANE HIGHWAYS WORKSHEET(Direction 1)

General Information

Analyst	NKL
Agency or Company	MRO Engineers, Inc.
Date Performed	12/19/2016
Analysis Time Period	AM Peak Hour

Site Information

Highway/Direction to Travel	White Rock Road
From/To	Stonebriar Dr. to County Line
Jurisdiction	El Dorado County, CA
Analysis Year	Cumulative No Project

Project Description Folsom Heights

☐ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	1510	Peak-Hour Factor, PHF	0.83
AADT(veh/h)		%Trucks and Buses, P_T	15
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.930

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	3
Median Type, M	Divided
FFS (measured)	
Base Free-Flow Speed, BFFS	60.0

Calc Speed Adj and FFS

f_{LW} (mi/h)	0.0
f_{LC} (mi/h)	0.0
f_A (mi/h)	0.8
f_M (mi/h)	0.0
FFS (mi/h)	59.3

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	977
Speed, S (mi/h)	60.0
D (pc/mi/ln)	16.3
LOS	B

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*909.6*
Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*7.68*
Bicycle level of service (Exhibit 15-4)	*F*

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MULTILANE HIGHWAYS WORKSHEET(Direction 2)

General Information

Analyst	NKL
Agency or Company	MRO Engineers, Inc.
Date Performed	12/19/2016
Analysis Time Period	AM Peak Hour

Site Information

Highway/Direction to Travel	White Rock Road
From/To	Stonebriar Dr. to County Line
Jurisdiction	El Dorado County, CA
Analysis Year	Cumulative No Project

Project Description Folsom Heights

☐ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	1140	Peak-Hour Factor, PHF	0.94
AADT(veh/h)		%Trucks and Buses, P_T	10
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.952

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	3
Median Type, M	Divided
FFS (measured)	
Base Free-Flow Speed, BFFS	60.0

Calc Speed Adj and FFS

f_{LW} (mi/h)	0.0
f_{LC} (mi/h)	0.0
f_A (mi/h)	0.8
f_M (mi/h)	0.0
FFS (mi/h)	59.3

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	636
Speed, S (mi/h)	60.0
D (pc/mi/ln)	10.6
LOS	A

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*606.4*
Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*5.19*
Bicycle level of service (Exhibit 15-4)	*E*

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MULTILANE HIGHWAYS WORKSHEET(Direction 1)

General Information

Analyst	NKL
Agency or Company	MRO Engineers, Inc.
Date Performed	12/19/2016
Analysis Time Period	AM Peak Hour

Site Information

Highway/Direction to Travel	White Rock Road
From/To	Stonebriar Dr. to Manchester D
Jurisdiction	El Dorado County, CA
Analysis Year	Cumulative No Project

Project Description Folsom Heights

☐ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	1620	Peak-Hour Factor, PHF	0.83
AADT(veh/h)		%Trucks and Buses, P_T	5
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.976

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	3
Median Type, M	Divided
FFS (measured)	
Base Free-Flow Speed, BFFS	60.0

Calc Speed Adj and FFS

f_{LW} (mi/h)	0.0
f_{LC} (mi/h)	0.0
f_A (mi/h)	0.8
f_M (mi/h)	0.0
FFS (mi/h)	59.3

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	1000
Speed, S (mi/h)	60.0
D (pc/mi/ln)	16.7
LOS	B

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*975.9*
Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*3.66*
Bicycle level of service (Exhibit 15-4)	*D*

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MULTILANE HIGHWAYS WORKSHEET(Direction 2)

General Information		Site Information	
Analyst	NKL	Highway/Direction to Travel	White Rock Road
Agency or Company	MRO Engineers, Inc.	From/To	Stonebriar Dr. to Manchester D
Date Performed	12/19/2016	Jurisdiction	El Dorado County, CA
Analysis Time Period	AM Peak Hour	Analysis Year	Cumulative No Project

Project Description Folsom Heights

☐ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	1140	Peak-Hour Factor, PHF	0.91
AADT(veh/h)		%Trucks and Buses, P_T	4
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.980

Speed Inputs		Calc Speed Adj and FFS	
Lane Width, LW (ft)	12.0	f_{LW} (mi/h)	0.0
Total Lateral Clearance, LC (ft)	12.0	f_{LC} (mi/h)	0.0
Access Points, A (A/mi)	3	f_A (mi/h)	0.8
Median Type, M	Divided	f_M (mi/h)	0.0
FFS (measured)		FFS (mi/h)	59.3
Base Free-Flow Speed, BFFS	60.0		

Operations		Design	
Operational (LOS)		Design (N)	
Flow Rate, v_p (pc/h/ln)	638	Required Number of Lanes, N	
Speed, S (mi/h)	60.0	Flow Rate, v_p (pc/h)	
D (pc/mi/ln)	10.6	Max Service Flow Rate (pc/h/ln)	
LOS	A	Design LOS	

Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*626.4*
Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*3.15*
Bicycle level of service (Exhibit 15-4)	*C*

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MULTILANE HIGHWAYS WORKSHEET(Direction 1)

General Information

Analyst	NKL
Agency or Company	MRO Engineers, Inc.
Date Performed	12/19/2016
Analysis Time Period	PM Peak Hour

Site Information

Highway/Direction to Travel	White Rock Road
From/To	Stonebriar Dr. to County Line
Jurisdiction	El Dorado County, CA
Analysis Year	Cumulative No Project

Project Description Folsom Heights

☐ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	1480	Peak-Hour Factor, PHF	0.93
AADT(veh/h)		%Trucks and Buses, P_T	12
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.943

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	3
Median Type, M	Divided
FFS (measured)	
Base Free-Flow Speed, BFFS	60.0

Calc Speed Adj and FFS

f_{LW} (mi/h)	0.0
f_{LC} (mi/h)	0.0
f_A (mi/h)	0.8
f_M (mi/h)	0.0
FFS (mi/h)	59.3

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	843
Speed, S (mi/h)	60.0
D (pc/mi/ln)	14.1
LOS	B

Design

Design (N)

Required Number of Lanes, N

Flow Rate, v_p (pc/h)

Max Service Flow Rate (pc/h/ln)

Design LOS

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	795.7
Effective width, W_v (Eq. 15-29) ft	24.00
Effective speed factor, S_t (Eq. 15-30)	4.79
Bicycle level of service score, BLOS (Eq. 15-31)	6.18
Bicycle level of service (Exhibit 15-4)	F

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MULTILANE HIGHWAYS WORKSHEET(Direction 2)

General Information

Analyst	NKL
Agency or Company	MRO Engineers, Inc.
Date Performed	12/19/2016
Analysis Time Period	PM Peak Hour

Site Information

Highway/Direction to Travel	White Rock Road
From/To	Stonebriar Dr. to County Line
Jurisdiction	El Dorado County, CA
Analysis Year	Cumulative No Project

Project Description Folsom Heights

☐ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	1390	Peak-Hour Factor, PHF	0.88
AADT(veh/h)		%Trucks and Buses, P_T	9
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.957

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	3
Median Type, M	Divided
FFS (measured)	
Base Free-Flow Speed, BFFS	60.0

Calc Speed Adj and FFS

f_{LW} (mi/h)	0.0
f_{LC} (mi/h)	0.0
f_A (mi/h)	0.8
f_M (mi/h)	0.0
FFS (mi/h)	59.3

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	825
Speed, S (mi/h)	60.0
D (pc/mi/ln)	13.8
LOS	B

Design

Design (N)

Required Number of Lanes, N

Flow Rate, v_p (pc/h)

Max Service Flow Rate (pc/h/ln)

Design LOS

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*789.8*
Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*4.93*
Bicycle level of service (Exhibit 15-4)	*E*

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MULTILANE HIGHWAYS WORKSHEET(Direction 1)

General Information

Analyst	NKL
Agency or Company	MRO Engineers, Inc.
Date Performed	12/19/2016
Analysis Time Period	PM Peak Hour

Site Information

Highway/Direction to Travel	White Rock Road
From/To	Stonebriar Dr. to Manchester D
Jurisdiction	El Dorado County, CA
Analysis Year	Cumulative No Project

Project Description Folsom Heights

☐ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	1500	Peak-Hour Factor, PHF	0.84
AADT(veh/h)		%Trucks and Buses, P_T	3
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.985

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	3
Median Type, M	Divided
FFS (measured)	
Base Free-Flow Speed, BFFS	60.0

Calc Speed Adj and FFS

f_{LW} (mi/h)	0.0
f_{LC} (mi/h)	0.0
f_A (mi/h)	0.8
f_M (mi/h)	0.0
FFS (mi/h)	59.3

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	906
Speed, S (mi/h)	60.0
D (pc/mi/ln)	15.1
LOS	B

Design

Design (N)

Required Number of Lanes, N

Flow Rate, v_p (pc/h)

Max Service Flow Rate (pc/h/ln)

Design LOS

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*892.9*
Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*3.05*
Bicycle level of service (Exhibit 15-4)	*C*

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MULTILANE HIGHWAYS WORKSHEET(Direction 2)

General Information

Analyst	NKL
Agency or Company	MRO Engineers, Inc.
Date Performed	12/19/2016
Analysis Time Period	PM Peak Hour

Site Information

Highway/Direction to Travel	White Rock Road
From/To	Stonebriar Dr. to Manchester D
Jurisdiction	El Dorado County, CA
Analysis Year	Cumulative No Project

Project Description Folsom Heights

☐ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	1480	Peak-Hour Factor, PHF	0.92
AADT(veh/h)		%Trucks and Buses, P_T	5
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.976

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	3
Median Type, M	Divided
FFS (measured)	
Base Free-Flow Speed, BFFS	60.0

Calc Speed Adj and FFS

f_{LW} (mi/h)	0.0
f_{LC} (mi/h)	0.0
f_A (mi/h)	0.8
f_M (mi/h)	0.0
FFS (mi/h)	59.3

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	824
Speed, S (mi/h)	60.0
D (pc/mi/ln)	13.7
LOS	B

Design

Design (N)

Required Number of Lanes, N

Flow Rate, v_p (pc/h)

Max Service Flow Rate (pc/h/ln)

Design LOS

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*804.3*
Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*3.56*
Bicycle level of service (Exhibit 15-4)	*D*

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APPENDIX G

CUMULATIVE PLUS PROJECT
LEVEL OF SERVICE CALCULATION WORKSHEETS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	18	1549	10	20	1108	76	10	2	30	140	1	92
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	20	1684	11	22	1204	83	11	2	33	152	1	100
Adj No. of Lanes	1	2	0	1	2	1	0	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	32	2319	15	34	2282	1021	13	2	40	200	2	177
Arrive On Green	0.02	0.64	0.64	0.02	0.64	0.64	0.03	0.03	0.03	0.11	0.11	0.11
Sat Flow, veh/h	1774	3605	24	1774	3539	1583	391	71	1174	1774	16	1570
Grp Volume(v), veh/h	20	826	869	22	1204	83	46	0	0	152	0	101
Grp Sat Flow(s),veh/h/ln	1774	1770	1859	1774	1770	1583	1636	0	0	1774	0	1586
Q Serve(g_s), s	0.9	26.2	26.3	1.0	15.4	1.6	2.3	0.0	0.0	7.0	0.0	5.1
Cycle Q Clear(g_c), s	0.9	26.2	26.3	1.0	15.4	1.6	2.3	0.0	0.0	7.0	0.0	5.1
Prop In Lane	1.00		0.01	1.00		1.00	0.24		0.72	1.00		0.99
Lane Grp Cap(c), veh/h	32	1138	1196	34	2282	1021	56	0	0	200	0	179
V/C Ratio(X)	0.63	0.73	0.73	0.65	0.53	0.08	0.82	0.00	0.00	0.76	0.00	0.57
Avail Cap(c_a), veh/h	106	1223	1284	85	2404	1075	136	0	0	317	0	283
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	41.0	10.0	10.0	40.9	8.0	5.6	40.3	0.0	0.0	36.1	0.0	35.3
Incr Delay (d2), s/veh	19.2	2.0	1.9	18.9	0.2	0.0	24.3	0.0	0.0	5.9	0.0	2.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	13.3	13.9	0.7	7.4	0.7	1.4	0.0	0.0	3.7	0.0	2.4
LnGrp Delay(d),s/veh	60.2	12.0	12.0	59.8	8.2	5.6	64.6	0.0	0.0	42.0	0.0	38.1
LnGrp LOS	E	B	B	E	A	A	E			D		D
Approach Vol, veh/h		1715			1309			46			253	
Approach Delay, s/veh		12.6			8.9			64.6			40.4	
Approach LOS		B			A			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		6.9	5.6	58.0		13.5	5.5	58.1
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		7.0	4.0	58.0		15.0	5.0	57.0
Max Q Clear Time (g_c+I1), s		4.3	3.0	28.3		9.0	2.9	17.4
Green Ext Time (p_c), s		0.0	0.0	25.7		0.5	0.0	32.9

Intersection Summary	
HCM 2010 Ctrl Delay	14.0
HCM 2010 LOS	B

Intersection	
Intersection Delay, s/veh	8.1
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	1	1	63	0	20	2	0	0	26	50	20
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.93	0.92	0.93	0.92	0.92	0.93	0.93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1	1	68	0	22	2	0	0	28	54	22
Number of Lanes	0	0	1	0	0	0	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	2	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	1	1
HCM Control Delay	7.4	8	8
HCM LOS	A	A	A

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	100%	0%	2%	91%	3%
Vol Thru, %	0%	71%	2%	9%	96%
Vol Right, %	0%	29%	97%	0%	1%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	26	70	65	22	157
LT Vol	26	0	1	20	5
Through Vol	0	50	1	2	150
RT Vol	0	20	63	0	2
Lane Flow Rate	28	75	71	24	169
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.042	0.096	0.079	0.032	0.2
Departure Headway (Hd)	5.29	4.588	4.012	4.822	4.275
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	670	772	898	746	827
Service Time	3.077	2.374	2.014	2.826	2.367
HCM Lane V/C Ratio	0.042	0.097	0.079	0.032	0.204
HCM Control Delay	8.3	7.9	7.4	8	8.5
HCM Lane LOS	A	A	A	A	A
HCM 95th-tile Q	0.1	0.3	0.3	0.1	0.7

Intersection				
Intersection Delay, s/veh				
Intersection LOS				

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	5	150	2
Peak Hour Factor	0.92	0.93	0.93	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	5	161	2
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	8.5
HCM LOS	A

Lane

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	75	1491	20	50	1451	126	20	4	40	87	4	41
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	86	1714	23	57	1668	145	23	5	46	100	5	47
Adj No. of Lanes	1	2	0	1	2	1	0	1	0	1	1	0
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	110	2299	31	73	2201	985	29	6	58	137	12	113
Arrive On Green	0.06	0.64	0.64	0.04	0.62	0.62	0.06	0.06	0.06	0.08	0.08	0.08
Sat Flow, veh/h	1774	3576	48	1774	3539	1583	515	112	1029	1774	154	1452
Grp Volume(v), veh/h	86	847	890	57	1668	145	74	0	0	100	0	52
Grp Sat Flow(s),veh/h/ln	1774	1770	1854	1774	1770	1583	1655	0	0	1774	0	1607
Q Serve(g_s), s	4.2	28.9	29.0	2.8	29.7	3.4	3.9	0.0	0.0	4.8	0.0	2.7
Cycle Q Clear(g_c), s	4.2	28.9	29.0	2.8	29.7	3.4	3.9	0.0	0.0	4.8	0.0	2.7
Prop In Lane	1.00		0.03	1.00		1.00	0.31		0.62	1.00		0.90
Lane Grp Cap(c), veh/h	110	1138	1192	73	2201	985	94	0	0	137	0	124
V/C Ratio(X)	0.78	0.74	0.75	0.78	0.76	0.15	0.79	0.00	0.00	0.73	0.00	0.42
Avail Cap(c_a), veh/h	161	1166	1222	121	2252	1007	188	0	0	202	0	183
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	40.7	10.8	10.8	41.8	11.9	6.9	41.0	0.0	0.0	39.7	0.0	38.7
Incr Delay (d2), s/veh	13.6	2.6	2.5	16.4	1.5	0.1	13.4	0.0	0.0	7.1	0.0	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	14.7	15.4	1.7	14.8	1.5	2.1	0.0	0.0	2.6	0.0	1.3
LnGrp Delay(d),s/veh	54.3	13.3	13.3	58.2	13.4	7.0	54.4	0.0	0.0	46.8	0.0	40.9
LnGrp LOS	D	B	B	E	B	A	D			D		D
Approach Vol, veh/h		1823			1870			74			152	
Approach Delay, s/veh		15.2			14.3			54.4			44.8	
Approach LOS		B			B			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		9.0	7.6	60.6		10.8	9.5	58.7
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		10.0	6.0	58.0		10.0	8.0	56.0
Max Q Clear Time (g_c+I1), s		5.9	4.8	31.0		6.8	6.2	31.7
Green Ext Time (p_c), s		0.1	0.0	25.4		0.1	0.0	23.1

Intersection Summary			
HCM 2010 Ctrl Delay			16.7
HCM 2010 LOS			B

Intersection	
Intersection Delay, s/veh	8.2
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	4	3	42	0	10	4	0	0	55	130	20
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.98	0.92	0.98	0.92	0.92	0.98	0.98
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	4	3	46	0	10	4	0	0	60	133	20
Number of Lanes	0	0	1	0	0	0	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	2	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	1	1
HCM Control Delay	7.4	8	8.5
HCM LOS	A	A	A

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	100%	0%	8%	71%	6%
Vol Thru, %	0%	87%	6%	29%	89%
Vol Right, %	0%	13%	86%	0%	6%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	55	150	49	14	90
LT Vol	55	0	4	10	5
Through Vol	0	130	3	4	80
RT Vol	0	20	42	0	5
Lane Flow Rate	60	153	53	15	92
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.086	0.196	0.062	0.02	0.112
Departure Headway (Hd)	5.2	4.606	4.16	4.845	4.39
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	685	773	865	742	819
Service Time	2.963	2.368	2.165	2.853	2.4
HCM Lane V/C Ratio	0.088	0.198	0.061	0.02	0.112
HCM Control Delay	8.5	8.5	7.4	8	8
HCM Lane LOS	A	A	A	A	A
HCM 95th-tile Q	0.3	0.7	0.2	0.1	0.4

Intersection				
Intersection Delay, s/veh				
Intersection LOS				

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	5	80	5
Peak Hour Factor	0.92	0.98	0.98	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	5	82	5
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	8
HCM LOS	A

Lane

MULTILANE HIGHWAYS WORKSHEET(Direction 1)

General Information

Analyst	NKL
Agency or Company	MRO Engineers, Inc.
Date Performed	12/19/2016
Analysis Time Period	AM Peak Hour

Site Information

Highway/Direction to Travel	White Rock Road
From/To	Stonebriar Dr. to County Line
Jurisdiction	El Dorado County, CA
Analysis Year	Cumulative + Project

Project Description Folsom Heights

☐ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	1577	Peak-Hour Factor, PHF	0.83
AADT(veh/h)		%Trucks and Buses, P_T	15
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.930

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	3
Median Type, M	Divided
FFS (measured)	
Base Free-Flow Speed, BFFS	60.0

Calc Speed Adj and FFS

f_{LW} (mi/h)	0.0
f_{LC} (mi/h)	0.0
f_A (mi/h)	0.8
f_M (mi/h)	0.0
FFS (mi/h)	59.3

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	1021
Speed, S (mi/h)	60.0
D (pc/mi/ln)	17.0
LOS	B

Design

Design (N)

Required Number of Lanes, N

Flow Rate, v_p (pc/h)

Max Service Flow Rate (pc/h/ln)

Design LOS

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*950.0*
Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*7.70*
Bicycle level of service (Exhibit 15-4)	*F*

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MULTILANE HIGHWAYS WORKSHEET(Direction 2)

General Information

Analyst	NKL
Agency or Company	MRO Engineers, Inc.
Date Performed	12/19/2016
Analysis Time Period	AM Peak Hour

Site Information

Highway/Direction to Travel	White Rock Road
From/To	Stonebriar Dr. to County Line
Jurisdiction	El Dorado County, CA
Analysis Year	Cumulative + Project

Project Description Folsom Heights

☐ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	1210	Peak-Hour Factor, PHF	0.94
AADT(veh/h)		%Trucks and Buses, P_T	10
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.952

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	3
Median Type, M	Divided
FFS (measured)	
Base Free-Flow Speed, BFFS	60.0

Calc Speed Adj and FFS

f_{LW} (mi/h)	0.0
f_{LC} (mi/h)	0.0
f_A (mi/h)	0.8
f_M (mi/h)	0.0
FFS (mi/h)	59.3

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	675
Speed, S (mi/h)	60.0
D (pc/mi/ln)	11.3
LOS	B

Design

Design (N)

Required Number of Lanes, N

Flow Rate, v_p (pc/h)

Max Service Flow Rate (pc/h/ln)

Design LOS

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*643.6*
Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*5.22*
Bicycle level of service (Exhibit 15-4)	*E*

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MULTILANE HIGHWAYS WORKSHEET(Direction 1)

General Information

Analyst	NKL
Agency or Company	MRO Engineers, Inc.
Date Performed	12/19/2016
Analysis Time Period	AM Peak Hour

Site Information

Highway/Direction to Travel	White Rock Road
From/To	Stonebriar Dr. to Manchester D
Jurisdiction	El Dorado County, CA
Analysis Year	Cumulative + Project

Project Description Folsom Heights

☐ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	1719	Peak-Hour Factor, PHF	0.83
AADT(veh/h)		%Trucks and Buses, P_T	5
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.976

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	3
Median Type, M	Divided
FFS (measured)	
Base Free-Flow Speed, BFFS	60.0

Calc Speed Adj and FFS

f_{LW} (mi/h)	0.0
f_{LC} (mi/h)	0.0
f_A (mi/h)	0.8
f_M (mi/h)	0.0
FFS (mi/h)	59.3

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	1061
Speed, S (mi/h)	60.0
D (pc/mi/ln)	17.7
LOS	B

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*1035.5*
Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*3.69*
Bicycle level of service (Exhibit 15-4)	*D*

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MULTILANE HIGHWAYS WORKSHEET(Direction 2)

General Information

Analyst	NKL
Agency or Company	MRO Engineers, Inc.
Date Performed	12/19/2016
Analysis Time Period	AM Peak Hour

Site Information

Highway/Direction to Travel	White Rock Road
From/To	Stonebriar Dr. to Manchester D
Jurisdiction	El Dorado County, CA
Analysis Year	Cumulative + Project

Project Description Folsom Heights

☐ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	1204	Peak-Hour Factor, PHF	0.91
AADT(veh/h)		%Trucks and Buses, P_T	4
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.980

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	3
Median Type, M	Divided
FFS (measured)	
Base Free-Flow Speed, BFFS	60.0

Calc Speed Adj and FFS

f_{LW} (mi/h)	0.0
f_{LC} (mi/h)	0.0
f_A (mi/h)	0.8
f_M (mi/h)	0.0
FFS (mi/h)	59.3

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	674
Speed, S (mi/h)	60.0
D (pc/mi/ln)	11.2
LOS	B

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*661.5*
Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*3.17*
Bicycle level of service (Exhibit 15-4)	*C*

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MULTILANE HIGHWAYS WORKSHEET(Direction 1)

General Information

Analyst	NKL
Agency or Company	MRO Engineers, Inc.
Date Performed	12/19/2016
Analysis Time Period	PM Peak Hour

Site Information

Highway/Direction to Travel	White Rock Road
From/To	Stonebriar Dr. to County Line
Jurisdiction	El Dorado County, CA
Analysis Year	Cumulative + Project

Project Description Folsom Heights

☐ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	1586	Peak-Hour Factor, PHF	0.93
AADT(veh/h)		%Trucks and Buses, P_T	12
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.943

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	3
Median Type, M	Divided
FFS (measured)	
Base Free-Flow Speed, BFFS	60.0

Calc Speed Adj and FFS

f_{LW} (mi/h)	0.0
f_{LC} (mi/h)	0.0
f_A (mi/h)	0.8
f_M (mi/h)	0.0
FFS (mi/h)	59.3

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	903
Speed, S (mi/h)	60.0
D (pc/mi/ln)	15.1
LOS	B

Design

Design (N)

Required Number of Lanes, N

Flow Rate, v_p (pc/h)

Max Service Flow Rate (pc/h/ln)

Design LOS

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*852.7*
Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*6.21*
Bicycle level of service (Exhibit 15-4)	*F*

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MULTILANE HIGHWAYS WORKSHEET(Direction 2)

General Information		Site Information	
Analyst	NKL	Highway/Direction to Travel	White Rock Road
Agency or Company	MRO Engineers, Inc.	From/To	Stonebriar Dr. to County Line
Date Performed	12/19/2016	Jurisdiction	El Dorado County, CA
Analysis Time Period	PM Peak Hour	Analysis Year	Cumulative + Project

Project Description Folsom Heights

☐ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	1512	Peak-Hour Factor, PHF	0.88
AADT(veh/h)		%Trucks and Buses, P_T	9
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.957

Speed Inputs		Calc Speed Adj and FFS	
Lane Width, LW (ft)	12.0	f_{LW} (mi/h)	0.0
Total Lateral Clearance, LC (ft)	12.0	f_{LC} (mi/h)	0.0
Access Points, A (A/mi)	3	f_A (mi/h)	0.8
Median Type, M	Divided	f_M (mi/h)	0.0
FFS (measured)		FFS (mi/h)	59.3
Base Free-Flow Speed, BFFS	60.0		

Operations		Design	
Operational (LOS)		Design (N)	
Flow Rate, v_p (pc/h/ln)	897	Required Number of Lanes, N	
Speed, S (mi/h)	60.0	Flow Rate, v_p (pc/h)	
D (pc/mi/ln)	14.9	Max Service Flow Rate (pc/h/ln)	
LOS	B	Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*859.1*
Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*4.97*
Bicycle level of service (Exhibit 15-4)	*E*

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MULTILANE HIGHWAYS WORKSHEET(Direction 1)

General Information

Analyst	NKL
Agency or Company	MRO Engineers, Inc.
Date Performed	12/19/2016
Analysis Time Period	PM Peak Hour

Site Information

Highway/Direction to Travel	White Rock Road
From/To	Stonebriar Dr. to Manchester D
Jurisdiction	El Dorado County, CA
Analysis Year	Cumulative + Project

Project Description Folsom Heights

☐ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	1618	Peak-Hour Factor, PHF	0.84
AADT(veh/h)		%Trucks and Buses, P_T	3
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.985

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	3
Median Type, M	Divided
FFS (measured)	
Base Free-Flow Speed, BFFS	60.0

Calc Speed Adj and FFS

f_{LW} (mi/h)	0.0
f_{LC} (mi/h)	0.0
f_A (mi/h)	0.8
f_M (mi/h)	0.0
FFS (mi/h)	59.3

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	977
Speed, S (mi/h)	60.0
D (pc/mi/ln)	16.3
LOS	B

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*963.1*
Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*3.09*
Bicycle level of service (Exhibit 15-4)	*C*

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MULTILANE HIGHWAYS WORKSHEET(Direction 2)

General Information

Analyst	NKL
Agency or Company	MRO Engineers, Inc.
Date Performed	12/19/2016
Analysis Time Period	PM Peak Hour

Site Information

Highway/Direction to Travel	White Rock Road
From/To	Stonebriar Dr. to Manchester D
Jurisdiction	El Dorado County, CA
Analysis Year	Cumulative + Project

Project Description Folsom Heights

☐ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	1627	Peak-Hour Factor, PHF	0.92
AADT(veh/h)		%Trucks and Buses, P_T	5
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.976

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	3
Median Type, M	Divided
FFS (measured)	
Base Free-Flow Speed, BFFS	60.0

Calc Speed Adj and FFS

f_{LW} (mi/h)	0.0
f_{LC} (mi/h)	0.0
f_A (mi/h)	0.8
f_M (mi/h)	0.0
FFS (mi/h)	59.3

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	906
Speed, S (mi/h)	60.0
D (pc/mi/ln)	15.1
LOS	B

Design

Design (N)

Required Number of Lanes, N

Flow Rate, v_p (pc/h)

Max Service Flow Rate (pc/h/ln)

Design LOS

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*884.2*
Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*3.61*
Bicycle level of service (Exhibit 15-4)	*D*

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