Appendix G

Preliminary Drainage and Storm Water Quality Report

NATOMA SENIOR APARTMENTS

PRELIMINARY DRAINAGE & STORM WATER QUALITY REPORT



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I. EXECUTIVE SUMMARY

This study presents the preliminary hydrologic analysis for the Natoma Senior Apartment project, located southeast of the intersection of E. Natoma Street and Prison Road, in the City of Folsom, see Figure 1. Vicinity Map. The project proposes to construct a senior living apartment building, associated utilities drive aisles, parking and landscaping on approximately 4.9 acres of undeveloped land.

The proposed storm drain system has been designed and analyzed in accordance with:

- City of Folsom Design and Procedures Manual and Improvement Standards, Section 19: Storm Drainage, dated February 2020. (City Manual)
- Sacramento City/County Drainage Manual Volume 2: Hydrology Standards, dated December 1996. (County Manual)
- Stormwater Quality Design Manual for the Sacramento Region, dated July 2018. (SWQ Manual)

The site consists of open space with a fairly dense oak tree canopy and a drainage channel traversing the site adjacent to E. Natoma Street. The Oak Parkway Trail separated the project site from residential properties to the south. The Cimmaron Hill Sub-division is located east of the project site and the entrance to Folsom State Prison (Prison) and the Johnny Cash Trail are located on the northwest side of E. Natoma Street. The proposed storm drain system will be required to:

- > Maintain existing storm drain conveyance for offsite sheds.
- Implement Source Control Measures
- Hydromodification Control
 - Per Figure 5-2 Hydromodification Management Applicability Map of the SWQ Manual, the project site is located in an area exempt from the hydromodification control requirements. Hydromodification control is <u>not required</u>.
- Implement Low Impact Development Measures
- Storm Water Treatment
 - $\circ~$ Capture and infiltrate or treat the runoff from the project site generated by the 85^{th} percentile storm; and/or
 - Flow based treatment for the flow generated by the 85th percentile storm, multiplied by a factor of 2.
- Implement Full Trash Capture Measures
 - Remove particles larger than 5 mm from the system prior to discharging from the site.

A 36-inch culvert under the southernmost driveway is proposed to allow drainage through the existing channel to continue as well as mitigate the increased flows due to the development of the site. The 36-inch culvert will restrict runoff, detaining water in the existing to channel. The developed discharge rates at a culvert downstream from the site the site have been estimated to be equal to existing conditions for the 10-year, 24-hour storm event and lower for the 100-year, 24-hour storm event by 5.84 cfs. The estimated discharge rates are summarized in the table below:

	Q_{10} (cfs)	Q ₁₀₀ (cfs)
Existing Conditions	75.3	112.3
Developed Conditions	75.3	106.46

Peak Discharge Rates (Downstream from Project Site)

II. INTRODUCTION

This study presents the preliminary hydrologic analysis for the Natoma Senior Apartment project, located southeast of the intersection of E. Natoma Street and Prison Road, in the City of Folsom, APN: 071-0320-042, see Figure 1. Vicinity Map. The project proposes to construct a senior living apartment building, associated utilities drive aisles, parking and landscaping on approximately 4.9 acres of undeveloped land.





The proposed storm drain system has been designed and analyzed in accordance with:

- City of Folsom Design and Procedures Manual and Improvement Standards, Section 19: Storm Drainage, dated February 2020. (City Manual)
- Sacramento City/County Drainage Manual Volume 2: Hydrology Standards, dated December 1996. (County Manual)
- Stormwater Quality Design Manual for the Sacramento Region, dated July 2018. (SWQ Manual)

III. BACKGROUND

The project site is located on the southeast side of East Natoma Street, at the intersection with Prison Road, covering approximately 4.9 acres of undeveloped land. The site consists of open space with a fairly dense oak tree canopy and a drainage channel traversing the site adjacent to E. Natoma Street. The Oak Parkway Trail separates the project site from residential properties to the south. The Cimmaron Hill Sub-division is located east of the project site and the entrance to Folsom State Prison (Prison) and the Johnny Cash Trail are located on the northwest side of E, Natoma Street.

The existing channel conveys runoff from a portion of the Cimmaron Hill Subdivision as well as runoff from a portion of the Prison open space. Runoff from the Prison property is conveyed to the existing channel through a 24-inch culvert that crosses E. Natoma Street. The channel conveys runoff to a 48-inch culvert that crosses and discharges on the northwest side of E. Natoma Street, ultimately discharging in to the American River approximately 2,500 feet west of E. Natoma Street.

The existing 24-inch culvert that conveys runoff from the Prison site limits the contribution of runoff to the existing channel from the prison site. The 24-inch culvert has a maximum flow rate of 23.3 cfs based on the size, slope and maximum headwater elevation. It is assumed that once the ponding area upstream of the 24-inch culvert if full, runoff will release overland, following the bike trail to trench drains located under the Prison Road bridge, ultimately reaching the American River through Robbers Ravine.

A multi-family residential project is proposed for the site that will create more than an acre of impervious area. In accordance with the SWQ Manual, the project is required to:

- Implement Source Control Measures
 - Inlet stamps and signage to prohibit non-stormwater discharge.
- Hydromodification Control
 - Per Figure 5-2 Hydromodification Management Applicability Map of the SWQ Manual, the project site is located in an area exempt from the hydromodification control requirements.
 - Hydromodification control is **<u>not required</u>**.
- Implement Low Impact Development Measures
 - o Install interceptor trees and preserve existing tree canopy
 - Disconnect impervious surface areas
 - Achieve a minimum of 100 points, calculated using the LID Worksheets provided with the SWQ Manual.
- Storm Water Treatment
 - Capture and infiltrate or treat the runoff from the project site generated by the 85th percentile storm; and/or
 - Flow based treatment for the flow generated by the 85th percentile storm, multiplied by a factor of 2.
- Implement Full Trash Capture Measures
 - Remove particles larger than 5 mm from the system prior to discharging from the site.

IV. METHODOLOGY

Preliminary hydrologic analysis was performed using the Sacramento Method within the SacCalc software. The Sacramento Method estimates runoff based on:

- \triangleright Shed Area
- ➢ Mean Elevation
- Precipitation Zone 3 (See County Manual Figure 2-11 in Appendix A)
- Land use and Hydrologic Soil Classification

Discharge rates for existing conditions and fully developed conditions were determined for the 10year and 100-year, 24-hour storm events for each contributing sub-shed, offsite and onsite. Flows from each sub-shed were added, neglecting all losses, at junction nodes.

Bentley Culvert Master software was used to determine the maximum flow rate through culverts conveying stormwater to and from the drainage channel based on:

- > Pipe material, size and slope
- Maximum headwater elevation based on topography
 Assumed tailwater elevation equal to the top of pipe at outlet

The Bentley Culvert Master reports can be seen Appendix C.

V. **EXISTING CONDITIONS**

See the Existing Condition Shed Map in Appendix A. Contributing areas to the drainage channel include:

- > The Cimmaron Subdivision, east of the site.
- > The Prison site that can be conveyed through the 24-inch culvert.
- > The Sub-division south of the project site
- > The proposed project site (Open Space)
- > Portions of E. Natoma Street.

site soils have a Group D Hydrologic Soil classification, meaning infiltration rates through the soil is relatively low. Input data used to estimate the runoff under existing conditions is tabulated in Table 1 below:

Shed	Area (ac.)	Mean Elevation (ft.)	Precipitation Zone (Figure 2-11)	Land use
XA1	20	400	Zone 3	100% MDR
XA2	56	425	Zone 3	100% Open Space
XA3	11	350	Zone 3	10% Highway 20% MDR 70% Open Space

Table 1. SacCalc Input Data – Existing Conditions

The contributing runoff was determined using the SacCalc software and summed at junction nodes to estimate the cumulative flow. This analysis neglects losses through friction and travel time and should be considered conservative. SacCalc reports can be seen in Appendix B, contributing discharge rates from each shed and the cumulative discharge rate at each junction node are summarized in Table 2 below:

Shed / Model Design Point	Contributing 10-Year Q (cfs)	Cumulative 10-Year Q (cfs)	Contributing 100-Year Q (cfs)	Cumulative 100-Year Q (cfs)
XA1	34	-	57	-
XA2	23.3*	-	23.3*	-
XA1 – XA2	-	57.3	-	80.3
XA3	18	-	32	-
XA1 – XA3	-	75.3	-	112.3

Table 2. Existing Conditions Peak Discharge Rates

* Contributing flow from Shed XA2 is limited by the capacity of the existing 24-inch culvert

VI. DEVELOPED CONDITIONS

The developed site will consist of a 3-story apartment building, associated parking and drive aisles and landscaping. The existing drainage channel will remain and will be required to maintain the existing drainage patterns, conveying the runoff generated onsite and offsite, as is the case under existing conditions.

The proposed project will take place entirely within SHED XA3 as shown on the Existing Conditions Shed Map, see appendix A. Under developed conditions, Shed XA3 has been divided into seven sub-sheds to estimate the runoff at discharge at junction locations throughout the site based on the developed land use.

A 36-inch culvert is proposed to be installed under the southernmost driveway to allow runoff to continue to flow trough the existing channel. The 36-inch culvert will restrict the developed flows, causing water to back up in the existing channel. The existing channel will function as a detention basin in high intensity storm events. Bentley Culvert Master was used to determine the maximum flow rate through the 36-inch culvert, based on the size, slope and estimated headwater elevations. The preliminary analysis considers the worst possible scenario under the following assumptions:

- > 10-year, 24-hour storm event
 - $HGL_{10} = Maximum$ depth while not exceeding a maximum discharge rate through the 36-inch culvert of <u>63.8 cfs</u>
 - 75.3 cfs 4.2 cfs (A3-6) 7.3(A3-7) cfs = $\underline{63.8 \text{ cfs}}$
 - Flow Rates above the mitigated flow rate will require detention in the existing channel. The volume available must exceed the volume required for mitigation.
- > 100-year, 24-hour storm event
 - HGL₁₀₀ = Maximum water surface elevation = 335
 - Minimum of 1-foot of freeboard within the channel required.
 - Maximum flow rate through the 36-inch culvert based on HGL₁₀₀ (See Culvert Master Report in Appendix C)

Runoff was estimated using the Sacramento Method within SacCalc software, employing the same methods used to determine the runoff under existing conditions. Input data used to estimate the runoff under developed conditions for Shed A3 are tabulated in Table 3 below:

Shed	Area (ac.)	Mean Elevation (ft.)	Precipitation Zone (Figure 2-11)	Land use
A3-1	2.7	350	Zone 3	100% MDR
A3-2	1.0	345	Zone 3	100% Apartments
A3-4	0.3	340	Zone 3	100% Highway
A3-5	1.0	330	Zone 3	100% Open Space
A3-6	2.0	345	Zone 3	100% Apartments
A3-7	4.3	340	Zone 3	10% Highway 40% MDR 50% Open Space

Table 3. SacCalc Input Data – Developed Conditions

The contributing runoff was determined using the SacCalc software and summed at junction nodes to estimate the cumulative flow. This analysis neglects losses through friction and travel time and should be considered conservative. SacCalc reports can be seen in Appendix B, contributing discharge rates from each shed and the cumulative discharge rate at each junction node are summarized in Table 4 below:

Shed / Model Design Point	Contributing 10-Year Q (cfs)	Cumulative 10-Year Q (cfs)	Contributing 100-Year Q (cfs)	Cumulative 100-Year Q (cfs)
XA1	34	-	57	-
A3-1	4.6	-	7.8	-
XA1 – XA3-1	-	38.6	-	64.8
A3-2	2.1	-	3.7	-
XA1 – A3-2	-	40.7	-	68.5
XA2	23.3*	-	23.3*	-
XA – A3-3	-	64	-	91.8
A3-4	0.6	-	1.1	-
A3-5	1.2	-	2.4	-
XA – A3-5	-	**63.9	-	**87.16
A3-6	4.2	-	7.3	-
A3-7	7.2	-	12	-
XA – A3-7	-	75.3	-	106.46

Table 4. Developed Conditions Peak Discharge Rates

Contributing flow from Shed XA2 is limited by the capacity of the existing 24-inch culvert (See Culvert Master Report in Appendix C)

** Flow restricted through 36-inch culvert (See Culvert Master Reports in Appendix C)

Comparison of the runoff rates under existing and developed conditions show equal flow rates under existing and developed conditions during the 10-year, 24-hour storm event. flows have been reduced from 112.3 cfs under existing conditions to 106.46 cfs under developed conditions. The existing channel has the capacity to detain flows exceeding the maximum flow through the 36-inch culvert, while maintaining adequate freeboard within the channel. The development of the site will maintain existing drainage paths and will not have a negative effect on the existing storm system.

VII. STORM WATER QUALITY

The proposed is a multi-family residential project creating more than an acre of impervious area. In accordance with the SWQ Manual, the project is required to:

- Implement Source Control Measures
 - Inlet stamps and signage to prohibit non-stormwater discharge.
- Hydromodification Control
 - Per Figure 5-2 Hydromodification Management Applicability Map of the SWQ Manual, the project site is located in an area exempt from the hydromodification control requirements.
 - Hydromodification control is <u>not required</u>.
- Implement Low Impact Development Measures
 - Install interceptor trees and preserve existing tree canopy
 - Disconnect impervious surface areas
 - Achieve a minimum of 100 points, calculated using the LID Worksheets provided with the SWQ Manual.
- Storm Water Treatment
 - Capture and infiltrate or treat the runoff from the project site generated by the 85th percentile storm; and/or
 - Flow based treatment for the flow generated by the 85th percentile storm, multiplied by a factor of 2.
- Implement Full Trash Capture Measures
 - Remove particles larger than 5 mm from the system prior to discharging from the site.

The project proposes to:

- Stamp inlets to prohibit non-storm water discharge
- Plant Interceptor trees
- Disconnect roof areas by designing to roof drains that discharge to the surface and are routed through vegetated swales prior to entering the underground storm drain system.
- drain paved areas overland to bio-retention basins sized to retain the runoff generated by the 85th percentile storm.
- Install pipe screens in the system prior to discharging from the site to remove particles large than 5 mm. (Full Trash Capture)

The proposed site has been divided into drainage management areas as show on the Drainage Management Area Map in Appendix C. The LID Worksheets from the SWQ Manual were used to analyze each DMA to confirm adequate treatment and LID points are achieved. The LID worksheets can be seen in Appendix D.

VIII. CONCLUSION

Preliminary hydrologic and hydraulic analysis estimates no increased runoff rate during the 10year, 24-hour storm event and a decrease of 5.84 cfs during 100-year, 24-hour storm event due to the development of the site as proposed. The hydrologic estimations neglect losses due to friction, travel time and proposed onsite storage and should be considered conservative.

Storm Event	Storm Event Existing (XA1 – XA3) (cfs)	
10-Year	75.3	75.3
100-Year	112.3	106.46

 Table 5. Peak Discharge Rates Comparison at the 36" Culvert

The preliminary analysis presented in this report show the development site will not increase the flow rate through the existing channel during the 10-year, 24-hour storm event. Flow rates through the existing channel are estimated to decrease during the 100-year, 24-hour storm event. The existing channel has the capacity, upstream from the proposed 36-inch culvert, to detain flows exceeding the capacity of the culvert while maintain at least 1-foot of freeboard. The offsite areas draining through the existing channel and associated underground system will not be negatively affected by the development of this project.

IX. REFERENCES

- City of Folsom Design and Procedures Manual and Improvement Standards, Section 19: Storm Drainage, dated February 2020. (City Manual)
- Sacramento City/County Drainage Manual Volume 2: Hydrology Standards, dated December 1996. (County Manual)
- Stormwater Quality Design Manual for the Sacramento Region, dated July 2018. (SWQ Manual)

APPENDIX A - FIGURES

Existing Conditions Shed Map Overall Existing Conditions Shed Map - Onsite Developed Conditions Shed Map - Onsite

EXISTING CONDITIONS SHED MAP - OVERALL NATOMA SENIOR APARTMENTS CITY OF FOLSOM, CA



<u>LEGEND</u> PROPOSED DESCRIPTION EXISTING STORM DRAIN SHED BOUNDARY XA2 "SUBSHED ID" "SUBSHED AREA" TOTAL AREA TOTAL Q₁₀ TOTAL Q₁₀₀ LAND USE SUB AREA = 56 ac Σ AREAS = 56 ac $Q_{10} = 118 \text{ cfs}$ $Q_{100} = 204 \text{ cfs}$ LAND USE OPEN SPACE -7 OVERLAND RELEASE



EXISTING SHED MAP OVERALL AUGUST 16, 2022



SHEET 1 OF 3

EXISTING CONDITIONS SHED MAP - PROJECT SITE NATOMA SENIOR APARTMENTS CITY OF FOLSOM, CA



NATOM	A SENIOR AF	PARTMENTS I	HYDROLOGY				
	CONTRIBUTING	CUMULATIVE	CONTRIBUTING	CUMULATIVE			
SHED / MODEL DESIGN POINT	10-YEAR RUNOFF	10-YEAR RUNOFF	100-YEAR RUNOFF	100-YEAR RUNOFF			
	Q ₁₀	Q ₁₀	Q ₁₀₀	Q ₁₀₀			
	(CFS)	(CFS)	(CFS)	(CFS)			
XA1	34	-	57	-			
XA2	23.3 ⁽¹⁾	-	23.3 ⁽¹⁾	-			
XA1 - XA2	-	57.3	-	80.3			
XA3	18	-	32	-			
XA1 - XA3	-	75.3	-	112.3			
(1) MAXIMUM DISCHARGE THROU	(1) MAXIMUM DISCHARGE THROUGH (E) 24-INCH CULVERT BASED ON MAX HEADWATER ELEVATION						



DEVELOPED CONDITIONS SHED MAP NATOMA SENIOR APARTMENTS CITY OF FOLSOM, CA



CHANNEL STORAGE CAPACITY					
ELEVATION	DEPTH	AVAILABLE STORAGE			
(FT)	(FT)	(FT ³)			
327	0	0			
328	1	920			
329	2	2,310			
330	3	4,845			
331	4	8,877			
332	5	14,735			
332.2 ⁽¹⁾	5.2	17,360			
333	6	27,858			
334	7	46,433			
335 ⁽²⁾ 8 71,300					
(1) 10-YEAR MAX HGL					
(2) 100-YEAR MAX HGL					









	CONTRIBUTING	CUMULATIVE	CONTRIBUTING	CUMULATIVE
SHED / MODEL DESIGN POINT	10-YEAR RUNOFF	10-YEAR RUNOFF	100-YEAR RUNOFF	100-YEAR RUNOFF
	Q ₁₀	Q ₁₀	Q ₁₀₀	Q ₁₀₀
	(CFS)	(CFS)	(CFS)	(CFS)
XA1	34	-	57	-
A3-1	4.6	-	7.8	-
XA1 - XA3-1	-	38.6	-	64.8
A3-2	2.1	-	3.7	-
XA1 - XA3-1	-	40.7	-	68.5
XA2	23.3 ⁽¹⁾	-	23.3 ⁽¹⁾	-
XA - A3-3	-	64	-	91.8
A3-4	0.6	-	1.1	-
A3-5	1.2	-	2.4	-
XA - A3-5	-	63.9 ⁽²⁾		87.16 ⁽²⁾
A3-6	4.2	-	7.3	-
A3-7	7.2	-	12	-
XA - A3-7		75.0		105.45
(E) 36" CULVERT @ BIKE TRAIL	-	/5.3	-	106.46
(1) MAXIMUM DISCHARGE THROU	IGH (E) 24-INCH CUL	/ERT BASED ON MAX	HEADWATER ELEVAT	ION

(2) MAXIMUM DISCHARGE THROUGH (P) 36-INCH CULVERT BASED ON MAX HEADWATER ELEVATION

NATOMA SENIOR APARTMENTS HYDROLOGY

APPENDIX B- HYDROLOGY

Existing and Developed SacCalc Report

10-year and 100-year 24-hour

View HEC-1 output

<u>Sacramento method results</u> (Project: Natoma Senior Living) (100-year, 1-day rainfall)						
ID	Peak flow (cfs)	Time of peak (hours)	Basin area (sq. mi)	Peak stage (feet)	Peak storage (ac-ft)	Diversion volume (ac-ft)
XA1	57.	12:05	.03			
XA2	204.	12:02	.09			
A3-1	7.8	12:05	.00			
A3-2	3.7	12:02	.00			
A3-4	1.1	12:02	.00			
A3-5	2.4	12:09	.00			
A3-6	7.3	12:02	.00			
A3-7	12.	12:05	.01			
XA3	32.	12:05	.02			

		(1	l0-year, 1-day r	ainfall)		
ID	Peak flow (cfs)	Time of peak (hours)	Basin area (sq. mi)	Peak stage (feet)	Peak storage (ac-ft)	Diversion volume (ac-ft)
XA1	34.	12:05	.03			
XA2	118.	12:02	.09			
A3-1	4.6	12:05	.00			
A3-2	2.1	12:02	.00			
A3-4	.6	12:02	.00			
A3-5	1.2	12:12	.00			
A3-6	4.2	12:02	.00			
A3-7	7.2	12:05	.01			
XA3	18.	12:05	.02			

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APPENDIX C - HYDRAULICS

Culvert Master Reports

Culvert Calculator Report (E) 24" E. Natomas Crossing

Solve For: Discharge

Culvert Summary					
Allowable HW Elevation	<mark>339.0</mark> 0	ft	Headwater Depth/Height	1.76	
Computed Headwater Eleva	339.00	ft	Discharge	<mark>23.32</mark>	<mark>cfs</mark>
Inlet Control HW Elev.	339.00	ft	Tailwater Elevation	335.19	ft
Outlet Control HW Elev.	338.75	ft	Control Type	Inlet Control	
Cradaa					
Upstream Invert	335.49	ft	Downstream Invert	333.19	ft
Length	100.00	ft	Constructed Slope	0.023000	ft/ft
Hydraulic Profile					
Profile Comp	ositeS1S2		Depth, Downstream	1.24	ft
Slope Type	Steep		Normal Depth	1.21	ft
Flow Regime	N/A		Critical Depth	1.72	ft
Velocity Downstream	11.43	ft/s	Critical Slope	0.009875	ft/ft
Section Shape	Circular		Mannings Coefficient	0.013	
Section Material	Concrete		Span	2.00	ft
Section Size	24 inch		Rise	2.00	ft
Number Sections	1				
Outlet Control Properties					
Outlet Control HW Elev	338 75	ft	Linstream Velocity Head	1 03	ft
Ke	0.50	n	Entrance Loss	0.51	ft
	0.00			0.01	it.
Inlet Control Properties					
Inlet Control HW Elev.	339.00	ft	Flow Control	Submerged	-
Inlet Type Square edge w	/headwall		Area Full	3.1	ft²
к	0.00980		HDS 5 Chart	1	
Μ	2.00000		HDS 5 Scale	1	
С	0.03980		Equation Form	1	
Y	0.67000				

Culvert Calculator Report (P) 36" Driveway Crossing 10-Year

Solve For: Headwater Elevation

Culvert Summary					
Allowable HW Elevation	335.00	ft	Headwater Depth/Height	1.73	
Computed Headwater Eleva	<mark>332.20</mark>	ft	Discharge	<mark>63.90</mark>	<mark>cfs</mark>
Inlet Control HW Elev.	332.20	ft	Tailwater Elevation	324.00	ft
Outlet Control HW Elev.	331.86	ft	Control Type	Inlet Control	
Grades					
Linstream Invert	327.00	ft	Downstream Invert	322.50	ft
Length	122.00	ft	Constructed Slope	0 040984	ft/ft
Longin	122.00	it.		0.040004	1011
Hydraulic Profile					
Profile	S2		Depth, Downstream	1.55	ft
Slope Type	Steep		Normal Depth	1.45	ft
Flow Regime S	upercritical		Critical Depth	2.57	ft
Velocity Downstream	17.33	ft/s	Critical Slope	0.008557	ft/ft
Section					
Section Shano	Circular		Mannings Coofficient	0.013	
Section Material	Concrete		Snan	3.00	ft
Section Size	36 inch		Rise	3.00	ft
Number Sections	1			0.00	it.
Outlet Control Properties					
Outlet Control HW Elev.	331.86	ft	Upstream Velocity Head	1.53	ft
Ke	0.50		Entrance Loss	0.76	ft
Inlet Control Properties					
Inlet Control HW Elev.	332.20	ft	Flow Control	Submerged	
Inlet Type Square edge	w/headwall		Area Full	7.1	ft²
K	0.00980		HDS 5 Chart	1	
M	2.00000		HDS 5 Scale	1	
C	0.03980		Equation Form	1	
Y	0.67000				

Culvert Calculator Report (P) 36" Driveway Crossing 100-Year

Solve For: Discharge

Culvert Summary					
Allowable HW Elevation	335.00	ft	Headwater Depth/Height	2.67	
Computed Headwater Eleva	335.00	ft	Discharge	<mark>87.16</mark>	<mark>cfs</mark>
Inlet Control HW Elev.	335.00	ft	Tailwater Elevation	324.00	ft
Outlet Control HW Elev.	333.54	ft	Control Type	Inlet Control	
Grades					
Linstream Invert	327.00	ft	Downstream Invert	322 50	ft
Length	122.00	ft	Constructed Slope	0.040984	ft/ft
3					
Hydraulic Profile					
Profile	S2		Depth, Downstream	1.89	ft
Slope Type	Steep		Normal Depth	1.75	ft
Flow Regime Su	percritical		Critical Depth	2.83	ft
Velocity Downstream	18.53	ft/s	Critical Slope	0.014764	ft/ft
Section					
Section Shape	Circular		Mannings Coefficient	0.013	
Section Material	Concrete		Span	3.00	ft
Section Size	36 inch		Rise	3.00	π
Number Sections					
Outlet Control Properties					
Outlet Control HW Elev.	333.54	ft	Upstream Velocity Head	2.48	ft
Ke	0.50			4.04	4
	0.50		Entrance Loss	1.24	п
	0.50		Entrance Loss	1.24	п
	0.50			1.24	n
Inlet Control Properties	0.50		Entrance Loss	1.24	
Inlet Control Properties Inlet Control HW Elev.	335.00	ft	Flow Control	Submerged	
Inlet Control Properties Inlet Control HW Elev. Inlet Type Square edge w	335.00 /headwall	ft	Flow Control Area Full	Submerged 7.1	ft²
Inlet Control Properties Inlet Control HW Elev. Inlet Type Square edge w K	0.50 335.00 /headwall 0.00980	ft	Flow Control Area Full HDS 5 Chart	Submerged 7.1	ft²
Inlet Control Properties Inlet Control HW Elev. Inlet Type Square edge w K M	335.00 /headwall 0.00980 2.00000	ft	Flow Control Area Full HDS 5 Chart HDS 5 Scale	5.24 Submerged 7.1 1	ft²
Inlet Control Properties Inlet Control HW Elev. Inlet Type Square edge w K M	335.00 /headwall 0.00980 2.00000	ft	Flow Control Area Full HDS 5 Chart HDS 5 Scale	1.24 Submerged 7.1 1 1	ft²

APPENDIX D - STORM WATER QUALITY

Drainage Management Area Map

LID Worksheets

DRAINAGE MANAGEMENT AREA MAP APARTMENTS





Name of Drainage Shed: A1]	Fill in Blue Highlighted boxes	
Location of project: Folsom			_		
Step 1 - Open Space and Pervious Area Credi	ts				
Is your project within the drainage area of a common drainage plan	that includes open space	? If not, skip to 1 b.			
1 a. Common Drainage Plan Area			0 acres	A _{CDP}	
Common Drainage Plan Open Space (Off-project)			0 acres	A _{os}	see area example
a. Natural storage reservoirs and drainage corridors			0 acres		below
b. Buffer zones for natural water bodies			0 acres		bolon
c. Natural areas including existing trees, other vegetation	, and soil		0 acres		
d. Common landscape area/park			0 acres		
e. Regional Flood Control/Drainage basins			0 acres		
1 b. Project Drainage Shed Area (Total)			0.40 acres	А	
Project-Specific Open Space (In-project, communal**)		0.05 acres	A _{PSOS}	
a. Natural storage reservoirs and drainage corridors			0.00 acres		
b. Buffer zones for natural water bodies			0.00 acres		soo aroa oyampia
c. Natural areas including existing trees, other vegetation	, and soil		0.00 acres		see area example
d. Landscape area/park			0.05 acres		below
e. Flood Control/Drainage basins			0.00 acres		
** Doesn't include impervious areas within individual lots a	and surrounding indiv	vidual units. That is ac	counted for below usin	ng Form D-1a in Step 2.	
Area with Runoff Reduction Potential	A - A _{PSOS} =		0.35 acres	At	
	1000			·	
Assumed Initial Impervious Fraction	A _T / A =		0.88	1	
Open Space & Pervious Area LID Credit (Step 1)					
(A _{OS} /A	_{CDP} +A _{PSOS} /A)x100 =		13 pts		





Step 2 - Runoff Reduction Credits						
Runoff Reduction Treatments	Impervious Area Managed		E	fficiency Factor	Effective Area Managed (A _C)	
Porous Pavement:	-					
Option 1: Porous Pavement (see Fact Sheet, excludes porous pavement used in Option 2)	0	acres	x	=	0.000	acres
Option 2: Disconnected Pavement use Fo (see Fact Sheet, excludes porous pavement used in Option 1)	orm D-2a for credits				0.00	acres
Landscaping used to Disconnect Pavement (see Fact Sheet)	0.0000	acres		=	0.00	acres
Disconnected Roof Drains (see Fact Sheet and/or Table D-2b for summary of requirements)	0	acres		=	0.00	acres
Ecoroof (see Fact Sheet)	0	acres		=	0.00	acres
Interceptor Trees use Form D-2b for credits (see Fact Sheet)				→	0.00	acres
Total Effective Area Managed by Runoff Reduction Measu	ires			Ac	0.00	acres
Runoff Reduction Credit (Step 2)				(A _C / A _T)*100	= 0	pts

Table D-2a			Tabl	e D-2b	
	Efficiency			Minimu	m travel
Porous Pavement Type Cobblestone Block Pavement	Multiplier 0.40		Maximum roof size ≤ 3,500 sq ft	dista	ance 21 ft
Pervious Concrete/Asphalt	0.60		≤ 5,000 sq ft		24 ft
Reinforced Grass Pavement	1.00		≤ 10,000 sq ft		32 ft
See Fact Sheet for more information regarding Dis	connected Pavement	credit quidelines			
				_	Effective Area Managed (A $_{\rm C})$
Pavement Draining to Porous Pavement					
2. Enter area draining onto Porous Pavement			0.00	acres	Box K1
3. Enter area of Receiving Porous Pavement			0.00	acres	Box K2
(excludes area entered in Step 2 under Porou 4 Ratio of Areas (Box K1 / Box K2)	s Pavement)		0.00		Box K3
			0.00		DOXING
 Select multiplier using ratio from Box K3 an Ratio (Box D) 	d enter into Box K4	Multiplier			
Ratio is ≤ 0.5 Ratio is ≥ 0.5 and ≤ 1.0		1.00			Box K4
Ratio is > 1.0 and < 1.5		0.71	1		DOATT
Ratio is > 1.5 and < 2.0		0.55			
6. Enter Efficiency of Porous Pavement (see	table below)				Box K5
	Efficiency				
Cobblestone Block Pavement	0.40				
Pervious Concrete	0.60				
Modular Block Pavement	0.75				
Reinforced Grass Pavement	1.00				
7. Multiply Box K2 by Box K5 and enter into B	ox K6		0.00	acres	Box K6
8. Multiply Boxes K1,K4, and K5 and enter the	e result in Box K7		0.00	acres	Box K7
9 Add Box K6 to Box K7 and multiply by 60%	and enter the Res	Ilt in Box K8			0.00 acres
This is the amount of area credit to enter into the	he "Disconnected P	avement" Box of Form D-2			
Form D-2b: Interceptor Tree Worksh	eet				
See Fact Sheet for more information regarding Inte	erceptor Tree credit gu	idelines			
New Evergreen Trees					
1. Enter number of new evergreen trees that	qualify as Intercepto	Trees in Box L1.	trees	Box L1	
2. Multiply Box L1 by 200 and enter result in	Box L2		0 sq. ft.	Box L2	
New Deciduous Trees 3. Enter number of new deciduous trees that	qualify as Intercepto	r Trees in Box L3.	2 trees	Box L3	
4. Multiply Box L3 by 100 and enter result in I	Box L4		200 sq. ft.	Box L4	
Existing Tree Canopy					
5. Enter square footage of existing tree canop	y that qualifies as E	xisting Tree canopy in Box L5.	0 sq. ft.	Box L5	
6. Multiply Box L5 by 0.5 and enter the result	in Box L6		0 sq. ft.	Box L6	
Total Interceptor Tree EAM Credits					
Add Boxes I 2 I 4 and I 6 and enter it into Bo	x 7		200 sq.ft	Box I 7	
Divide Dev I 7 by 40 500 and enter it into D0.	to got off			DUXLI	
This is the amount of area credit to enter into t	to get effective area he "Interceptor Tree	managed and enter result in Box L8 s" Box of Form D-2	0.00 acres	Box L8	

(see Fact Sheet)		- enter gallons	s, for simple rain barrels			0.00	acres
Automated-Control Capture and Us	e System						
(see Fact Sheet, then enter impervious are	ea managed by the system	n)				0.00	acres
Bioretention/Infiltration Credits Impervious Area Managed by Bioret (see Fact Sheet)	tention BMPs	Bioretention Area	995 sq ft 8 inches				
		Ponding Depth, inches	12 inches			0.34	acres
Impervious Area Managed by Infiltra	ation BMPs						
(see Fact Sheet)		Drawdown Time, hrs Soil Infiltration Rate, in/hr	drawdown_hrs_ soil_inf_rate	inf			
S	Sizing Option 1:	Capture Volume, acre-ft	0.00 capture_vol_inf			0.00	acres
S	Sizing Option 2: Infiltr	ration BMP surface area, sq ft	0 soil_surface_are	a		0.00	acres
	Basin or trench?	·	approximate BMP depth	0.00 ft			
Impervious Area Managed by Amen	nded Soil or Mulch B	Beds Mulched Infiltration Area, so ft	mulch area		_	0.00	acres
			multi_area			0.00	0000
						0.34	Auro
Total Effective Area Managed by Capt	ture-and-Use/Biorete	ention/Infiltration BMPs				0.01	LIDC
Total Effective Area Managed by Capt Runoff Management Credit (Step 3)	ture-and-Use/Biorete	ention/Infiltration BMPs		A _{LIDC} /J	A _T *200 =	194.7	pts
Total Effective Area Managed by Capt Runoff Management Credit (Step 3)	ture-and-Use/Biorete	D compliant also			A _T *200 =	194.7	pts
Total Effective Area Managed by Capt Runoff Management Credit (Step 3) Total LID Credits (Step 1- Does project require hydromodificatio	ture-and-Use/Biorete +2+3) L on management? If 1	ID compliant, che	eck for treatment s	م _{الالع} ران Sizing in S	A _T *200 =	194.7 207.4	pts
Total Effective Area Managed by Capt Runoff Management Credit (Step 3) Total LID Credits (Step 1- Does project require hydromodification	ture-and-Use/Biorete +2+3) Do management? If y	ntion/Infiltration BMPs _ID compliant, che yes, proceed to using Sac	eck for treatment s	A _{داله} ران sizing in S	4 _τ *200 =	194.7 207.4	pts
Total Effective Area Managed by Capt Runoff Management Credit (Step 3) Total LID Credits (Step 1- Does project require hydromodificatio Adjusted Area for Flow-Based, Non-LI	ture-and-Use/Biorete +2+3) L on management? If ;	ntion/Infiltration BMPs _ID compliant, che yes, proceed to using Sad	<mark>еск for treatment s</mark> снм. Ат - А	A_{LIDC}/r sizing in S	A _T *200 = Step 4 0.01	194.7 207.4	pts
Total Effective Area Managed by Capt Runoff Management Credit (Step 3) Total LID Credits (Step 1- Does project require hydromodificatio Adjusted Area for Flow-Based, Non-LI Adjusted Impervious Fraction of A for	ture-and-Use/Biorete +2+3) L on management? If y ID Treatment r Volume-Based, Nor	ntion/Infiltration BMPs _ID compliant, che yes, proceed to using Sau n-LID Treatment	eck for treatment s снм. Ат-А	A_{LIDO}/A sizing in S $c - A_{LIDC} =$	A ₁ *200 = Step 4 0.01 0.02	<u>194.7</u> 207.4	pts
Total Effective Area Managed by Capt Runoff Management Credit (Step 3) Total LID Credits (Step 1- Does project require hydromodificatio Adjusted Area for Flow-Based, Non-Li Adjusted Impervious Fraction of A for STOP: No additional treat	ture-and-Use/Biorete +2+3) L on management? If ID Treatment r Volume-Based, Nor tment needec	ID compliant, che yes, proceed to using Sar n-LID Treatment	eck for treatment s снм. Ат - А	A_{LIDO}/r sizing in S $c - A_{LIDC} =$	A _T *200 = Step 4 0.01 0.02	207.4	pts
Total Effective Area Managed by Capt Runoff Management Credit (Step 3) Total LID Credits (Step 1- Does project require hydromodificatio Adjusted Area for Flow-Based, Non-Li Adjusted Impervious Fraction of A for STOP: No additional treat Treatment - Flow-Based (Ration	ture-and-Use/Biorete +2+3) L on management? If ; ID Treatment r Volume-Based, Nor tment needec nal Method)	ID compliant, che yes, proceed to using Sar n-LID Treatment	eck for treatment s снм. Ат - А	$A_{LIDO}/A_{LIDO}/A_{LIDO}$	A ₁ *200 = Step 4 0.01 0.02	194.7 207.4	рts
Total Effective Area Managed by Capt Runoff Management Credit (Step 3) Total LID Credits (Step 1- Does project require hydromodification Adjusted Area for Flow-Based, Non-LI Adjusted Impervious Fraction of A for STOP: No additional treat Treatment - Flow-Based (Ration b treatment flow (cfs):	ture-and-Use/Biorete +2+3) L on management? If ID Treatment r Volume-Based, Nor ttment needeo hal Method) Flow =	ID compliant, che yes, proceed to using Sac n-LID Treatment	cck for treatment s cHM. Α _τ - Α _τ	A_{LIDC}/r sizing in S $c - A_{LIDC} =$	Δ ₁ *200 = itep 4 0.01 0.02	207.4	pts
Total Effective Area Managed by Capt Runoff Management Credit (Step 3) Total LID Credits (Step 1- Does project require hydromodification Adjusted Area for Flow-Based, Non-Li Adjusted Impervious Fraction of A for STOP: No additional treat Treatment - Flow-Based (Ration treatment flow (cfs): value for i in Table D-2c (Rainfall Intensity	ture-and-Use/Biorete +2+3) L on management? If ; ID Treatment r Volume-Based, Nor tment needec hal Method) Flow =	ID compliant, che yes, proceed to using Sac n-LID Treatment = Runoff Coefficient x Rainf 0.20]i	eck for treatment s cHM. Α _τ - Α, /	A_{LIDC}/A_{LIDC}	4, *200 = itep 4 0.01 0.02 1 1 1 1 1 1 1 1 1 1 1 1 1	able D-2c Rainfall	pts A _{AT} I _A Intensity
Total Effective Area Managed by Capt Runoff Management Credit (Step 3) Total LID Credits (Step 1- Does project require hydromodification Adjusted Area for Flow-Based, Non-LI Adjusted Impervious Fraction of A for STOP: No additional treat Treatment - Flow-Based (Ration treatment flow (cfs): value for i in Table D-2c (Rainfall Intensity art from Step 3	ture-and-Use/Biorete +2+3) L on management? If y ID Treatment r Volume-Based, Nor tment needed hal Method) Flow = y)	ID compliant, che yes, proceed to using Sar n-LID Treatment = Runoff Coefficient x Rainf 0.20]i 0.011Aar	cck for treatment s cHM. Α _T - Α _i	A_{LIDC}/r sizing in S $c -A_{LIDC} =$	Δ ₁ *200 = (itep 4 0.01 0.02 T Ro Sa	able D-2c Rainfall reseville i i cramento i	pts A _{AT} I _A Intensity = 0.20 in/hr = 0.18 in/hr
Total Effective Area Managed by Capt Runoff Management Credit (Step 3) Total LID Credits (Step 1- Does project require hydromodificatio Adjusted Area for Flow-Based, Non-LI Adjusted Impervious Fraction of A for STOP: No additional treat a Treatment - Flow-Based (Ration a treatment flow (cfs): value for i in Table D-2c (Rainfall Intensity ar from Step 3	ture-and-Use/Biorete +2+3) L on management? If g ID Treatment r Volume-Based, Nor tment needec nal Method) Flow = y)	ID compliant, che yes, proceed to using Sac n-LID Treatment = Runoff Coefficient x Rainf 0.20 i 0.01 A _{AT}	eck for treatment s cHM. A _T - Α	A_{LIDC}/A_{LIDC} sizing in S	4, *200 = itep 4 0.01 0.02 T Ro Sa Fo	Table D-2c Rainfall pseville i i cramento i i lsom i i	Intensity 0.20 in/hr 0.20 in/hr 0.20 in/hr
Total Effective Area Managed by Capt Runoff Management Credit (Step 3) Total LID Credits (Step 1- Does project require hydromodification Adjusted Area for Flow-Based, Non-Li Adjusted Impervious Fraction of A for STOP: No additional treat a Treatment - Flow-Based (Ration a treatment flow (cfs): value for i in Table D-2c (Rainfall Intensity Art from Step 3 0.95	+2+3) L on management? If y ID Treatment If y r Volume-Based, Nor Itment needed nal Method) Flow = y)	ID compliant, che yes, proceed to using Sac n-LID Treatment = Runoff Coefficient x Rainf 0.20 i 0.01 A _{AT} 0.95 c	eck for treatment s cHM. A _τ - Α, /	A_{LDO}/A_{LDO}	A ₁ +200 = Step 4 0.01 0.02	194.7 207.4 Rainfall rseville i scramento i Isom i	Intensity IA IA IA
Total Effective Area Managed by Capt Runoff Management Credit (Step 3) Total LID Credits (Step 1- Does project require hydromodification Adjusted Area for Flow-Based, Non-Li Adjusted Impervious Fraction of A for STOP: No additional treas to Treatment - Flow-Based (Ration treatment flow (cfs): value for i in Table D-2c (Rainfall Intensity ar from Step 3 0.95 Flow = 0.95 * i * A _{AT}	+2+3) L on management? If y ID Treatment If y r Volume-Based, Nor If y tment needed If y nal Method) Flow = y)	ID compliant, che yes, proceed to using Sad n-LID Treatment = Runoff Coefficient x Rainf 0.20 i 0.01 A _{AT} 0.95 c 0.00 cfs	eck for treatment s cHM. A _T - Α, fall Intensity x Area	A _{LIDO} / sizing in S A _{LIDC} = A _{AT} / A =	4, *200 = itep 4 0.01 0.02 T Ro Sa Fo	194.7 207.4 Seville i: seville i: Isom	Image: pts Image: Aat Image: Intensity Image: Image
Total Effective Area Managed by Capt Runoff Management Credit (Step 3) Total LID Credits (Step 1- Does project require hydromodification Adjusted Area for Flow-Based, Non-LI Adjusted Impervious Fraction of A for STOP: No additional treat Treatment - Flow-Based (Ration treatment flow (cfs): value for i in Table D-2c (Rainfall Intensity ar from Step 3 0.95 Flow = 0.95 * i * A _{AT}	+2+3) L on management? If y ID Treatment If y r Volume-Based, Nor If y tment needed If y nal Method) Flow = y)	ID compliant, che yes, proceed to using Sau n-LID Treatment = Runoff Coefficient x Rainf 0.20 i 0.01 A _{AT} 0.95 c 0.00 cfs	tall Intensity x Area	A_{LIDC}/A_{LIDC} sizing in S	A ₁ *200 = itep 4 0.01 0.02 T Ro Sa Fo	Table D-2c Rainfall reseville i : cramento i :	pts A _{AT} I _A IA IA II II III IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII

Obtain P_0 : Maximized Detention Volume from figures E-1 to E-4 in Appendix E of this manual using I_A from Step 2.	0.06	P ₀	
Calculate treatment volume (acre-ft): Treatment volume = A x (P ₀ / 12)	0.00	Acre-Feet	

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Appendix D-2: Commercial Sites: Low Impact	Development (I	ID) Credits and Treat	ment BMP Siz	ing Calculations	
Name of Drainage Shed: A2				Fill in Blue Highlighted boxes	
Location of project: Folsom					
Step 1 - Open Space and Pervious Area Credit	S				
Is your project within the drainage area of a common drainage plan th	nat includes open space	e? If not, skip to 1 b.			
1 a. Common Drainage Plan Area			0 acres	A _{CDP}	
Common Drainage Plan Open Space (Off-project)			0 acres	A _{os}	see area example
a. Natural storage reservoirs and drainage corridors			0 acres		below
b. Buffer zones for natural water bodies			0 acres		below
c. Natural areas including existing trees, other vegetation,	and soil		0 acres		
d. Common landscape area/park			0 acres		
e. Regional Flood Control/Drainage basins			0 acres		
1 b. Project Drainage Shed Area (Total)			0.45 acres	А	
Project-Specific Open Space (In-project, communal**)			0.06 acres	A _{PSOS}	
a. Natural storage reservoirs and drainage corridors			0.00 acres		
b. Buffer zones for natural water bodies			0.00 acres		soo araa ayamnla
c. Natural areas including existing trees, other vegetation,	and soil		0.00 acres		See alea example
d. Landscape area/park			0.06 acres		below
e. Flood Control/Drainage basins			0.00 acres		
** Doesn't include impervious areas within individual lots an	nd surrounding indi	vidual units. That is accourt	nted for below usir	ng Form D-1a in Step 2.	
Area with Runoff Reduction Potential	A - A _{PSOS} =		0.39 acres	AT	
			_ _		
Assumed Initial Impervious Fraction	A _T / A =		0.87	1	
Open Space & Pervious Area LID Credit (Step 1)					
(A _{os} /A _c	CDP+APSOS/A)x100 =		13 pts		





Step 2 - Runoff Reduction Credits						
Runoff Reduction Treatments	Impervious Area Managed		Efficiency Factor	ý	Effective Area Managed (A _C)	
Porous Pavement:	Ū					
Option 1: Porous Pavement (see Fact Sheet, excludes porous pavement used in Option 2)	0	acres	x	=	0.000	acres
Option 2: Disconnected Pavement use Fo (see Fact Sheet, excludes porous pavement used in Option 1)	rm D-2a for credits			•	0.00	acres
Landscaping used to Disconnect Pavement (see Fact Sheet)	0.0000	acres		=	0.00	acres
Disconnected Roof Drains (see Fact Sheet and/or Table D-2b for summary of requirements)	0.23	acres		=	0.23	acres
Ecoroof (see Fact Sheet)	0	acres		=	0.00	acres
Interceptor Trees use Form D-2b for credits (see Fact Sheet)				•	0.00	acres
Total Effective Area Managed by Runoff Reduction Measu	res		A _C		0.23	acres
Runoff Reduction Credit (Step 2)			(4	A _C / A _T)*100 =	59	pts

	Table D-2a				Table I	D-2b	
Porous Cobblesto Pervious C Modular B Reinforced	Pavement Type one Block Pavement oncrete/Asphalt ock Pavement & Grass Pavement	Efficiency Multiplier 0.40 0.60 0.75 1.00		Maximum roof ≤ 3,500 sq f ≤ 5,000 sq f ≤ 7,500 sq f ≤ 10,000 sq	size t t t	Minimu dista	m travel ince 21 ft 24 ft 28 ft 32 ft
Form D-2a: Disco	onnected Pavement V	Norksheet					
See Fact Sheet for more	information regarding Disc	onnected Pavemen	credit guidelines	_	-	-	Effective Area Managed (A _c)
Pavement Draining to	o Porous Pavement			0.00			5 14
2. Enter area draining	onto Porous Pavement			0.00		acres	Box K1
 Enter area of Rece (excludes area entered Ratio of Areas (Bo 	iving Porous Pavement d in Step 2 under Porous ox K1 / Box K2)	Pavement)		0.00		acres	Box K2 Box K3
5. Select multiplier usin Ratio (Box D	ng ratio from Box K3 and	enter into Box K4	Multiplier				
Ratio is < 0.5 Ratio is > 0.5 Ratio is > 1.6 Ratio is > 1.6	5 5 and < 1.0 0 and < 1.5 5 and < 2.0		1.00 0.83 0.71 0.55	1			Box K4
6. Enter Efficiency of	Porous Pavement (see ta	able below)					Box K5
Porous Cobblestor	Pavement Type Block Pavement	Efficiency Multiplier 0.40					
Pervious C Asphalt Pa	oncrete vement	0.60					
Modular Blo Porous Gra	ock Pavement	0.75					
7. Multiply Box K2 by	Grass Pavement Box K5 and enter into Bo	1.00 x K6		0.00		acres	Box K6
8. Multiply Boxes K1,	<4, and K5 and enter the	result in Box K7		0.00		acres	Box K7
9. Add Box K6 to Box This is the amount of a	K7 and multiply by 60%, area credit to enter into th	and enter the Res e "Disconnected F	ult in Box K8 'avement" Box of Form D-2				0.00 acres
Form D-2b: Interc	eptor Tree Workshe	et					
See Fact Sheet for more	information regarding Inter	ceptor Tree credit g	uidelines				
New Evergreen Trees 1. Enter number of ne	s w evergreen trees that qu	ualify as Intercept	r Trees in Box L1.		trees	Box L1	
2. Multiply Box L1 by	200 and enter result in B	ox L2		0	sq. ft.	Box L2	
New Deciduous Tree 3. Enter number of ne	s w deciduous trees that qu	ualify as Intercept	or Trees in Box L3.	1	trees	Box L3	
4. Multiply Box L3 by	100 and enter result in Bo	ox L4		100	sq. ft.	Box L4	
Existing Tree Canop	y						
5. Enter square foota	ge of existing tree canopy	that qualifies as I	existing Tree canopy in Box L5.	0	sq. ft.	Box L5	
6. Multiply Box L5 by	0.5 and enter the result in	Box L6		0	sq. ft.	Box L6	
Total Interceptor Tre	e EAM Credits						
Add Boxes L2, L4, and	L6 and enter it into Box	L7		100	sq. ft.	Box L7	
Divide Box L7 by 43,50 This is the amount of a	60 and multiply by 20% to area credit to enter into th	get effective area e "Interceptor Tre	managed and enter result in Box L8 es" Box of Form D-2	0.00	acres	Box L8	

Canture and Use Credits		and automatically amotical	systems			
Impervious Area Managed by Ra	ain harrels (listerns :	ann amnomancanv-ennmen 9				
(see Fact Sheet)		- enter gallons	s, for simple rain barrels		0.00	acres
Automated-Control Capture and	I Use System				<u>.</u>	
(see Fact Sheet, then enter impervious	s area managed by the syst	em)			0.00	acres
Bioretention/Infiltration Credi	its					
Impervious Area Managed by Bi	ioretention BMPs	Bioretention Area	440 sq ft			
(see Fact Sheet)		Ponding Depth, inches	12 inches		0.15	acres
					<u>_</u>	
Impervious Area Managed by Int	filtration BMPs	Draudaum Tima, bra	draudaum hra inf			
		Soil Infiltration Rate, in/hr	soil_inf_rate			
	Sizing Option 1:	Capture Volume, acre-ft	0.00 capture_vol_inf		0.00	acres
	Sizing Option 2: In	filtration BMP surface area, sq ft	0 soil_surface_area		0.00	acres
	Basin or trencl	h?	approximate BMP depth 0.	00 ft		
Impervious Area Managed by Ar	mended Soil or Mulch	Beds			0.00	
(see Fact Sheet)		Mulched Infiltration Area, sq ft	mulch_area		0.00	acres
Total Effective Area Managed by C	apture-and-Use/Biore	tention/Infiltration BMPs			0.15	Auno
		Control with the date of the barries			0.10	2.00
Dunoff Management Credit (Step 2				A /A *200 -	77.0	
Runoff Management Credit (Step 3	3)		ock for treatment sizin	A_{LIDC}/A_{T} *200 =	77.3	pts
Runoff Management Credit (Step 3 Total LID Credits (Step Does project require hydromodific	3) 1+2+3) cation management?	LID compliant, che If yes, proceed to using Sad	eck for treatment sizin снм.	A _{LIDO} /A _T *200 = g in Step 4	77.3	pts
Runoff Management Credit (Step 3 Total LID Credits (Step Does project require hydromodific Adjusted Area for Flow-Based, No	3) ation management? n-LID Treatment	LID compliant, che If yes, proceed to using Sac	eck for treatment sizin снм. А _т - А _с -А _{LID}	A _{LIDO} /A _T *200 = g in Step 4 c =0.01	77.3 149.7	pts
Runoff Management Credit (Step 3 Total LID Credits (Step Does project require hydromodific Adjusted Area for Flow-Based, Nor Adjusted Impervious Fraction of A	3) 1+2+3) ation management? n-LID Treatment for Volume-Based, N	LID compliant, che If yes, proceed to using Sac	<mark>eck for treatment sizin</mark> снм. А _т - А _с -А _{LD} _{А_{AT} / А}	A _{LIDO} /A _T *200 = g in Step 4 c =0.01 A =0.02	77.3 149.7	pts
Runoff Management Credit (Step 3 Total LID Credits (Step Does project require hydromodific Adjusted Area for Flow-Based, Nor Adjusted Impervious Fraction of A STOP: No additional tre	3) ation management? n-LID Treatment tor Volume-Based, N eatment neede	LID compliant, che If yes, proceed to using Sac Ion-LID Treatment	<mark>еск for treatment sizin</mark> снм. А _т - А _с -А _{LID} А _{АТ} / А	A _{LIDC} /A _T *200 = g in Step 4 c =0.01 x =0.02	149.7	pts
Runoff Management Credit (Step 3 Total LID Credits (Step Does project require hydromodific Adjusted Area for Flow-Based, Nor Adjusted Impervious Fraction of A STOP: No additional treatment - Flow-Based (Bat	ation management? n-LID Treatment for Volume-Based, N eatment neede	LID compliant, che If yes, proceed to using Sac Ion-LID Treatment	<mark>еск for treatment sizin снм.</mark> А _т - А _с - А _{LID} А _{АТ} / А	A _{LIDC} /A _T *200 = g in Step 4 c =0.01	149.7	pts
Runoff Management Credit (Step 3 Total LID Credits (Step Does project require hydromodific Adjusted Area for Flow-Based, Nor Adjusted Impervious Fraction of A STOP: No additional true Treatment - Flow-Based (Rate b treatment flow (rfs):	ation management? n-LID Treatment for Volume-Based, N eatment neede tional Method)	LID compliant, che If yes, proceed to using Sar Ion-LID Treatment	eck for treatment sizin снм. A _T - A _C -A _{LD} A _{AT} / A	A _{LIDC} /A ₇ *200 = g in Step 4 c =0.01	149.7	pts
Runoff Management Credit (Step 3 Total LID Credits (Step Does project require hydromodific Adjusted Area for Flow-Based, Nor Adjusted Impervious Fraction of A STOP: No additional true Treatment - Flow-Based (Rate treatment flow (cfs):	3) 5) 1+2+3) 5) for Volume-Based, N 6) Vo	LID compliant, che If yes, proceed to using Sac Ion-LID Treatment	eck for treatment sizin снм. А _т - А _с -A _{LD} А _{AT} / А	A _{LIDC} /A _T *200 = g in Step 4 c = 0.01	 77.3 149.7	pts
Runoff Management Credit (Step 3 Total LID Credits (Step Does project require hydromodific Adjusted Area for Flow-Based, Nor Adjusted Impervious Fraction of A STOP: No additional true a Treatment - Flow-Based (Rate treatment flow (cfs): value for i in Table D-2c (Rainfall Inter	a) a) ation management? n-LID Treatment a for Volume-Based, N eatment needed tional Method) Flow nsity)	LID compliant, che If yes, proceed to using Sad Ion-LID Treatment ed w = Runoff Coefficient x Rainf	eck for treatment sizin снм. A _T - A _C -A _{LID} A _{AT} / A	A _{LIDC} /A _T *200 = g in Step 4 c =0.01 \lambda =0.02	Table D-2c Rainfall	pts A _{AT} I _A Intensity D 20 is/br
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Runoff Management Credit (Step 3 Total LID Credits (Step Does project require hydromodific Adjusted Area for Flow-Based, Nor Adjusted Impervious Fraction of A STOP: No additional true a Treatment - Flow-Based (Rate treatment flow (cfs): value for i in Table D-2c (Rainfall Inter Art from Step 3	ation management? n-LID Treatment for Volume-Based, N eatment neede tional Method)	LID compliant, che If yes, proceed to using Sac Ion-LID Treatment ed v = Runoff Coefficient x Rainf 0.20]i 0.01]A _{AT}	eck for treatment sizin cHM. A _T - A _C - A _{LD} A _{AT} / A	A _{LIDC} /A _T *200 = g in Step 4 c = (=	Table D-2c Rainfall Roseville i Sacramento i Folsom i	pts A _{AT} I _A IA INTERSITY IOUTION INTERSITY IOUTION INTERSITY
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Runoff Management Credit (Step 3 Total LID Credits (Step Does project require hydromodific Adjusted Area for Flow-Based, Nor Adjusted Impervious Fraction of A STOP: No additional true a Treatment - Flow-Based (Rate a treatment flow (cfs): value for i in Table D-2c (Rainfall Inter ar from Step 3 0.95 Flow = 0.95 * i * A _{AT}	ation management? n-LID Treatment nor Volume-Based, N eatment needed tional Method) Flow	LID compliant, che If yes, proceed to using Sar Ion-LID Treatment ed w = Runoff Coefficient x Rainf 0.20 i 0.01 A _{AT} 0.95 c 0.00 cfs	eck for treatment sizin cHM. A _T - A _C -A _{LD} A _{AT} / A	A _{LIDC} /A _T *200 = g in Step 4 c = 0.01	Table D-2c Rainfall Roseville i : Sacramento i : Folsom i :	pts Image: A_AT I_A I_A Image: Intensity Image: Image
Runoff Management Credit (Step 3 Total LID Credits (Step Does project require hydromodific Adjusted Area for Flow-Based, Nor Adjusted Impervious Fraction of A STOP: No additional true a Treatment - Flow-Based (Rate treatment flow (cfs): value for i in Table D-2c (Rainfall Inter ar from Step 3 0.95 Flow = 0.95 * i * A _{AT}	a) ation management? n-LID Treatment for Volume-Based, N eatment needed tional Method) Flow nsity)	LID compliant, che If yes, proceed to using Sac Ion-LID Treatment ed w = Runoff Coefficient x Rainf 0.20]i 0.01]A _{AT} 0.95]C 0.00]cfs	eck for treatment sizin cHM. A _T - A _C -A _{LD} A _{AT} / A	A _{LIDC} /A _T *200 = g in Step 4 c = 0.01 . = 0.02	Table D-2c Rainfall Roseville i Sacramento i Folsom i	Intensity 0.20 in/hr 0.18 in/hr 0.20 in/hr
Runoff Management Credit (Step 3 Total LID Credits (Step Does project require hydromodific Adjusted Area for Flow-Based, Nor Adjusted Impervious Fraction of A STOP: No additional tre a Treatment - Flow-Based (Rate a treatment flow (cfs): value for i in Table D-2c (Rainfall Inter a from Step 3 0.95 Flow = 0.95 * i * A _{AT}	ation management? n-LID Treatment for Volume-Based, N eatment neede tional Method) Flow nsity)	LID compliant, che If yes, proceed to using Sac Ion-LID Treatment ed w = Runoff Coefficient x Rainf 0.20 i 0.01 A _{xT} 0.95 c 0.00 cfs	ack for treatment sizin cHM. A _T - A _C -A _{LD} A _{AT} / A	A _{LIDC} /A _T *200 = g in Step 4 c =	Table D-2c Rainfall Roseville i : Sacramento i : Folsom i :	pts A _{AT} I _A I _A Intensity 0.20 in/hr 0.18 in/hr 0.20 in/hr
Runoff Management Credit (Step 3 Total LID Credits (Step Does project require hydromodific Adjusted Area for Flow-Based, Nor Adjusted Impervious Fraction of A STOP: No additional true a Treatment - Flow-Based (Rate a treatment flow (cfs): value for i in Table D-2c (Rainfall Inter ar from Step 3 0.95 Flow = 0.95 * i * A _{AT}	ation management? n-LID Treatment for Volume-Based, N eatment neede tional Method) nsity)	LID compliant, che If yes, proceed to using Sar Ion-LID Treatment ed w = Runoff Coefficient x Rainf 0.20 i 0.01 A _{AT} 0.95 c 0.00 cfs	eck for treatment sizin cHM. A _T - A _C -A _{LD} A _{AT} / A	A _{LIDC} /A _T *200 = g in Step 4 c = 0.01	Table D-2c Rainfall Roseville i : Sacramento i : Folsom i :	pts A _{AT} I _A IA Intensity = 0.20 in/hr 0.18 in/hr = 0.20 in/hr
Runoff Management Credit (Step 3 Total LID Credits (Step Does project require hydromodific Adjusted Area for Flow-Based, Nor Adjusted Impervious Fraction of A STOP: No additional tru treatment - Flow-Based (Rate treatment flow (cfs): value for i in Table D-2c (Rainfall Inter Ar from Step 3 0.95 Flow = 0.95 * i * A _{AT} D Treatment - Volume-Based (Rate water quality volume (Acre-Feet):	a) ation management? n-LID Treatment for Volume-Based, N eatment needed tional Method) Flow nsity)	LID compliant, che If yes, proceed to using Sar Ion-LID Treatment ad w = Runoff Coefficient x Rainf 0.20 i 0.01 A _{AT} 0.95 c 0.00 cfs V = Area x Maximized Detent	tion Volume (P ₀)	A _{LIDC} /A _T *200 = g in Step 4 c = 0.01	Table D-2c Rainfall Roseville i = Sacramento i = Folsom i =	Image: pts Image: A_AT I_A I_A

Obtain P_0 : Maximized Detention Volume from figures E-1 to E-4 in Appendix E of this manual using I_A from Step 2. Calculate treatment volume (acre-ft): Treatment volume = A x (P₀ / 12)

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0.05

0.00

Γ

 P_0

Acre-Feet

Name of Drainage Shed: A3				Fill in Blue Highlighted boxes	3
Location of project: Folsom				3 3	
Step 1 - Open Space and Pervious Area Credit	ts				
Is your project within the drainage area of a common drainage plan t	hat includes open space	e? If not, skip to 1 b.			
1 a. Common Drainage Plan Area			0 acres	A _{CDP}	
Common Drainage Plan Open Space (Off-project)			0 acres	A _{os}	see area example
a. Natural storage reservoirs and drainage corridors			0 acres		bolow
b. Buffer zones for natural water bodies			0 acres		DEIOW
c. Natural areas including existing trees, other vegetation,	and soil		0 acres		
d. Common landscape area/park			0 acres		
e. Regional Flood Control/Drainage basins			0 acres		
1 b. Project Drainage Shed Area (Total)			0.36 acres	А	
Project-Specific Open Space (In-project, communal**))		0.05 acres	A _{PSOS}	
a. Natural storage reservoirs and drainage corridors			0.00 acres		
b. Buffer zones for natural water bodies			0.00 acres		ana araa ayamala
c. Natural areas including existing trees, other vegetation,	and soil		0.00 acres		see area example
d. Landscape area/park			0.05 acres		below
e. Flood Control/Drainage basins			0.00 acres		
** Doesn't include impervious areas within individual lots a	and surrounding indiv	vidual units. That is	accounted for below using	g Form D-1a in Step 2.	
Area with Runoff Reduction Potential	A - A _{PSOS} =		0.31 acres	A _T	
Assumed Initial Impervious Fraction	A _T / A =		0.86	1	
			<u> </u>		
Open Space & Pervious Area LID Credit (Step 1)					
(A _{OS} /A	_{CDP} +A _{PSOS} /A)x100 =		14 pts		





Step 2 - Runoff Reduction Credits						
Runoff Reduction Treatments	Impervious Area Managed		Efficienc Factor	у	Effective Area Managed (A _C)	
Porous Pavement:	Ū					
Option 1: Porous Pavement (see Fact Sheet, excludes porous pavement used in Option 2)	0	acres	x	=	0.000	acres
Option 2: Disconnected Pavement use Fo (see Fact Sheet, excludes porous pavement used in Option 1)	orm D-2a for credits			ب ا	0.00	acres
Landscaping used to Disconnect Pavement (see Fact Sheet)	0.0000	acres		=	0.00	acres
Disconnected Roof Drains (see Fact Sheet and/or Table D-2b for summary of requirements)	0.14	acres		=	0.14	acres
Ecoroof (see Fact Sheet)	0	acres		=	0.00	acres
Interceptor Trees use Form D-2b for credits (see Fact Sheet)	· · · · · · · · · · · · · · · · · · ·			•	0.00	acres
Total Effective Area Managed by Runoff Reduction Measu	ires		A _C		0.14	acres
Runoff Reduction Credit (Step 2)			(A _C / A _T)*100 =	45	pts

Table D-2a			Tabl	e D-2b	
	Efficiency			Minimu	m travel
Porous Pavement Type Cobblestone Block Pavement	0.40		Maximum roof size ≤ 3,500 sq ft	dista	ance 21 ft
Pervious Concrete/Asphalt	0.60		≤ 5,000 sq ft		24 ft
Reinforced Grass Pavement	1.00		≤ 10,000 sq ft		32 ft
See Fact Sheet for more information regarding Di	t Worksheet	credit auidelines			
				_	Effective Area Managed (A $_{\rm C}$)
Pavement Draining to Porous Pavement					
2. Enter area draining onto Porous Pavemen	t		0.00	acres	Box K1
3. Enter area of Receiving Porous Pavement			0.00	acres	Box K2
(excludes area entered in Step 2 under Porou 4 Ratio of Areas (Box K1 / Box K2)	s Pavement)		0.00		Box K3
4. Raio of Aleas (Box R17 Box R2)			0.00		DOX NO
 Select multiplier using ratio from Box K3 an Ratio (Box D) 	d enter into Box K4	Multiplier			
Ratio is ≤ 0.5 Ratio is ≥ 0.5 and ≤ 1.0		1.00			Box K4
Ratio is > 1.0 and < 1.5		0.71	1		Downer
Ratio is > 1.5 and < 2.0		0.55			
6. Enter Efficiency of Porous Pavement (see	table below)				Box K5
	Efficiency				
Cobblestone Block Pavement	0.40				
Pervious Concrete	0.60				
Modular Block Pavement	0.75				
Reinforced Grass Pavement	1.00				
7. Multiply Box K2 by Box K5 and enter into B	Box K6		0.00	acres	Box K6
8. Multiply Boxes K1,K4, and K5 and enter th	e result in Box K7		0.00	acres	Box K7
9 Add Box K6 to Box K7 and multiply by 60%	6 and enter the Res	ult in Box K8			0.00 acres
This is the amount of area credit to enter into	the "Disconnected P	avement" Box of Form D-2			
Form D-2b: Interceptor Tree Worksh	neet				
See Fact Sheet for more information regarding Int	erceptor Tree credit g	idelines			
New Evergreen Trees					
1. Enter number of new evergreen trees that	qualify as Intercepto	r Trees in Box L1.	trees	Box L1	
2. Multiply Box L1 by 200 and enter result in	Box L2		0 sq. ft.	Box L2	
New Deciduous Trees 3. Enter number of new deciduous trees that	qualify as Intercepto	r Trees in Box L3.	1 trees	Box L3	
4. Multiply Box L3 by 100 and enter result in	Box L4			Box L4	
Existing Tree Canopy					
5. Enter square footage of existing tree cano	by that qualifies as E	xisting Tree canopy in Box L5.	0 sq. ft.	Box L5	
 Multiply Box L5 by 0.5 and enter the result 	In Box L6		U sq. ft.	Box L6	
Total Interceptor Tree EAM Credits					
Add Boxes L2, L4, and L6 and enter it into Bo	x L7		100 sq. ft.	Box L7	
Divide Box L7 by 43,560 and multiply by 20%	to get effective area	managed and enter result in Box L8	0.00 acres	Box L8	
This is the amount of area credit to enter into	the "Interceptor Tree	s" Box of Form D-2			

Capture and Use Credits						
euptare ana eee ereane	- hannela Ciatanna a					
Impervious Area Managed by Rain	n barreis, Cisterns, a	nd automatically-emptied s	systems			
(see Fact Sheet)		- enter gallons	, for simple rain barrels		0.00	acres
Automated-Control Capture and L	Use System					
(see Fact Sheet, then enter impervious a	area managed by the syste	m)			0.00	acres
Bioretention/Infiltration Credits	s					
Impervious Area Managed by Bio	retention BMPs	Bioretention Area	470 sq ft			
(see Fact Sheet)		Subdrain Elevation	8 inches		0.40	
		Ponding Depth, inches	12 inches		0.16	acres
Impervious Area Managed by Infil	Itration BMPs					
(see Fact Sheet)	ination Dim 3	Drawdown Time, hrs	drawdown_hrs_inf			
		Soil Infiltration Rate, in/hr	soil_inf_rate			
	Sizing Option 1:	Capture Volume, acre-ft	0.00 capture_vol_inf		0.00	acres
	Sizing Option 2: Infi	tration BMP surface area, so ft	0 soil surface area		0.00	acres
	Basin or trench	?	approximate BMP depth 0	00 ft		
Impervious Area Managed by Am	ended Soil or Mulch	Beds			0.00	
(see Fact Sheet)		Mulched Infiltration Area, sq ft	mulch_area		0.00	acres
Total Effective Area Managed by Ca	pture-and-Use/Bioret	ention/Infiltration BMPs			0.16	A _{LIDc}
Runoff Management Credit (Step 3)				Augo/A-*200	= 103.8	nte
Total LID Credits (Step	1+2+3)	LID compliant, che	ck for treatment sizir	ig in Step 4	163.0	
Does project require hydromodifica	tion management? If	yes, proceed to using Sad	:НМ.			
Adjusted Area for Flow-Based Non-				- 0.0	1	•
Aujusteu Areu for From Buseu, Nor	-LID Treatment		A _T - A _C -A _{LIE}	_{IC} = 0.0	1	A _{AT}
Adjusted Impervious Fraction of A f	or Volume-Based, No	on-LID Treatment	A _T - A _C -A _{LIE}	A = 0.02	2	A _{AT}
Adjusted Impervious Fraction of A f	for Volume-Based, No	on-LID Treatment	A _T - A _C - A _{LIC} A _{AT} / /	A = 0.02	2	A _{AT}
Adjusted Impervious Fraction of A f	for Volume-Based, No	on-LID Treatment	Α _τ - Α _C - Α _{LIC} Α _{ΑΤ} / /	$A_{\rm C} = 0.0$	2	A _{AT}
Adjusted Impervious Fraction of A f	for Volume-Based, No	on-LID Treatment	$A_{T} - A_{C} - A_{LIC}$ A_{AT} / J	A = 0.0	2	☐ A _{AT} ☐ I _A
Adjusted Impervious Fraction of A f STOP: No additional tre	onal Method)	on-LID Treatment	Α _τ - Α _C - Α _{LIC} Α _{ΑΤ} / /	A = 0.0	2	☐ A _{AT} ☐ I _A
Adjusted Impervious Fraction of A f STOP: No additional tre a Treatment - Flow-Based (Rational e treatment flow (cfs):	or Volume-Based, No eatment neede onal Method)	on-LID Treatment d = Runoff Coefficient x Rainf	$A_T - A_C - A_{LIC}$ $A_{AT} / /$ all Intensity x Area	_{ic} = 0.0	2	A _{AT} I _A
Adjusted Impervious Fraction of A f STOP: No additional tre a Treatment - Flow-Based (Rational e treatment flow (cfs):	ior Volume-Based, No eatment neede onal Method)	on-LID Treatment d = Runoff Coefficient x Rainf	$A_T - A_C - A_{LIC}$ A_{AT} / J all Intensity x Area	A = 0.0	1 2] A _{AT}
Adjusted Impervious Fraction of A f STOP: No additional tre a Treatment - Flow-Based (Rational tre treatment flow (cfs): value for i in Table D-2c (Rainfall Intensity)	ior Volume-Based, No atment neede onal Method) Flow	on-LID Treatment d = Runoff Coefficient x Rainf 0.20 ji	$A_T - A_C - A_{LIC}$ A_{AT} / J all Intensity x Area	ic = 0.0	1 2 Table D-2c Rainfall	A _{AT}
Adjusted Impervious Fraction of A f STOP: No additional tre a Treatment - Flow-Based (Rational e treatment flow (cfs): value for i in Table D-2c (Rainfall Intension Autor from Step 3	ior Volume-Based, No eatment neede onal Method) Flow sity)	en-LID Treatment d = Runoff Coefficient x Rainf 0.20 i 0.01 Avr	$A_T - A_C - A_{LIC}$ A_{AT} / I all Intensity x Area	ic = 0.0	1 2 Table D-2c Rainfall Roseville	A _{AT} I _A I _A Intensity = 0.20 in/hr = 0.18 in/hr
Adjusted Impervious Fraction of A f STOP: No additional tre a Treatment - Flow-Based (Rational e treatment flow (cfs): value for i in Table D-2c (Rainfall Intensity var from Step 3	ior Volume-Based, No eatment neede onal Method) Flow sity)	en-LID Treatment d = Runoff Coefficient x Rainf 0.20 i 0.01 A _{AT}	$A_T - A_C - A_{LIC}$ A_{AT} / J all Intensity x Area	k = 0.0	1 2 Table D-2c Rainfall Roseville i Sacramento i Folsom i	A _{AT} I _A I _A Intensity = 0.20 in/hr = 0.18 in/hr = 0.20 in/hr
Adjusted Impervious Fraction of A f STOP: No additional tre a Treatment - Flow-Based (Rational e treatment flow (cfs): value for i in Table D-2c (Rainfall Intens NAT from Step 3 0.95	ior Volume-Based, No eatment neede onal Method) Flow sity)	en-LID Treatment d = Runoff Coefficient x Rainf 0.20 i 0.01 A _{AT} 0.95 C	$A_T - A_C - A_{LIC}$ A_{AT} / J all Intensity x Area	k = 0.0	1 2 Table D-2c Rainfall Roseville i Sacramento i Folsom i	A _{AT} I _A I _A Intensity O.20 in/hr 0.18 in/hr 0.20 in/hr
Adjusted Impervious Fraction of A f STOP: No additional tre a Treatment - Flow-Based (Rational e treatment flow (cfs): value for i in Table D-2c (Rainfall Intens Ant from Step 3 0.95	ior Volume-Based, No eatment neede onal Method) Flow sity)	en-LID Treatment d Runoff Coefficient x Rainf 0.20 i 0.01 A _{AT} 0.95 C	$A_T - A_C - A_{LIC}$ A_{AT} / J all Intensity x Area	k = 0.0	1 2 Table D-2c Rainfall Roseville i Sacramento i Folsom i	A _{AT} I _A Intensity O.20 in/hr 0.20 in/hr 0.20 in/hr
Adjusted Impervious Fraction of A f STOP: No additional tre a Treatment - Flow-Based (Rational e treatment flow (cfs): value for i in Table D-2c (Rainfall Intensity var, from Step 3 0.95 Flow = 0.95 * i * A _{AT}	ior Volume-Based, No eatment neede onal Method) Flow sity)	en-LID Treatment d = Runoff Coefficient x Rainf 0.20 i 0.01 A _{AT} 0.95 C 0.00 cfs	$A_T - A_C - A_{LIC}$ A_{AT} / I all Intensity x Area	k = 0.0	1 2 Table D-2c Rainfall Roseville i Sacramento i Folsom i	A _{AT} I _A I _A Intensity O.20 in/hr 0.18 in/hr 0.20 in/hr
Adjusted Impervious Fraction of A f STOP: No additional tre a Treatment - Flow-Based (Rational e treatment flow (cfs): value for i in Table D-2c (Rainfall Intense A _{AT} from Step 3 0.95 Flow = 0.95 * i * A _{AT}	ior Volume-Based, No eatment neede onal Method) Flow sity)	en-LID Treatment d = Runoff Coefficient x Rainf 0.20 i 0.01 A _{AT} 0.95 C 0.00 cfs	Α _T - Α _C - Α _{LIC}	k = 0.0	1 2 Table D-2c Rainfall Roseville i Sacramento i Folsom i	A _{AT} I _A I _A Intensity O.20 in/hr 0.18 in/hr 0.20 in/hr
Adjusted Impervious Fraction of A f STOP: No additional tre a Treatment - Flow-Based (Rational tre te treatment flow (cfs): value for i in Table D-2c (Rainfall Intens Var from Step 3 0.95 Flow = 0.95 * i * A _{AT}	ior Volume-Based, No eatment neede onal Method) Flow sity)	en-LID Treatment d enumber 201	A _T - A _C - A _{LIC}	k = 0.0	1 2 Table D-2c Rainfall Roseville i : Sacramento i : Folsom i :	A _{AT} I _A Intensity ■ 0.20 in/hr = 0.20 in/hr = 0.18 in/hr = 0.20 in/hr
Adjusted Impervious Fraction of A f STOP: No additional tre a Treatment - Flow-Based (Rational tre e treatment flow (cfs): value for i in Table D-2c (Rainfall Intensivation Step 3) 0.95 Flow = 0.95 * i * A _{AT}	ior Volume-Based, No conal Method) Flow sity)	en-LID Treatment d = Runoff Coefficient x Rainf 0.20 ji 0.01 A _{AT} 0.95 C 0.00 cfs	A _T - A _C - A _{LIC} A _{AT} / <i>I</i> all Intensity x Area	LC = 0.0 A = 0.02	1 2 Table D-2c Rainfall Roseville i Sacramento i Folsom i	A _{AT} I _A I _A Intensity = 0.20 in/hr 0.18 in/hr = 0.20 in/hr = 0.20 in/hr
Adjusted Impervious Fraction of A f STOP: No additional tre a Treatment - Flow-Based (Rational tre a treatment flow (cfs): value for i in Table D-2c (Rainfall Intensivation Step 3) 0.95 Flow = 0.95 * i * A _{AT} b Treatment - Volume-Based (A e water quality volume (Acre-Feet):	ior Volume-Based, No eatment neede onal Method) Flow sity)	en-LID Treatment d = Runoff Coefficient x Rainf 0.20 ji 0.01 A _{AT} 0.95 C 0.00 cfs	A _T - A _C - A _{LIC} A _{AT} / / all Intensity x Area	k = 0.0	1 2 Table D-2c Rainfall Roseville i : Sacramento i : Folsom i :	A _{AT} I _A I _A Intensity 0.20 in/hr 0.18 in/hr 0.20 in/hr 0.20 in/hr
Adjusted Impervious Fraction of A f STOP: No additional tre a Treatment - Flow-Based (Rational tre a treatment flow (cfs): value for i in Table D-2c (Rainfall Intensive Mathematical States of the states of t	ior Volume-Based, No eatment neede onal Method) Flow sity)	en-LID Treatment d = Runoff Coefficient x Rainf 0.20 ji 0.01 A _{AT} 0.95 C 0.00 cfs / = Area x Maximized Detent	A _T - A _C - A _{LIC} A _{AT} / / all Intensity x Area	k = 0.0	1 2 Table D-2c Rainfall Roseville i : Sacramento i : Folsom i :	A _{AT} I _A Intensity = 0.20 in/hr = 0.18 in/hr = 0.20 in/hr = 0.20 in/hr

Obtain P_0 : Maximized Detention Volume from figures E-1 to E-4 in Appendix E of this manual using I_A from Step 2. 0.06 P_0 Calculate treatment volume (acre-ft): Treatment volume = A x (P₀ / 12) 0.00 Γ Acre-Feet

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Name of Drainage Shed: A4	Fill in Blue Highlighted boxe	S
Location of project: Folsom		
Step 1 - Open Space and Pervious Area Credits		
Is your project within the drainage area of a common drainage plan that includes open space	kip to 1 b.	
1 a. Common Drainage Plan Area	0 acres A _{CDP}	
Common Drainage Plan Open Space (Off-project)	0 acres A _{os}	see area example
a. Natural storage reservoirs and drainage corridors	0 acres	below
b. Buffer zones for natural water bodies	0 acres	Delow
c. Natural areas including existing trees, other vegetation, and soil	0 acres	
d. Common landscape area/park	0 acres	
e. Regional Flood Control/Drainage basins	0 acres	
1 b. Project Drainage Shed Area (Total)	0.22 acres A	
Project-Specific Open Space (In-project, communal**)	0.03 acres A _{PSOS}	
a. Natural storage reservoirs and drainage corridors	0.00 acres	
b. Buffer zones for natural water bodies	0.00 acres	ana araa ayamnia
c. Natural areas including existing trees, other vegetation, and soil	0.00 acres	see area example
d. Landscape area/park	0.03 acres	Delow
e. Flood Control/Drainage basins	0.00 acres	
** Doesn't include impervious areas within individual lots and surrounding individual	its. That is accounted for below using Form D-1a in Step 2.	
Area with Runoff Reduction Potential A - A _{PSOS} =	0.19 acres A _T	
Assumed Initial Impervious Fraction A _T / A =	0.86	
Open Space & Pervious Area LID Credit (Step 1)		
(Acc/AcoptAccoc/A)x100 =	14 pts	





Step 2 - Runoff Reduction Credits						
Runoff Reduction Treatments	Impervious Area Managed		E	Efficiency Factor	Effective Area Managed (A _C)	
Porous Pavement:	-					
Option 1: Porous Pavement (see Fact Sheet, excludes porous pavement used in Option 2)	0	acres	x	=	0.000	acres
Option 2: Disconnected Pavement use Fo (see Fact Sheet, excludes, porous pavement used in Option 1)	orm D-2a for credits				0.00	acres
Landscaping used to Disconnect Pavement (see Fact Sheet)	0.0000	acres		=	0.00	acres
Disconnected Roof Drains (see Fact Sheet and/or Table D-2b for summary of requirements)	0.12	acres		=	0.12	acres
Ecoroof (see Fact Sheet)	0	acres		=	0.00	acres
Interceptor Trees use Form D-2b for credits (see Fact Sheet)				→	0.00	acres
Total Effective Area Managed by Runoff Reduction Measu	ires			A _C	0.12	acres
Runoff Reduction Credit (Step 2)				(A _C / A _T)*1	00 = 63	pts

	Table D-2a			Tab	le D-2b	
		Efficiency			Minimu	m travel
	Porous Pavement Type Cobblestone Block Pavement	Multiplier 0.40		Maximum roof size ≤ 3 500 sq ft	dista	ance 21 ft
	Pervious Concrete/Asphalt	0.60		≤ 5,000 sq ft		24 ft
	Modular Block Pavement & Reinforced Grass Pavement	0.75		≤ 7,500 sq ft ≤ 10.000 sq ft		28 ft 32 ft
				,		-
Form	D-2a: Disconnected Pavement	Worksheet				
See Fac	t Sheet for more information regarding Disc	onnected Pavement	credit guidelines			Effective Area Managed (A _c)
Pavem	ent Draining to Porous Pavement					
2. Ente	r area draining onto Porous Pavement			0.00	acres	Box K1
3. Ente	r area of Receiving Porous Pavement			0.00	acres	Box K2
(exclud	es area entered in Step 2 under Porous	Pavement)				
4. Rati	o of Areas (Box K1 / Box K2)			0.00		Box K3
5. Sele	t multiplier using ratio from Box K3 and Ratio (Box D)	enter into Box K4	Multiplier			
	Ratio is ≤ 0.5 Ratio is > 0.5 and < 1.0		1.00			Box K4
	Ratio is > 1.0 and < 1.5		0.71	1		DOATIO
	Ratio is > 1.5 and < 2.0		0.55			
6. Ente	r Efficiency of Porous Pavement (see ta	able below)				Box K5
	Porous Povoment Ture	Efficiency				
	Cobblestone Block Pavement	0.40				
	Pervious Concrete	0.60				
	Modular Block Pavement	0.75				
	Porous Gravel Pavement Reinforced Grass Pavement	1.00				
7. Mult	ply Box K2 by Box K5 and enter into Bo	x K6		0.00	acres	Box K6
8. Mult	iply Boxes K1.K4, and K5 and enter the	result in Box K7		0.00	acres	Box K7
						0.00
9. Add This is 1	he amount of area credit to enter into th	and enter the Rest	avement" Box of Form D-2			0.00 acres
Form	D-2b: Interceptor Tree Workshe	et				
See Fac	t Sheet for more information regarding Inter	ceptor Tree credit gu	idelines			
New Ev	rergreen Trees					
1. Ente	r number of new evergreen trees that q	ualify as Interceptor	Trees in Box L1.	tree	s Box L1	
2. Mult	ply Box L1 by 200 and enter result in B	ox L2		0 sq. fi	. Box L2	
New De	eciduous Trees					
3. Ente	r number of new deciduous trees that q	ualify as Intercepto	Trees in Box L3.	1 tree	s Box L3	
4. Mult	ply Box L3 by 100 and enter result in Bo	ox L4		100 sq. fi	Box L4	
Existin	g Tree Canopy					
5. Ente	r square footage of existing tree canopy	r that qualifies as E	kisting Tree canopy in Box L5.	0 sq. fi	Box L5	
6. Mult	iply Box L5 by 0.5 and enter the result ir	n Box L6		O sq. fi	Box L6	
Total Ir	terceptor Tree EAM Credits					
Add Bo	xes L2, L4, and L6 and enter it into Box	L7		100 sq. fi	Box L7	
Divide I	Box L7 by 43,560 and multiply by 20% to	get effective area	managed and enter result in Box L8	0.00 acre	s Box L8	
This is t	he amount of area credit to enter into th	e "Interceptor Tree	s" Box of Form D-2			

Step 3 - Runoff Management Cree	dits			
Capture and Use Credits				
Impervious Area Managed by Rain b	arrels, Cisterns, and automatically-emptied	l systems		
(see Fact Sheet)	- enter gallon	is, for simple rain barrels	0.00	acres
Automated-Control Capture and Use	> System			
(see Fact Sheet, then enter impervious area	a managed by the system)		0.00	acres
Bioretention/Infiltration Credits				
Impervious Area Managed by Bioret	ention BMPs Bioretention Area	175 sq ft		
(see Fact Sneet)	Ponding Depth, inches	12 inches	0.06	acres
	.			
Impervious Area Managed by Infiltra	ation BMPs			
(see Fact Sheet)	Drawdown Time, hrs	drawdown_hrs_inf		
	Con minutation reade, minu			
Si	zing Option 1: Capture Volume, acre-ft	0.00 capture_vol_inf	0.00	acres
Si	zing Option 2: Infiltration BMP surface area, sq ft	0 soil_surface_area	0.00	acres
	Basin or trench?	approximate BMP depth 0.00 ft		
Impervious Area Managed by Amend	ded Soil or Mulch Beds		0.00	
(see Fact Sheet)	Mulched Infiltration Area, sq ft	muicn_area	0.00	acres
Total Effective Area Managed by Captu	Ire-and-Use/Bioretention/Infiltration BMPs		0.06	A _{LIDc}
Runoff Management Credit (Step 3)		Augo	/A-*200 = 63.1	nte
Does project require hydromodification	n management? If yes, proceed to using Sa	acHM.		
Adjusted Area for Flow-Based, Non-LII	D Treatment	$A_T - A_C - A_{LIDC} =$	0.01	A _{AT}
Adjusted Impervious Fraction of A for	Volume Raced Non LID Treatment	A / A =	0.04	٦.
Aujusted impervisus Plaction of A for	Foralle Based, Non Elb Treatment		0.01	- A
STOP: No additional treat	ment needed			
a Treatment - Flow-Based (Ration	al Method)			
e treatment flow (cfe):	Flow = Dupoff Coofficient x Dail	nfall Intensity y Area		
e treatment now (cis).	riow – Ruhon Coemcient x Rain	nan mensity x Area	Table D-2c	
value for i in Table D-2c (Rainfall Intensity)) 0.20 i		Rainfall	Intensity
			Roseville i =	0.20 in/hr
AAT ITOM SIEP 3	0.01 A _{AT}		Sacramento i =	0.18 in/nr
0.95	0.95 c			0.20 11/11
Flow = 0.95 * i * A _{AT}	0.00 cfs			
b Treatment - Volume-Based (ASC	E-WEF)			
Treatment - Volume-Based (ASC water quality volume (Acre-Feet)	XE-WEF) WQV = Area x Maximized Deter	ntion Volume (P ₂)		
Treatment - Volume-Based (ASC e water quality volume (Acre-Feet):	CE-WEF) WQV = Area x Maximized Deter	ntion Volume (P ₀)		

 Obtain P₀: Maximized Detention Volume from figures E-1 to E-4

 in Appendix E of this manual using I_k from Step 2.

 Calculate treatment volume (acre-ft):

 Treatment volume = A x (P₀ / 12)

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0.08

0.00

 P_0

Acre-Feet

Appendix D-2: Commercial Sites: Low Impac	t Development (I	ID) Credits and Treatm	nent BMP Sizi	ing Calculations	
Name of Drainage Shed: A5				Fill in Blue Highlighted boxes	
Location of project: Folsom					
Step 1 - Open Space and Pervious Area Cred	its				
Is your project within the drainage area of a common drainage plan	that includes open space	e? If not, skip to 1 b.			
1 a. Common Drainage Plan Area			0 acres	A _{CDP}	
Common Drainage Plan Open Space (Off-project)			0 acres	A _{os}	soo aroa oyampio
a. Natural storage reservoirs and drainage corridors			0 acres		bolow
b. Buffer zones for natural water bodies			0 acres		DEIOW
c. Natural areas including existing trees, other vegetation	n, and soil		0 acres		
d. Common landscape area/park			0 acres		
e. Regional Flood Control/Drainage basins			0 acres		
1 b. Project Drainage Shed Area (Total)			0.48 acres	А	
Project-Specific Open Space (In-project, communal**	*)		0.03 acres	A _{PSOS}	
a. Natural storage reservoirs and drainage corridors			0.00 acres		
b. Buffer zones for natural water bodies			0.00 acres		soo araa ayamnla
c. Natural areas including existing trees, other vegetation	n, and soil		0.00 acres		see area example
d. Landscape area/park			0.03 acres		below
e. Flood Control/Drainage basins			0.00 acres		
** Doesn't include impervious areas within individual lots	and surrounding indi	vidual units. That is accounted	ed for below usin	ng Form D-1a in Step 2.	
Area with Runoff Reduction Potential	A - A _{PSOS} =		0.45 acres	A _T	
Assumed Initial Impervious Fraction	A _T / A =		0.94	1	
			<u> </u>		
Open Space & Pervious Area LID Credit (Step 1)					
(A _{OS} /A	$A_{CDP} + A_{PSOS}/A) \times 100 =$		6 pts		





Step 2 - Runoff Reduction Credits						
Runoff Reduction Treatments	Impervious Area Managed		Efficiency Factor		Effective Area Managed (A _C)	
Porous Pavement:	Ŭ					
Option 1: Porous Pavement (see Fact Sheet, excludes porous pavement used in Option 2)	0	acres	x	=	0.000	acres
Option 2: Disconnected Pavement use For (see Fact Sheet, excludes porous pavement used in Option 1)	orm D-2a for credits				0.00	acres
Landscaping used to Disconnect Pavement (see Fact Sheet)	0.0000	acres		=	0.00	acres
Disconnected Roof Drains (see Fact Sheet and/or Table D-2b for summary of requirements)	0	acres		=	0.00	acres
Ecoroof (see Fact Sheet)	0	acres		=	0.00	acres
Interceptor Trees use Form D-2b for credits (see Fact Sheet)					0.00	acres
Total Effective Area Managed by Runoff Reduction Measu	ires		Ac		0.00	acres
Runoff Reduction Credit (Step 2)			(A _C /	A _T)*100 =	0	pts

	Table D-2a			Tab	e D-2b	
		Efficiency			Minimu	m travel
	Porous Pavement Type Cobblestone Block Pavement	Multiplier 0.40		Maximum roof size ≤ 3,500 sq ft	dista	ance 21 ft
	Pervious Concrete/Asphalt	0.60		≤ 5,000 sq ft		24 ft
	Reinforced Grass Pavement &	1.00		≤ 7,500 sq ft ≤ 10,000 sq ft		32 ft
				<u>.</u>		
Form I	D-2a: Disconnected Pavement	Norksheet				
See Fact	Sheet for more information regarding Disc	onnected Pavement	credit guidelines			Effective Area Managed (A $_{\rm C}$)
Paveme	ent Draining to Porous Pavement					
2. Enter	area draining onto Porous Pavement			0.00	acres	Box K1
3. Enter	area of Receiving Porous Pavement			0.00	acres	Box K2
(exclude	s area entered in Step 2 under Porous	Pavement)		0.00	40105	DOXINE
4. Ratio	of Areas (Box K1 / Box K2)			0.00		Box K3
5. Selec	t multiplier using ratio from Box K3 and Ratio (Box D)	enter into Box K4	Multiplier			
	Ratio is ≤ 0.5 Ratio is ≥ 0.5 and < 1.0		1.00			Box K4
	Ratio is > 1.0 and < 1.5		0.71	1		DUATION
	Ratio is > 1.5 and < 2.0		0.55			
6. Enter	Efficiency of Porous Pavement (see ta	able below)				Box K5
	Denous Denous T	Efficiency				
	Cobblestone Block Pavement	0.40				
	Pervious Concrete	0.60				
	Modular Block Pavement	0.75				
	Porous Gravel Pavement Reinforced Grass Pavement	1.00				
7. Multi	ply Box K2 by Box K5 and enter into Bo	x K6		0.00	acres	Box K6
8 Multi	oly Boxes K1 K4, and K5 and enter the	result in Box K7		0.00	20105	Box K7
o. man	by boxes it i,ite, and its and enter the			0.00	40163	BOXIN
9. Add I This is tl	Box K6 to Box K7 and multiply by 60%, ne amount of area credit to enter into th	and enter the Resu e "Disconnected Pa	Ilt in Box K8 avement" Box of Form D-2			0.00 acres
Form I	D-2b: Interceptor Tree Workshe	et				
See Fact	Sheet for more information regarding Inter	ceptor Tree credit gu	idelines			
New Ev	ergreen Trees					
1. Enter	number of new evergreen trees that qu	ualify as Interceptor	Trees in Box L1.	trees	Box L1	
2. Multi	bly Box L1 by 200 and enter result in B	ox L2		0 sq. ft	Box L2	
New De	ciduous Trees					
3. Enter	number of new deciduous trees that q	ualify as Interceptor	Trees in Box L3.	4 trees	Box L3	
4. Multi	oly Box L3 by 100 and enter result in Bo	ox L4		400 sq. ft	Box L4	
Existing	Tree Canopy					
5. Enter	square footage of existing tree canopy	that qualifies as E	cisting Tree canopy in Box L5.	0 sq. ft	Box L5	
6. Multi	oly Box L5 by 0.5 and enter the result ir	Box L6		0 sq. ft	Box L6	
Total In	terceptor Tree EAM Credits					
Add Box	es L2, L4, and L6 and enter it into Box	L7		400 sq.ft	Box L7	
Divide B	ox 1.7 by 43.560 and multiply by 20% to	o det effective area	managed and enter result in Box I 8		Pov I P	
This is the	ne amount of area credit to enter into th	e "Interceptor Tree	s" Box of Form D-2	U.UU acres	BOX L8	

Impervious Area Managed by Rain	n barrels, Cisterns, a	nd automatically-emptied	systems			
(see Fact Sheet)		- enter gallons	, for simple rain barrels		0.00	acres
Automated-Control Capture and U	Use System					
(see Fact Sheet, then enter impervious a	area managed by the syste	m)			0.00	acres
Bioretention/Infiltration Credits	s					
Impervious Area Managed by Bio	retention BMPs	Bioretention Area	1,280 sq ft			
(See Fact Sheer)		Ponding Depth, inches	12 inches		0.44	acres
		-				
Impervious Area Managed by Infil	Itration BMPs	Draudaum Tima, bra	droudour bro inf			
		Soil Infiltration Rate, in/hr	soil_inf_rate			
	Sizing Option 1:	Capture Volume, acre-ft	0.00 capture_vol_inf		0.00	acres
	Sizing Option 2: Infi	Itration BMP surface area, sq ft	0 soil_surface_area		0.00	acres
	Basin or trench	?	approximate BMP depth 0.00	ft		
Impervious Area Managed by Am	ended Soil or Mulch	Beds	mulah araa		0.00	
			indici_area	l	0.00	acies
Total Effective Area Managed by Ca	apture-and-Use/Bioret	ention/Infiltration BMPs			0.44	A _{LIDc}
Runoff Management Credit (Step 3) Total LID Credits (Step 7 Dees project require hydromodificat	1+2+3)	LID compliant, che	cck for treatment sizing	A _{LIDC} /A _T *200 = in Step 4	194.8 201.4	pts
Runoff Management Credit (Step 3) Total LID Credits (Step 5) Does project require hydromodificat Adjusted Area for Flow-Based. Non-	1+2+3) tion management? It	LID compliant, che i yes, proceed to using Sa	cck for treatment sizing снм. А _т - А _с -А _{нле} -	A _{LIDC} /A _T *200 = in Step 4 0.01	194.8 201.4	pts
Runoff Management Credit (Step 3) Total LID Credits (Step 3) Does project require hydromodifica Adjusted Area for Flow-Based, Non-	1+2+3) Ition management? If -LID Treatment	LID compliant, che i yes, proceed to using Sa	<mark>eck for treatment sizing</mark> снм. А _т - А _с -А _{LIDC} =	A _{LIDC} /A _T *200 =	194.8 201.4	pts
Runoff Management Credit (Step 3) Total LID Credits (Step 5 Does project require hydromodificat Adjusted Area for Flow-Based, Non- Adjusted Impervious Fraction of A f	1+2+3) ttion management? It -LID Treatment for Volume-Based, No	LID compliant, che i yes, proceed to using Sa on-LID Treatment	<mark>eck for treatment sizing</mark> снм. А _т - А _с -А _{LIDC} = А _{АТ} / А =	A _{LIDC} /A _T *200 = in Step 4 : 0.01 0.02	194.8 201.4	pts
Runoff Management Credit (Step 3) Total LID Credits (Step 5 Does project require hydromodificat Adjusted Area for Flow-Based, Non- Adjusted Impervious Fraction of A f STOP: No additional tree	1+2+3) Ition management? If -LID Treatment for Volume-Based, No eatment neede	LID compliant, che i yes, proceed to using Sa on-LID Treatment d	<mark>еск for treatment sizing</mark> снм. А _т - А _с -А _{LIDC} = А _{АТ} / А =	A _{LIDC} /Α _τ *200 = in Step 4 : 0.01 0.02	194.8 201.4	pts
Runoff Management Credit (Step 3) Total LID Credits (Step 3) Does project require hydromodifica Adjusted Area for Flow-Based, Non- Adjusted Impervious Fraction of A f STOP: No additional tree	1+2+3) Ition management? If -LID Treatment for Volume-Based, No eatment neede	LID compliant, che i yes, proceed to using Sa on-LID Treatment d	eck for treatment sizing cHM. A _T - A _C -A _{LIDC} = A _{AT} / A =	A _{LIDC} /Α _τ *200 = in Step 4 : 0.01 0.02	194.8 201.4	pts
Runoff Management Credit (Step 3) Total LID Credits (Step 7 Does project require hydromodifica Adjusted Area for Flow-Based, Non- Adjusted Impervious Fraction of A f STOP: No additional tre Treatment - Flow-Based (Ratio	1+2+3) Ition management? It -LID Treatment for Volume-Based, No eatment neede onal Method)	LID compliant, che ryes, proceed to using Sa on-LID Treatment d	eck for treatment sizing снм. А _т - А _с -A _{LDC} = А _{AT} / А =	A _{LIDC} /Α _τ *200 = in Step 4 : 0.01 0.02	194.8 201.4	pts
Runoff Management Credit (Step 3) Total LID Credits (Step 5 Does project require hydromodificat Adjusted Area for Flow-Based, Non- Adjusted Impervious Fraction of A f STOP: No additional tre a Treatment - Flow-Based (Ratio a treatment flow (cfs):	1+2+3) Ition management? It -LID Treatment for Volume-Based, No eatment neede onal Method) Flow	LID compliant, che f yes, proceed to using Sa on-LID Treatment d = Runoff Coefficient x Raint	ack for treatment sizing cHM. A _T - A _C -A _{LIDC} = A _{AT} / A =	A _{LID} /Α _τ *200 = in Step 4 : 0.01 0.02	194.8 201.4	pts
Runoff Management Credit (Step 3) Total LID Credits (Step 7 Does project require hydromodificar Adjusted Area for Flow-Based, Non- Adjusted Impervious Fraction of A f STOP: No additional tre a Treatment - Flow-Based (Ratio b treatment flow (cfs): value for i in Table D-2c (Rainfall Intens	1+2+3) Ition management? It -LID Treatment for Volume-Based, No eatment neede onal Method) Flow sity)	LID compliant, che yes, proceed to using Sa on-LID Treatment d = Runoff Coefficient x Raint 0.20 ji	eck for treatment sizing cHM. $A_{T} - A_{C} - A_{LDC} = A_{AT} / A =$ fall Intensity x Area	A _{LID} /Α _τ *200 = in Step 4 : 0.01 0.02	194.8 201.4 Table D-2c Rainfall	pts A _{AT} I _A Intensity
Runoff Management Credit (Step 3) Total LID Credits (Step 7) Does project require hydromodificar Adjusted Area for Flow-Based, Non- Adjusted Impervious Fraction of A f STOP: No additional tre a Treatment - Flow-Based (Ratio a treatment flow (cfs): value for i in Table D-2c (Rainfall Intens from Step 3	1+2+3) Ition management? If -LID Treatment for Volume-Based, No eatment neede onal Method) Flow	LID compliant, che i yes, proceed to using Sa on-LID Treatment d = Runoff Coefficient x Rainf 0.20]i	eck for treatment sizing cHM. $A_T - A_C - A_{LIDC} = A_{AT} / A =$ fall Intensity x Area	A _{LID} /Α _τ *200 = in Step 4 : 0.01 0.02	194.8 201.4 Table D-2c Rainfall Roseville	pts
Runoff Management Credit (Step 3) Total LID Credits (Step 5) Does project require hydromodifica Adjusted Area for Flow-Based, Non- Adjusted Impervious Fraction of A f STOP: No additional tre a Treatment - Flow-Based (Ratio a treatment flow (cfs): value for i in Table D-2c (Rainfall Intens at from Step 3	1+2+3) Ition management? It -LID Treatment for Volume-Based, No eatment neede onal Method) Flow sity)	LID compliant, che i yes, proceed to using Sar on-LID Treatment d = Runoff Coefficient x Rainf 0.20 ji 0.01 A _{AT}	eck for treatment sizing снм. A _T - A _C - A _{LIDC} = A _{AT} / A =	A _{LID} /A _τ *200 = in Step 4 : 0.01 0.02	194.8 201.4 Table D-2c Rainfall Roseville i : Sacramento i : Folsom i :	pts A _{AT} I _A Intensity = 0.20 in/hr = 0.20 in/hr = 0.20 in/hr
Runoff Management Credit (Step 3) Total LID Credits (Step 5) Does project require hydromodifica Adjusted Area for Flow-Based, Non- Adjusted Impervious Fraction of A f STOP: No additional tre a Treatment - Flow-Based (Ratio a treatment flow (cfs): value for i in Table D-2c (Rainfall Intens at from Step 3 0.95	1+2+3) Ition management? If -LID Treatment for Volume-Based, No eatment neede onal Method) Flow sity)	LID compliant, che i yes, proceed to using Sar on-LID Treatment d = Runoff Coefficient x Raint 0.20 i 0.01 A _{AT} 0.95 c	fall Intensity x Area	A _{LID} (A _T *200 = in Step 4 : 0.01 0.02	194.8 201.4 Table D-2c Rainfall Roseville i Sacramento i Folsom i	pts A _{AT} I _A I _A Intensity = 0.20 in/hr 0.18 in/hr = 0.20 in/hr
Runoff Management Credit (Step 3) Total LID Credits (Step 1) Does project require hydromodifical Adjusted Area for Flow-Based, Non- Adjusted Impervious Fraction of A f STOP: No additional tree a Treatment - Flow-Based (Rational a treatment flow (cfs): value for i in Table D-2c (Rainfall Intense Mather from Step 3 0.95 Flow = 0.95 * i * Ast	1+2+3) Ition management? It -LID Treatment for Volume-Based, No eatment neede onal Method) Flow sity)	LID compliant, che i yes, proceed to using Sa on-LID Treatment d = Runoff Coefficient x Raint 0.20 i 0.01 A _{AT} 0.95 C 0.00 cfs	eck for treatment sizing cHM. A _T - A _C -A _{LIDC} = A _{AT} / A =	A _{LIDC} /Α _τ *200 = in Step 4 : 0.01 0.02	194.8 201.4 Table D-2c Rainfall Roseville i : Sacramento i : Folsom i :	pts A _{AT} I _A Intensity = 0.20 in/hr = 0.20 in/hr = 0.20 in/hr
Runoff Management Credit (Step 3) Total LID Credits (Step 5 Does project require hydromodifica Adjusted Area for Flow-Based, Non- Adjusted Impervious Fraction of A f STOP: No additional tre Treatment - Flow-Based (Ratio Treatment flow (cfs): value for i in Table D-2c (Rainfall Intens aT from Step 3 0.95 Flow = 0.95 * i * A _{AT}	1+2+3) Ition management? It -LID Treatment for Volume-Based, No eatment neede onal Method) Flow sity)	LID compliant, che i yes, proceed to using Sar on-LID Treatment d = Runoff Coefficient x Raint 0.20 i 0.01 A _{AT} 0.95 c 0.00 cfs	fall Intensity x Area	A _{LIDC} /Α _τ *200 = in Step 4 : 0.01 0.02	194.8 201.4 Table D-2c Rainfall Roseville i Sacramento i Folsom i	pts A _{AT} I _A Intensity = 0.20 in/hr = 0.20 in/hr
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Runoff Management Credit (Step 3) Total LID Credits (Step 7 Does project require hydromodifica Adjusted Area for Flow-Based, Non- Adjusted Impervious Fraction of A f STOP: No additional tre a Treatment - Flow-Based (Ratio a treatment flow (cfs): value for i in Table D-2c (Rainfall Intens aT from Step 3 0.95 Flow = 0.95 * i * A _{AT} D Treatment - Volume-Based (A a water quality volume (Acre-Feet): from Step 1	1+2+3) tion management? If -LID Treatment for Volume-Based, No eatment neede onal Method) Flow sity)	LID compliant, che i yes, proceed to using Sar on-LID Treatment d = Runoff Coefficient x Raint 0.20 i 0.01 A _{AT} 0.95 c 0.00 cfs / = Area x Maximized Deten	fall Intensity x Area	A _{LIDC} /Α _τ *200 = in Step 4 : 0.01 0.02	194.8 201.4 201.4 Table D-2c Rainfall Roseville i Sacramento i Folsom i	pts A _{AT} I _A IA Intensity 0.20 in/hr 0.18 in/hr 0.20 in/hr

Obtain P_0 : Maximized Detention Volume from figures E-1 to E-4 in Appendix E of this manual using I_A from Step 2. 0.06 P_0 Calculate treatment volume (acre-ft): Treatment volume = A x (P₀ / 12) 0.00 Γ Acre-Feet

v06232012

Name of Drainage Shed: A6				Fill in Blue Highlighted boxes	
Location of project: Folsom					
Step 1 - Open Space and Pervious Area Credits	5				
Is your project within the drainage area of a common drainage plan that	at includes open space	? If not, skip to 1 b.			
1 a. Common Drainage Plan Area			0 acres	A _{CDP}	
Common Drainage Plan Open Space (Off-project)			0 acres	A _{os}	see area evample
a. Natural storage reservoirs and drainage corridors			0 acres		bolow
b. Buffer zones for natural water bodies			0 acres		DEIOW
c. Natural areas including existing trees, other vegetation, a	and soil		0 acres		
d. Common landscape area/park			0 acres		
e. Regional Flood Control/Drainage basins			0 acres		
1 b. Project Drainage Shed Area (Total)		[0.31 acres	A	
Project-Specific Open Space (In-project, communal**)			0.07 acres	A _{PSOS}	
a. Natural storage reservoirs and drainage corridors			0.00 acres		
b. Buffer zones for natural water bodies			0.00 acres		ana araa ayamnia
c. Natural areas including existing trees, other vegetation, a	and soil		0.00 acres		see area example
d. Landscape area/park			0.07 acres		below
e. Flood Control/Drainage basins			0.00 acres		
** Doesn't include impervious areas within individual lots an	nd surrounding indiv	vidual units. That is account	ed for below usin	g Form D-1a in Step 2.	
Area with Runoff Reduction Potential	A - A _{PSOS} =		0.24 acres	A _T	
	1000				
Assumed Initial Impervious Fraction	A _T / A =		0.77	1	
Open Space & Pervious Area LID Credit (Step 1)					
(A _{OS} /A _{CE}	$_{DP}+A_{PSOS}/A)x100 =$		23 pts		





Step 2 - Runoff Reduction Credits						
Runoff Reduction Treatments	Impervious Area Managed		Efficienc Factor	у	Effective Area Managed (A _C)	
Porous Pavement:	Ŭ					
Option 1: Porous Pavement (see Fact Sheet, excludes porous pavement used in Option 2)	0	acres	x	=	0.000	acres
Option 2: Disconnected Pavement use Fo (see Fact Sheet, excludes, porous pavement used in Option 1)	orm D-2a for credits			*	0.00	acres
Landscaping used to Disconnect Pavement (see Fact Sheet)	0.0000	acres		=	0.00	acres
Disconnected Roof Drains (see Fact Sheet and/or Table D-2b for summary of requirements)	0.09	acres		=	0.09	acres
Ecoroof (see Fact Sheet)	0	acres		=	0.00	acres
Interceptor Trees use Form D-2b for credits (see Fact Sheet)	·			•	0.00	acres
Total Effective Area Managed by Runoff Reduction Measu	ires		A _C		0.09	acres
Runoff Reduction Credit (Step 2)			(A _C / A _T)*100 =	38	pts

Table D-2a			Tab	ole D-2b	
Porous Pavement Type Cobblestone Block Pavement Pervious Concrete/Asphalt Modular Block Pavement & Reinforced Grass Pavement	Efficiency Multiplier 0.40 0.60 0.75 1.00		Maximum roof size ≤ 3,500 sq ft ≤ 5,000 sq ft ≤ 7,500 sq ft ≤ 10,000 sq ft	Minimu dista	m travel ance 21 ft 24 ft 28 ft 32 ft
Form D-2a: Disconnected Pavement	Worksheet				
See Fact Sheet for more information regarding Disc	onnected Pavement cr	edit guidelines	_	_	Effective Area Managed (A $_{\rm C}$)
Pavement Draining to Porous Pavement					
2. Enter area draining onto Porous Pavement			0.00	acres	Box K1
3. Enter area of Receiving Porous Pavement (excludes area entered in Step 2 under Porous 4. Ratio of Areas (Box K1 / Box K2)	Pavement)		0.00	acres	Box K2 Box K3
5. Select multiplier using ratio from Box K3 and	enter into Box K4	Multipline			
Ratio is ≤ 0.5 Ratio is ≥ 0.5 and < 1.0 Ratio is > 1.0 and < 1.5 Ratio is > 1.5 and < 2.0		1.00 0.83 0.71 0.55	1		Box K4
6. Enter Efficiency of Porous Pavement (see t	able below)				Box K5
Porous Pavement Type	Efficiency Multiplier				
Cobblestone Block Pavement	0.40				
Asphalt Pavement	0.60				
Modular Block Pavement Porous Gravel Pavement	0.75				
Reinforced Grass Pavement 7. Multiply Box K2 by Box K5 and enter into Bo	1.00 0x K6		0.00	acres	Box K6
Multiply Boxes K1 K4, and K5 and enter the	rocult in Roy K7		0.00	20705	Pox K7
 Add Box K6 to Box K7 and multiply by 60%. This is the amount of area credit to enter into the second s	and enter the Result in "Disconnected Pay	t in Box K8 vement" Box of Form D-2	0.00		0.00 acres
Form D-2b: Interceptor Tree Workshe	et				
See Fact Sheet for more information regarding Inter	ceptor Tree credit guid	lelines			
New Evergreen Trees 1. Enter number of new evergreen trees that q	ualify as Interceptor ⁻	Trees in Box L1.	tree	es Box L1	
2. Multiply Box L1 by 200 and enter result in E	lox L2		0 sq. f	it. Box L2	
New Deciduous Trees	ualify as Interceptor	Trees in Box I.3	4 tree	s Box 13	
 Multiply Box L3 by 100 and enter result in B 	ox L4		400 sq. f	it. Box L4	
Existing Tree Canopy					
5. Enter square footage of existing tree canopy	r that qualifies as Exi	sting Tree canopy in Box L5.	0 sq. f	t. Box L5	
6. Multiply Box L5 by 0.5 and enter the result in	n Box L6		0 sq. f	t. Box L6	
Total Interceptor Tree EAM Credits					
Add Boxes L2, L4, and L6 and enter it into Box	L7		400 sq. f	t. Box L7	
Divide Box L7 by 43,560 and multiply by 20% to This is the amount of area credit to enter into th	o get effective area n le "Interceptor Trees"	nanaged and enter result in Box L8 ' Box of Form D-2	0.00 acre	es Box L8	

Capture and Use Credits							
Impervious Area Managed by Rain barro	els, Cisterns, and a	utomatically-emptied	systems		_		
(see Fact Sheet)		- enter gallons	s, for simple rain barrels			0.00	acres
Automated-Control Capture and Use Sy	ystem				_		
(see Fact Sheet, then enter impervious area ma	anaged by the system)				L	0.00	acres
Bioretention/Infiltration Credits							
Impervious Area Managed by Bioretenti	tion BMPs	Bioretention Area	405 sq ft				
(see Fact Sneet)		Ponding Depth, inches	12 inches		Г	0.14	acres
		<u> </u>					
Impervious Area Managed by Infiltration	n BMPs						
(see Fact Sheet)		Drawdown Time, hrs	drawdown_hrs_ir	nf			
		Soli Inilitation Rate, In/III	soil_ini_rate		-		
Sizing	g Option 1:	Capture Volume, acre-ft	0.00 capture_vol_inf			0.00	acres
Sizino	g Option 2: Infiltration	n BMP surface area, sq ft	0 soil surface area	a	Г	0.00	acres
, and the second s		· · · -			-	<u>_</u>	
	Basin or trench?		approximate BMP depth	0.00 ft			
Impervious Area Managed by Amended	Soil or Mulch Beds	S			F	0.00	
(see Fact Sneet)	Muid	ned inititration Area, sq it	muicn_area		L	0.00	acres
Total Effective Area Managed by Capture-	-and-Use/Bioretentic	on/Infiltration BMPs				0.14	A _{LIDc}
Runoff Management Credit (Step 3)				A _{LIDC} /J	A _T *200 =	115.6	pts
Runoff Management Credit (Step 3)				A _{LIDC} /	A _T *200 =	115.6	pts
Runoff Management Credit (Step 3) Total LID Credits (Step 1+2+	+3) LID) compliant, che	ck for treatment s	مر _{کت A} رنم izing in S	ے میڑ*200 = اندون 4	115.6 176.4	pts
Runoff Management Credit (Step 3) Total LID Credits (Step 1+2+ Does project require hydromodification m	<mark>+3) LID</mark> nanagement? If yes) compliant, che , proceed to using Sac	eck for treatment s снм.	A _{LID} ر/، <mark>izing in S</mark>		115.6 176.4	pts
Runoff Management Credit (Step 3) Total LID Credits (Step 1+2+ Does project require hydromodification m	+3) LID nanagement? If yes) compliant, che , proceed to using Sad	ck for treatment s	مراکع izing in S	L A _T *200 = Citep 4	115.6 176.4	pts
Runoff Management Credit (Step 3) Total LID Credits (Step 1+2+ Does project require hydromodification m Adjusted Area for Flow-Based, Non-LID Tr	+3) LID nanagement? If yes reatment) compliant, che , proceed to using Sac	eck for treatment s снм. А _т -А _с	A _{LIDC} /	L A _T *200 = Ctep 4 0.01	115.6 176.4	pts
Runoff Management Credit (Step 3) Total LID Credits (Step 1+2+ Does project require hydromodification m Adjusted Area for Flow-Based, Non-LID Tr Adjusted Impervious Fraction of A for Vol	+3) LID nanagement? If yes reatment lume-Based, Non-LI) compliant, che , proceed to using Sat D Treatment	<mark>еск for treatment s</mark> снм. А _т - А _с А	A_{LIDO}	L A _T *200 = 0.01 0.03	115.6 176.4	pts
Runoff Management Credit (Step 3) Total LID Credits (Step 1+2+ Does project require hydromodification m Adjusted Area for Flow-Based, Non-LID Tr Adjusted Impervious Fraction of A for Vol	+3) LID nanagement? If yes reatment lume-Based, Non-LI) compliant, che , proceed to using Sac D Treatment	eck for treatment s снм. Ат-Ас А	$A_{LIDC}/A_{LIDC}/A_{LIDC}$	L A _T *200 = 0.01 0.03	115.6 176.4	pts
Runoff Management Credit (Step 3) Total LID Credits (Step 1+2+ Does project require hydromodification m Adjusted Area for Flow-Based, Non-LID Tr Adjusted Impervious Fraction of A for Vol STOP: No additional treatme	+3) LID nanagement? If yes reatment lume-Based, Non-LI ent needed) compliant, che , proceed to using Sac D Treatment	<mark>еск for treatment s</mark> снм. А _т - А _с А	A _{LIDO} /, izing in S -A _{LIDC} =	L L L L L L L L L L L L L L	115.6 176.4	pts
Runoff Management Credit (Step 3) Total LID Credits (Step 1+2+ Does project require hydromodification m Adjusted Area for Flow-Based, Non-LID Tr Adjusted Impervious Fraction of A for Vol STOP: No additional treatme	+3) LID nanagement? If yes reatment lume-Based, Non-LI rent needed) compliant, che , proceed to using Sac D Treatment	eck for treatment s снм. Ат - Ас А	A _{LIDC} / izing in S -A _{LIDC} =	Step 4 0.01 0.03	115.6 176.4	pts
Runoff Management Credit (Step 3) Total LID Credits (Step 1+2+ Does project require hydromodification m Adjusted Area for Flow-Based, Non-LID Tr Adjusted Impervious Fraction of A for Vol STOP: No additional treatment Treatment - Flow-Based (Rational I	+3) LID nanagement? If yes reatment lume-Based, Non-LI rent needed Method)) compliant, che , proceed to using Sac D Treatment	eck for treatment s снм. Ат - Ас А	A _{LID} (<i>i</i> izing in S -A _{LIDC} = _{AT} / A =	L Step 4 0.01 0.03	115.6 176.4	pts
Runoff Management Credit (Step 3) Total LID Credits (Step 1+2+ Does project require hydromodification m Adjusted Area for Flow-Based, Non-LID Tr Adjusted Impervious Fraction of A for Vol STOP: No additional treatment Treatment - Flow-Based (Rational I treatment flow (cfs):	+3) LID nanagement? If yes reatment lume-Based, Non-LI lent needed Method) Flow = Rt) compliant, che , proceed to using Sac D Treatment unoff Coefficient x Rainf	eck for treatment s снм. Ат - Ас А	A _{LIDC} /, izing in S -A _{LIDC} = _{AAT} / A =	4,*200 = 3tep 4 0.01 0.03	115.6 176.4	pts
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Runoff Management Credit (Step 3) Total LID Credits (Step 1+2+ Does project require hydromodification m Adjusted Area for Flow-Based, Non-LID Tr Adjusted Impervious Fraction of A for Vol STOP: No additional treatment Treatment - Flow-Based (Rational I treatment flow (cfs): value for i in Table D-2c (Rainfall Intensity) ar from Step 3	+3) LID nanagement? If yes reatment lume-Based, Non-LI rent needed Method) Flow = RL	D compliant, che , proceed to using Sac D Treatment unoff Coefficient x Rainf	eck for treatment s cHM. A _T - A _C A	A _{LIDO} /, izing in S -A _{LIDC} =	L Step 4 0.01 0.03 F S F F	115.6 176.4 176.4 Table D-2c Rainfall Roseville i Sacramento i 50som i	pts A _{AT} J _A I
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Runoff Management Credit (Step 3) Total LID Credits (Step 1+2+ Does project require hydromodification m Adjusted Area for Flow-Based, Non-LID Tr Adjusted Impervious Fraction of A for Vol STOP: No additional treatment Treatment - Flow-Based (Rational I Treatment - Flow-Based (Rational I Treatment flow (cfs): value for i in Table D-2c (Rainfall Intensity) ar from Step 3 0.95 Flow = 0.95 * i * A _{AT}	+3) LID nanagement? If yes reatment lume-Based, Non-LI ment needed Method) Flow = Ru	D compliant, che , proceed to using Sad D Treatment Unoff Coefficient x Rainf 0.20 i 0.01 A _{AT} 0.95 c 0.00 cfs	eck for treatment s cHM. A _T - A _C A	A _{LIDC} / izing in S -A _{LIDC} =	4,*200 = [3,tep 4 0.01 0.03 F F F F F F F F F F F F F	115.6 176.4 176.4 Table D-2c Rainfall Roseville i Sacramento i Sacramento i	pts A _{AT} I _A I _A Intensity = 0.20 in/hr = 0.20 in/hr = 0.20 in/hr
Runoff Management Credit (Step 3) Total LID Credits (Step 1+2+ Does project require hydromodification m Adjusted Area for Flow-Based, Non-LID Tr Adjusted Impervious Fraction of A for Vol STOP: No additional treatment Treatment - Flow-Based (Rational I treatment flow (cfs): value for i in Table D-2c (Rainfall Intensity) ar from Step 3 0.95 Flow = 0.95 * i * A _{AT}	+3) LID nanagement? If yes reatment lume-Based, Non-LI ment needed Method) Flow = Ru	D compliant, che , proceed to using Sac D Treatment unoff Coefficient x Rainf 0.20 i 0.01 A _{AT} 0.95 c 0.00 cfs	eck for treatment s cHM. A _T - A _C A	A _{LID} C/ izing in S -A _{LIDC} = _{AT} / A =	L 200 = [3tep 4 0.01 0.03 F F F F F	115.6 176.4 176.4 Table D-2c Rainfall Roseville i Sacramento i Folsom i	pts A _{AT} I _A I _A II
Runoff Management Credit (Step 3) Total LID Credits (Step 1+2+ Does project require hydromodification m Adjusted Area for Flow-Based, Non-LID Tr Adjusted Impervious Fraction of A for Vol STOP: No additional treatment Treatment - Flow-Based (Rational I treatment flow (cfs): value for i in Table D-2c (Rainfall Intensity) ar from Step 3 0.95 Flow = 0.95 * i * A _{AT} Treatment - Volume-Based (ASCE- water quality volume (Acre-Feet):	+3) LID nanagement? If yes reatment lume-Based, Non-LI ment needed Method) Flow = Ru) compliant, che , proceed to using Sac D Treatment unoff Coefficient x Rainf 0.20 i 0.01 A _{AT} 0.95 c 0.00 cfs	eck for treatment s cHM. A _T - A _C A fall Intensity x Area	A _{LID} C/ izing in S -A _{LIDC} = _{AT} / A =	4, *200 = [3 tep 4 0.01 0.03 F F F F F F F F F F F F F	115.6 176.4 176.4 Table D-2c Rainfall Roseville i Sacramento i Sacramento i	pts A _{AT} I _A I _A II
Runoff Management Credit (Step 3) Total LID Credits (Step 1+2+ Does project require hydromodification m Adjusted Area for Flow-Based, Non-LID Tr Adjusted Impervious Fraction of A for Vol STOP: No additional treatment Treatment - Flow-Based (Rational I treatment flow (cfs): value for i in Table D-2c (Rainfall Intensity) ar from Step 3 0.95 Flow = 0.95 * i * A _{AT} Treatment - Volume-Based (ASCE- water quality volume (Acre-Feet):	+3) LID nanagement? If yes reatment lume-Based, Non-LI ment needed Method) Flow = Ru) compliant, che , proceed to using Sac D Treatment unoff Coefficient x Rainf 0.20 ji 0.01 A _{AT} 0.95 c 0.00 cfs	eck for treatment s cHM. A _T - A _C A fall Intensity x Area	ALIDO izing in S -ALIDC = AT / A =	4, *200 = [3 tep 4 0.01 0.03 F F F F F F F F F F F F F	115.6 176.4 176.4 Table D-2c Rainfall Roseville i Sacramento i Sacramento i Solsom i	pts A _{AT} I _A I _A II

Obtain P_0 : Maximized Detention Volume from figures E-1 to E-4 in Appendix E of this manual using I_A from Step 2. Calculate treatment volume (acre-ft): Treatment volume = A x (P₀ / 12) Г

v06232012

0.07

0.00

 P_0

Acre-Feet

Name of Drainage Shed: A7				Fill in Blue Highlighted boxes	3
Location of project: Folsom				3 3	
Step 1 - Open Space and Pervious Area Cree	dits				
Is your project within the drainage area of a common drainage pla	n that includes open space	e? If not, skip to 1 b.			
1 a. Common Drainage Plan Area			0 acres	A _{CDP}	
Common Drainage Plan Open Space (Off-project)			0 acres	A _{os}	see area example
a. Natural storage reservoirs and drainage corridors			0 acres		bolow
b. Buffer zones for natural water bodies			0 acres		DEIOW
c. Natural areas including existing trees, other vegetation	on, and soil		0 acres		
d. Common landscape area/park			0 acres		
e. Regional Flood Control/Drainage basins			0 acres		
1 b. Project Drainage Shed Area (Total)			0.35 acres	А	
Project-Specific Open Space (In-project, communal	**)		0.03 acres	A _{PSOS}	
a. Natural storage reservoirs and drainage corridors			0.00 acres		
b. Buffer zones for natural water bodies			0.00 acres		ana araa ayamala
c. Natural areas including existing trees, other vegetation	on, and soil		0.00 acres		See area example
d. Landscape area/park			0.03 acres		Delow
e. Flood Control/Drainage basins			0.00 acres		
** Doesn't include impervious areas within individual lots	s and surrounding indi	vidual units. That is	accounted for below usin	ig Form D-1a in Step 2.	
Area with Runoff Reduction Potential	A - A _{PSOS} =		0.32 acres	A _T	
			<u>_</u>		
Assumed Initial Impervious Fraction	A _T / A =		0.91	1	
Open Space & Pervious Area LID Credit (Step 1)					
(A _{os}	$/A_{CDP} + A_{PSOS}/A) \times 100 =$		9 pts		





Step 2 - Runoff Reduction Credits						
Runoff Reduction Treatments	Impervious Area Managed		Effi F	iciency actor	Effective Area Managed (A _C)	
Porous Pavement:	-					
Option 1: Porous Pavement (see Fact Sheet, excludes porous pavement used in Option 2)	0	acres	x	=	0.000	acres
Option 2: Disconnected Pavement use For (see Fact Sheet, excludes porous pavement used in Option 1)	orm D-2a for credits				0.00	acres
Landscaping used to Disconnect Pavement (see Fact Sheet)	0.0000	acres		=	0.00	acres
Disconnected Roof Drains (see Fact Sheet and/or Table D-2b for summary of requirements)	0.15	acres		=	0.15	acres
Ecoroof (see Fact Sheet)	0	acres		=	0.00	acres
Interceptor Trees use Form D-2b for credits (see Fact Sheet)	·				0.00	acres
Total Effective Area Managed by Runoff Reduction Measu	ires			A _C	0.15	acres
Runoff Reduction Credit (Step 2)				(A _C / A _T)*100	= 47	pts

	Table D-2a			Table	D-2b	
		Efficiency			Minimu	n travel
	Porous Pavement Type Cobblestone Block Pavement	Multiplier 0.40		Maximum roof size ≤ 3,500 sq ft	dista	n ce 21 ft
	Pervious Concrete/Asphalt	0.60		≤ 5,000 sq ft		24 ft
	Reinforced Grass Pavement	1.00		≤ 10,000 sq ft		32 ft
F f						
Form L	Sheet for more information regarding Disc	WORKSNEEt	t credit auidelines			
					_	Effective Area Managed (A _c)
Paveme	nt Draining to Porous Pavement					
2. Enter	area draining onto Porous Pavement			0.00	acres	Box K1
3. Enter	area of Receiving Porous Pavement			0.00	acres	Box K2
(exclude	s area entered in Step 2 under Porous	Pavement)		0.00		Pox K2
4. Nauo	OFAICES (DOX KT / DOX K2)			0.00		Box N3
5. Selec	t multiplier using ratio from Box K3 and Ratio (Box D)	enter into Box K4	Multiplier			
	Ratio is ≤ 0.5 Ratio is ≥ 0.5 and ≤ 1.0		1.00			Box K4
	Ratio is > 1.0 and < 1.5		0.71	1		Dox Ity
	Ratio is > 1.5 and < 2.0		0.55			
6. Enter	Efficiency of Porous Pavement (see ta	able below)				Box K5
		Efficiency				
	Porous Pavement Type	Multiplier				
	Pervious Concrete	0.60				
	Asphalt Pavement Modular Block Pavement	0.75				
	Porous Gravel Pavement	1.00				
7. Multij	bly Box K2 by Box K5 and enter into Bo	x K6		0.00	acres	Box K6
8 Multi	bly Boxes K1 K4, and K5 and enter the	result in Box K7		0.00	acres	Box K7
o. mana		loodit in Dox iti		0.00	0000	
9. Add I This is th	Box K6 to Box K7 and multiply by 60%, ne amount of area credit to enter into th	and enter the Res e "Disconnected I	sult in Box K8 Pavement" Box of Form D-2			0.00 acres
Form [0-2b: Interceptor Tree Workshe	et				
See Fact	Sheet for more information regarding Inter	ceptor Tree credit g	uidelines			
New Ev	ergreen Trees					
1. Enter	number of new evergreen trees that qu	ualify as Intercept	or Trees in Box L1.	trees	Box L1	
2. Multij	bly Box L1 by 200 and enter result in B	ox L2		0 sq. ft.	Box L2	
3. Enter	number of new deciduous trees that q	ualify as Intercept	or Trees in Box L3.	4 trees	Box L3	
4. Multij	bly Box L3 by 100 and enter result in Bo	ox L4		400 sq. ft.	Box L4	
Existing	Tree Canopy					
C. Cata		Al 4			D 15	
5. Enter	square loolage of existing tree carlopy	that qualifies as i	Existing Thee canopy in Box L3.	0 sq. it.	BOX LS	
6. Multij	oly Box L5 by 0.5 and enter the result in	Box L6		0 sq. ft.	Box L6	
Total In	terceptor Tree EAM Credits					
Add Box	es L2, L4, and L6 and enter it into Box	L7		400 sq. ft.	Box L7	
Divide B	ox L7 by 43,560 and multiply by 20% to	get effective are	a managed and enter result in Box L8	0.00 acres	Box L8	
This is the	ne amount of area credit to enter into th	e "Interceptor Tre	es" Box of Form D-2			

Ston 2. Dunoff Monoromout C	an allen						
Step 3 - Runoff Management C	redits						
Impervious Area Managed by Rain	n barrels, Cisterns, and	automatically-emptied s	systems				
(see Fact Sheet)		- enter gallons,	, for simple rain barrels			0.00	acres
Automated-Control Capture and L	Use System						
(see Fact Sheet, then enter impervious a	area managed by the system)					0.00	acres
Bioretention/Infiltration Credits	S						
Impervious Area Managed by Bio	retention BMPs	Bioretention Area	470 sq ft				
(see Fact Sheet)		Subdrain Elevation	8 inches		-	0.16	
		Ponding Depth, inches	12 Inches			0.10	acres
Impervious Area Managed by Infil	Itration BMPs						
(see Fact Sheet)		Drawdown Time, hrs	drawdown_hrs_inf	:			
		Soil Infiltration Rate, in/hr	soil_inf_rate				
	Sizing Option 1:	Capture Volume, acre-ft	0.00 capture_vol_inf			0.00	acres
	Sizing Option 2: Infiltra	tion BMP surface area, sq ft	0 soil surface area			0.00	acres
	0.1						
	Basin or trench?		approximate BMP depth	0.00 ft			
Impervious Area Managed by Ame	ended Soil or Mulch Be	ds	mulah araa		<u> </u>	0.00	
(see Fact Sneet)	M	uiched Infiltration Area, sq ft	muicn_area			0.00	acres
T-1-1-5%					_	0.40	•
Total Effective Area Managed by Ca	pture-and-Use/Bioreten	ition/infiltration BMPs				0.16	A _{LIDc}
Runoff Management Credit (Step 3)				A _{LIDC} /A	r*200 =	100.6	pts
Does project require hydromodificat	tion management? If yo	es, proceed to using Sac	:нм.	۸ – L	0.01		
Adjusted Area for Flow-Based, Non-	·LID Treatment		AT - AC -	ALIDC -	0.01		AT AT
Adjusted Impervious Fraction of A f	or Volume-Based, Non-	LID Treatment	A _A	- A =	0.02		I _A
STOP: No additional tre	atment needed						
a Treatment - Flow-Based (Ratio	onal Method)			_	_	_	_
e treatment flow (cfs):	Flow =	D ((O (C)) D) (
		Runott Coefficient x Rainta	all Intensity x Area				
unlus for i in Table D.O. (Dainfall laters	34- A		all Intensity x Area		Ta	able D-2c	Intencity
value for i in Table D-2c (Rainfall Intens	sity)		all Intensity x Area		Ta	able D-2c Rainfall eville i :	Intensity
value for i in Table D-2c (Rainfall Intens A _{AT} from Step 3	sity)	0.20]i	all Intensity x Area		Ta Ros Sac	able D-2c Rainfall eville i : ramento i :	Intensity = 0.20 in/hr = 0.18 in/hr
value for i in Table D-2c (Rainfall Intens $\Lambda_{\rm AT}$ from Step 3	sity)		all Intensity x Area		Ta Ros Sac Fols	able D-2c Rainfall eville i : ramento i : som i :	Intensity = 0.20 in/hr = 0.18 in/hr = 0.20 in/hr
value for i in Table D-2c (Rainfall Intens A _{AT} from Step 3 0.95	sity)	0.20 i	all Intensity x Area		Ta Ros Sac Fols	able D-2c Rainfall eville i : ramento i : som i :	Intensity 0.20 in/hr 0.18 in/hr 0.20 in/hr
value for i in Table D-2c (Rainfall Intens A _{AT} from Step 3 0.95 Flow = 0.95 * i * A _{AT}	sity)	0.20 i 0.01 A _{AT} 0.95 C 0.00 cfs	all Intensity x Area		Ta Ros Sac Fols	able D-2c Rainfall eville i s ramento i s som i s	Intensity = 0.20 in/hr = 0.18 in/hr = 0.20 in/hr
value for i in Table D-2c (Rainfall Intens A _{AT} from Step 3 0.95 Flow = 0.95 * i * A _{AT}	sity)	0.20 i 0.01 A _{AT} 0.95 C 0.00 cfs	all Intensity x Area		Ta Ros Sac Fols	able D-2c Rainfall eville i : ramento i : som i :	Intensity = 0.20 in/hr = 0.18 in/hr = 0.20 in/hr
value for i in Table D-2c (Rainfall Intens A _{AT} from Step 3 0.95 Flow = 0.95 * i * A_{AT}	sity)	0.20 i 0.01 A _{AT} 0.95 C 0.00 cfs	all Intensity x Area		Ta Ros Sac Fols	tble D-2c Rainfall eville i : ramento i : com i :	Intensity = 0.20 in/hr 0.18 in/hr = 0.20 in/hr
value for i in Table D-2c (Rainfall Intens A _{AT} from Step 3 0.95 Flow = 0.95 * i * A _{AT} b Treatment - Volume-Based (A	sity)	0.20 i 0.01 A _{AT} 0.95 c 0.00 cfs	all Intensity x Area		Ta Ros Sac Fols	tble D-2c Rainfall eville i = ramento i = com i =	Intensity = 0.20 in/hr = 0.18 in/hr = 0.20 in/hr
value for i in Table D-2c (Rainfall Intens A _{AT} from Step 3 0.95 Flow = 0.95 * i * A _{AT} <u>D Treatment - Volume-Based (A</u>	sity)	0.20 i 0.01 AAT 0.95 C 0.00 cfs	ion Volume (P)		Ta Ros Sac Fols	nble D-2c Rainfall eville i a ramento i a com i a	Intensity = 0.20 in/hr 0.18 in/hr = 0.20 in/hr
value for i in Table D-2c (Rainfall Intens A _{AT} from Step 3 0.95 Flow = 0.95 * i * A _{AT} <u>o Treatment - Volume-Based (A</u> e water quality volume (Acre-Feet):	sity)	Auron Coefficient x Rainf 0.20 i 0.01 A _{AT} 0.95 C 0.00 cfs Area x Maximized Detenti	ion Volume (P ₀)		Ta Ros Sac Fols	tble D-2c Rainfall eville i a ramento i a com i a	Intensity = 0.20 in/hr 0.18 in/hr = 0.20 in/hr

Obtain P_0 : Maximized Detention Volume from figures E-1 to E-4 in Appendix E of this manual using I_A from Step 2. 0.06 P_0 Calculate treatment volume (acre-ft): Treatment volume = A x (P₀ / 12) 0.00 Γ Acre-Feet

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Appendix D-2: Commercial Sites: Low Impact Deve	elopment (L	LID) Credits and Treatment BM	IP Sizing Ca	lculations	
Name of Drainage Shed: A8			Fill in	n Blue Highlighted boxes	
Location of project: Folsom					
Step 1 - Open Space and Pervious Area Credits					
Is your project within the drainage area of a common drainage plan that inclu	udes open space	e? If not, skip to 1 b.			
1 a. Common Drainage Plan Area		0 a	cres	A _{CDP}	
		· · · · · · · · · · · · · · · · · · ·			
Common Drainage Plan Open Space (Off-project)		0 ad	cres	A _{os}	see area example
a. Natural storage reservoirs and drainage corridors		0 a	cres		below
b. Buffer zones for natural water bodies		0 a	cres		below
c. Natural areas including existing trees, other vegetation, and s	oil	0 ad	cres		
d. Common landscape area/park		0 a	cres		
e. Regional Flood Control/Drainage basins		0 a	cres		
1 b. Project Drainage Shed Area (Total)	I	0.30 a	cres	A	
Project-Specific Open Space (In-project, communal**)		0.03 ad	cres	A _{PSOS}	
a. Natural storage reservoirs and drainage corridors		0.00 a	cres		
b. Buffer zones for natural water bodies		0.00 a	cres		soo aroa oyamnlo
c. Natural areas including existing trees, other vegetation, and s	oil	0.00 at	cres		below
d. Landscape area/park		0.03 a	cres		below
e. Flood Control/Drainage basins		0.00 a	cres		
** Doesn't include impervious areas within individual lots and sur	rrounding indiv	vidual units. That is accounted for bel	low using Form	n D-1a in Step 2.	
Area with Runoff Reduction Potential	A - A _{PSOS} =	0.27 a	cres	A _T	
		<u>_</u>			
Assumed Initial Impervious Fraction	$A_T / A =$	0.90		1	
· · · · · · · · · · · · · · · · · · ·	·				
Open Space & Pervious Area LID Credit (Step 1)					
(A _{OS} /A _{CDP} +A _F	_{PSOS} /A)x100 =	10 pt	ts		





Step 2 - Runoff Reduction Credits						
Runoff Reduction Treatments	Impervious Area Managed		Efficiency Factor		Effective Area Managed (A _C)	
Porous Pavement:	Ū					
Option 1: Porous Pavement (see Fact Sheet, excludes porous pavement used in Option 2)	0	acres	x	_ = [0.000	acres
Option 2: Disconnected Pavement use Fo (see Fact Sheet, excludes porous pavement used in Option 1)	orm D-2a for credits		,	.	0.00	acres
Landscaping used to Disconnect Pavement (see Fact Sheet)	0.0000	acres		=	0.00	acres
Disconnected Roof Drains (see Fact Sheet and/or Table D-2b for summary of requirements)	0.12	acres		= [0.12	acres
Ecoroof (see Fact Sheet)	0	acres		=	0.00	acres
Interceptor Trees use Form D-2b for credits (see Fact Sheet)	· · · · · · · · · · · · · · · · · · ·		,	- [0.00	acres
Total Effective Area Managed by Runoff Reduction Measu	ires		A _C	[0.12	acres
Runoff Reduction Credit (Step 2)			A)	A _C / A _T)*100 =	45	pts

Table D-2a			Table	e D-2b	
	Efficiency			Minimu	m travel
Porous Pavement Type	Multiplier		Maximum roof size	dista	ance
Cobblestone Block Pavement	0.40		≤ 3,500 sq ft		21 ft
Pervious Concrete/Asphalt Modular Block Pavement &	0.60		≤ 5,000 sq π ≤ 7,500 sq ft		24 π 28 ft
Reinforced Grass Pavement	1.00		≤ 10,000 sq ft		32 ft
Form D-2a: Disconnected Pavement	Worksheet				
See Fact Sheet for more information regarding Disc	connected Pavement credit guidelines	3			Effective Area Mana
Pavement Draining to Porous Pavement					
2. Enter area draining onto Porous Pavement			0.00	acres	Box K1
3. Enter area of Receiving Porous Pavement			0.00	acres	Box K2
(excludes area entered in Step 2 under Porous	Pavement)		0.00		Box K3
. Nalio of Alcas (Dox N17 Dox N2)			0.00		Box No
 Select multiplier using ratio from Box K3 and Ratio (Box D) 	enter into Box K4 Mu	Iltiplier			
Ratio is ≤ 0.5		1.00			Daw K4
Ratio is > 0.5 and < 1.0 Ratio is > 1.0 and < 1.5		0.83	1		Box K4
Ratio is > 1.5 and < 2.0		0.55			
6. Enter Efficiency of Porous Pavement (see t	able below)				Box K5
					201110
Porous Pavement Type	Multiplier				
Pervious Concrete	0.40				
Asphalt Pavement	0.00				
Modular Block Pavement	0.75				
Reinforced Grass Pavement	1.00				
7. Multiply Box K2 by Box K5 and enter into Bo	x K6		0.00	acres	Box K6
Multiply Dover K1 K4 and K5 and a 1	regult in Pay 1/7		0.00	00700	Boy K7
b. Wulliply boxes K 1,K4, and K5 and enter the 	result IN BOX K7		0.00	acres	B0X K/
9. Add Box K6 to Box K7 and multiply by 60%,	and enter the Result in Box K8				0.00 acres
his is the amount of area credit to enter into th	e "Disconnected Pavement" Box o	of Form D-2			
Form D-2b: Interceptor Tree Workshe	et				
See Fact Sheet for more information regarding Inter	ceptor Tree credit guidelines				
New Evergreen Trees 1. Enter number of new evergreen trees that q	ualify as Interceptor Trees in Box I	L1.	trees	Box L1	
2. Multiply Box L1 by 200 and enter result in E	iox L2		0 sq. ft.	Box L2	
New Deciduous Trees					
 Enter number of new deciduous trees that q 	uality as Interceptor Trees in Box I	L3.	4 trees	Box L3	
4. Multiply Box L3 by 100 and enter result in B	ox L4		400 sq. ft.	Box L4	
Existing Tree Canopy					
E Enter equere frataria of a 1 1	that qualifies as Fuilt 1. T	nonvin Devil C			
 Enter square lootage of existing tree canopy 	that qualities as Existing Tree car	hopy in Box L5.	U sq. ft.	Box L5	
Multiply Box L5 by 0.5 and enter the result in	n Box L6		0 sq. ft.	Box L6	
Total Interceptor Tree EAM Credits					
Add Boxes L2, L4, and L6 and enter it into Box	17		400 sq ft	Box I 7	
			100 aq. n.	DOXEN	
Divide Box L7 by 43,560 and multiply by 20% to	b get effective area managed and	enter result in Box L8	0.00 acres	Box L8	

		•	
This is the amount of area	a credit to enter into the	e "Interceptor Tree:	s" Box of Form D-2

Capture and Use Credits Impervious Area Managed by Rain barrels,	Cisterns, and automatically-emptied	systems			
(F+ Ch+)					
(see Fact Sheet)	- enter gallon	ns, for simple rain barrels		0.00 acres	
Automated-Control Capture and Use Syste	m				
(see Fact Sheet, then enter impervious area manage	ed by the system)			0.00 acres	
Bioretention/Infiltration Credits					
Impervious Area Managed by Bioretention	BMPs Bioretention Area	405 sq ft			
(see Fact Sheet)	Ponding Depth, inches	12 inches		0.14 acres	
	-				
Impervious Area Managed by Infiltration Bi	MPs Drawdown Timo, bro	drawdown bro inf			
	Soil Infiltration Rate, in/hr	soil_inf_rate			
Sizing Op	otion 1: Capture Volume, acre-ft	0.00 capture_vol_inf		0.00 acres	
Sizing Op	otion 2: Infiltration BMP surface area, sq ft	0 soil_surface_area		0.00 acres	
Bas	sin or trench?	approximate BMP depth 0.00 ft			
Impervious Area Managed by Amended So	il or Mulch Beds			0.00	
(see Fact Sheet)	Mulched Infiltration Area, sq ft	mulch_area		0.00 acres	
Total Effective Area Managed by Capture-and	I-Use/Bioretention/Infiltration BMPs			0.14 A _{LIDc}	
Dur off Management Crodit (Oten 2)			(4. *000	400 7	
Runon Management Credit (Step 3)		ALI	₀₀ /A _T 200 -	102.7 pts	
Does project require hydromodification mana	ID COMPILANT, Che igement? If yes, proceed to using Sa	acHM.	Step 4	157.8	
Adjusted Area for Flow-Based, Non-LID Treat	ment	$A_T - A_C - A_{LIDC} =$	0.01	A _{AT}	
Adjusted Impervious Fraction of A for Volume-Based, Non-LID Treatment		A / A -	0.00		
Aujusted impervious Praction of A for Volume	· · · · · · · · · · · · · · · · · · ·	AT / A -	0.03	IA	
STOP: No additional treatmen	t needed	7 _{AT} / A -	0.03	I _A	
STOP: No additional treatmen	t needed	7AT / 7	0.03	I _A	_
STOP: No additional treatmen	t needed hod)	nat / n	0.03	I _A	_
STOP: No additional treatmen	t needed hod) Flow = Runoff Coefficient x Rain	nfall Intensity x Area		• D-2c	_
STOP: No additional treatmen Treatment - Flow-Based (Rational Met treatment flow (cfs): ralue for i in Table D-2c (Rainfall Intensity)	t needed hod) Flow = Runoff Coefficient x Rain	nfall Intensity x Area	0.03	D-2c Rainfall Intensi	ty
STOP: No additional treatmen Treatment - Flow-Based (Rational Met treatment flow (cfs): ralue for i in Table D-2c (Rainfall Intensity) Trom Step 3	t needed hod) Flow = Runoff Coefficient x Rain 0.20]i	nfall Intensity x Area	0.03 Table Rosevil Sacran	• D-2c Rainfall Intensis le i = 0.20 vento i = 0.18	ty in/hr in/hr
STOP: No additional treatmen	t needed hod) Flow = Runoff Coefficient x Rain 0.20]i 0.01]A _{AT}	nfall Intensity x Area	0.03 Table Rosevil Sacran Folsom	2 D-2c Rainfall Intensi le i = 0.20 nento i = 0.18 i = 0.20	ty in/hr in/hr in/hr
STOP: No additional treatmen	t needed hod) Flow = Runoff Coefficient x Rain 0.20]i 0.01]A _{AT} 0.95]c	nfall Intensity x Area	0.03 Table Rosevil Sacram Folsom	2 D-2c Rainfall Intensi le i = 0.20 tento i = 0.18 i = 0.20	ty in/hr in/hr in/hr
STOP: No additional treatmen Treatment - Flow-Based (Rational Met treatment flow (cfs): value for i in Table D-2c (Rainfall Intensity) vr from Step 3 0.95 Flow = 0.95 * i * A _{AT}	<u>t needed</u> hod) Flow = Runoff Coefficient x Rain 0.20]i 0.01]A _{AT} 0.95]c 0.00]cfs	nfall Intensity x Area	0.03 Table Rosevil Sacrarr Folsom	: D-2c Rainfall Intensi le i = 0.20 i = 0.20	ty in/hr in/hr in/hr
STOP: No additional treatmen Treatment - Flow-Based (Rational Met treatment flow (cfs): ralue for i in Table D-2c (Rainfall Intensity) from Step 3 D.95 Flow = 0.95 * i * A _{AT}	t needed hod) Flow = Runoff Coefficient x Rain 0.20 i 0.01 A _{AT} 0.95 c 0.00 cfs	nfall Intensity x Area	0.03 Table Rosevil Sacran Folsom	2 D-2c Rainfall Intensis le i = 0.20 i = 0.20	ty in/hr in/hr in/hr
STOP: No additional treatmen Treatment - Flow-Based (Rational Met treatment flow (cfs): ralue for i in Table D-2c (Rainfall Intensity) AT from Step 3 0.95 Flow = 0.95 * i * A _{AT}	t needed hod) Flow = Runoff Coefficient x Rain 0.20]i 0.01]A _{AT} 0.95]c 0.00]cfs	nfall Intensity x Area	0.03 Table Rosevil Sacrarr Folsom	2 D-2c Rainfall Intensi le i = 0.20 i = 0.20	ty in/hr in/hr in/hr
STOP: No additional treatmen Treatment - Flow-Based (Rational Met treatment flow (cfs): value for i in Table D-2c (Rainfall Intensity) s T from Step 3 0.95 Flow = 0.95 * i * A _{AT} Treatment - Volume-Based (ASCE-WE	t needed hod) Flow = Runoff Coefficient x Rain 0.20 i 0.01 A _{AT} 0.95 c 0.00 cfs	nfall Intensity x Area	0.03 Table Rosevil Sacran Folsom	D-2c Rainfall Intensi le i = 0.20 nento i = 0.20 i = 0.20	ty in/hr in/hr in/hr
STOP: No additional treatmen Treatment - Flow-Based (Rational Met treatment flow (cfs): value for i in Table D-2c (Rainfall Intensity) AT from Step 3 0.95 Flow = 0.95 * i * A _{AT} Treatment - Volume-Based (ASCE-WE water quality volume (Acre-Feet):	t needed hod) Flow = Runoff Coefficient x Rain 0.20 i 0.01 A _{AT} 0.95 c 0.00 cfs F) WQV = Area x Maximized Deter	nfall Intensity x Area	0.03 Table Rosevil Sacran Folsom	• D-2c Rainfall Intensi le i = 0.20 i = 0.20	ty in/hr in/hr in/hr

Obtain P_0 : Maximized Detention Volume from figures E-1 to E-4 in Appendix E of this manual using I_A from Step 2. Calculate treatment volume (acre-ft): Treatment volume = A x (P₀ / 12)

v06232012

0.07

0.00

Γ

 P_0

Acre-Feet

Name of Drainage Shed: A9				Fill in Blue Highlighted box	es
Location of project: Folsom				0 0	
Step 1 - Open Space and Pervious Area Co	redits				
Is your project within the drainage area of a common drainage	plan that includes open space	e? If not, skip to 1 b.			
1 a. Common Drainage Plan Area			0 acres	A _{CDP}	
Common Drainage Plan Open Space (Off-project))		0 acres	A _{os}	see area example
a. Natural storage reservoirs and drainage corridors			0 acres		below
b. Buffer zones for natural water bodies			0 acres		Delow
c. Natural areas including existing trees, other vegeta	ation, and soil		0 acres		
d. Common landscape area/park			0 acres		
e. Regional Flood Control/Drainage basins			0 acres		
1 b. Project Drainage Shed Area (Total)			0.23 acres	А	
Project-Specific Open Space (In-project, commun	nal**)		0.06 acres	A _{PSOS}	
a. Natural storage reservoirs and drainage corridors			0.00 acres		
b. Buffer zones for natural water bodies			0.00 acres		
c. Natural areas including existing trees, other vegeta	ation, and soil		0.00 acres		see area example
d. Landscape area/park			0.06 acres		below
e. Flood Control/Drainage basins			0.00 acres		
** Doesn't include impervious areas within individual	lots and surrounding indi	vidual units. That	is accounted for below using	Form D-1a in Step 2.	
Area with Runoff Reduction Potential	A - A _{PSOS} =		0.17 acres	A _T	
			<u>_</u>		
Assumed Initial Impervious Fraction	A _T / A =		0.74	I	
			<u>_</u>		
Open Space & Pervious Area LID Credit (Step 1)					
A)	AOS/ACDP+APSOS/A)x100 =		26 pts		





Step 2 - Runoff Reduction Credits						
Runoff Reduction Treatments	Impervious Area Managed		Effici Fac	ency ctor	Effective Area Managed (A _C)	
Porous Pavement:	0					
Option 1: Porous Pavement (see Fact Sheet, excludes porous pavement used in Option 2)	0.17	acres	x	0.4 =	0.068	acres
Option 2: Disconnected Pavement use For (see Fact Sheet, excludes porous pavement used in Option 1)	rm D-2a for credits				0.00	acres
Landscaping used to Disconnect Pavement (see Fact Sheet)	0.2300	acres		=	0.23	acres
Disconnected Roof Drains (see Fact Sheet and/or Table D-2b for summary of requirements)	0	acres		=	0.00	acres
Ecoroof (see Fact Sheet)	0	acres		=	0.00	acres
Interceptor Trees use Form D-2b for credits (see Fact Sheet)					0.00	acres
Total Effective Area Managed by Runoff Reduction Measu	res		A	^N C	0.30	acres
Runoff Reduction Credit (Step 2)				(A _C / A _T)*100	= 175	pts

Table D-2a			Table D-2b			
Porous Pavement Type Cobblestone Block Pavement Pervious Concrete/Asphalt Modular Block Pavement & Reinforced Grass Pavement	Efficiency Multiplier 0.40 0.60 0.75 1.00		Maximum roof size ≤ 3,500 sq ft ≤ 5,000 sq ft ≤ 7,500 sq ft ≤ 10,000 sq ft	Minimu e dist	m travel ance 21 ft 24 ft 28 ft 32 ft	
Form D-2a: Disconnected Pavement	Worksheet					
See Fact Sheet for more information regarding Disc	connected Pavement cre	edit guidelines			Effective Area Managed (A_c)	
Pavement Draining to Porous Pavement						
2. Enter area draining onto Porous Pavement			0.00	acres	Box K1	
 Enter area of Receiving Porous Pavement (excludes area entered in Step 2 under Porous Ratio of Areas (Box K1 / Box K2) 	Pavement)		0.00	acres	Box K2 Box K3	
5. Select multiplier using ratio from Box K3 and Ratio (Box D)	enter into Box K4	Multiplier				
Ratio is ≤ 0.5 Ratio is > 0.5 and < 1.0 Ratio is > 1.0 and < 1.5 Ratio is > 1.5 and < 2.0		1.00 0.83 0.71 0.55	1		Box K4	
6. Enter Efficiency of Porous Pavement (see t	able below)				Box K5	
Porous Pavement Type Cobblestone Block Pavement	Efficiency Multiplier 0.40					
Pervious Concrete Asphalt Pavement	0.60					
Modular Block Pavement Porous Gravel Pavement	0.75					
Reinforced Grass Pavement 7. Multiply Box K2 by Box K5 and enter into Bo	1.00 px K6		0.00	acres	Box K6	
8. Multiply Boxes K1,K4, and K5 and enter the	result in Box K7		0.00	acres	Box K7	
9. Add Box K6 to Box K7 and multiply by 60%, This is the amount of area credit to enter into th	, and enter the Result ne "Disconnected Pav	in Box K8 ement" Box of Form D-2			0.00 acres	
Form D-2b: Interceptor Tree Workshe	eet	alines				
1. Enter number of new evergreen trees that q	ualify as Interceptor T	rees in Box L1.	tre	es Box L1		
2. Multiply Box L1 by 200 and enter result in E	Box L2		0 sq.	ft. Box L2		
New Deciduous Trees	ualify as Intercenter T	roos in Roy I 2		en Poyl 2		
 Enter number of new deciduous dees that q Multiply Box L3 by 100 and enter result in B 	ox L4	lees in box L3.	0 ue	ft. Box L4		
Existing Tree Capony						
5. Enter square footage of existing tree canopy	y that qualifies as Exis	ting Tree canopy in Box L5.	0 sq.	ft. Box L5		
6. Multiply Box L5 by 0.5 and enter the result in	n Box L6		0 sq.	ft. Box L6		
Total Interceptor Tree EAM Credits						
Add Boxes L2, L4, and L6 and enter it into Box	L7		0 sq.	ft. Box L7		
Divide Box L7 by 43,560 and multiply by 20% to This is the amount of area credit to enter into th	o get effective area m ne "Interceptor Trees"	anaged and enter result in Box L8 Box of Form D-2	0.00 ac	res Box L8		

Capture and Use Credits					
Impervious Area Managed by Rain barrels, Cister	ns, and automatically-emptied	systems			
(see Fact Sheet)	- enter gallons	s, for simple rain barrels		0.00	acres
Automated-Control Capture and Use System					
(see Fact Sheet, then enter impervious area managed by the	system)		Γ	0.00	acres
Piorotontion/Infiltration Crodits			_		
Impervious Area Managed by Bioretention BMPs	Bioretention Area	sq ft			
(see Fact Sheet)	Subdrain Elevation	inches	-		
	Ponding Depth, inches	inches		0.00	acres
Impervious Area Managed by Infiltration PMPs					
(see Fact Sheet)	Drawdown Time, hrs	drawdown_hrs_inf			
	Soil Infiltration Rate, in/hr	soil_inf_rate			
Sizing Option 1:	Capture Volume, acre-ft	0.00 capture_vol_inf	Ľ	0.00	acres
Sizing Option 2:	Infiltration BMP surface area, sq ft	0 soil_surface_area		0.00	acres
Basin or tr	ench?	approximate BMP depth 0.00	ft		
Impervious Area Managed by Amended Soil or M	ulch Beds				
(see Fact Sheet)	Mulched Infiltration Area, sq ft	mulch_area		0.00	acres
			Π	0.00	^
Total Effective Area Managed by Canture-and-Use/F	ioretention/Infiltration RMPs				Aug.
Total Effective Area Managed by Capture-and-Use/E	ioretention/Infiltration BMPs		L	0.00	ALIDC
Total Effective Area Managed by Capture-and-Use/E Runoff Management Credit (Step 3)	ioretention/Infiltration BMPs	A	L _{IDC} /A _T *200 =	0.0	pts
Total Effective Area Managed by Capture-and-Use/E Runoff Management Credit (Step 3)	ioretention/Infiltration BMPs	P	A _{LIDC} /A _T *200 =	0.0	pts
Total Effective Area Managed by Capture-and-Use/E Runoff Management Credit (Step 3) Total LID Credits (Step 1+2+3)	loretention/Infiltration BMPs	eck for treatment sizing	L A _{LIDC} /A _T *200 =[in Step 4	0.0	PLIDc pts
Total Effective Area Managed by Capture-and-Use/E Runoff Management Credit (Step 3) Total LID Credits (Step 1+2+3) Does project require hydromodification managemen	ioretention/Infiltration BMPs LID compliant, che tt? If yes, proceed to using Sa	еск for treatment sizing снм.	L _{IDC} /A _T *200 =[0.0	Pts
Total Effective Area Managed by Capture-and-Use/E Runoff Management Credit (Step 3) Total LID Credits (Step 1+2+3) Does project require hydromodification management Adjusted Area for Flow-Based Non-I ID Treatment	ioretention/Infiltration BMPs LID compliant, che tt? If yes, proceed to using Sa	еск for treatment sizing снм. Ат - Ас -Анес =	LIDC/A _T *200 =[in Step 4	0.0 0.0 201.4	PLDc pts
Total Effective Area Managed by Capture-and-Use/E Runoff Management Credit (Step 3) Total LID Credits (Step 1+2+3) Does project require hydromodification managemen Adjusted Area for Flow-Based, Non-LID Treatment	ioretention/Infiltration BMPs LID compliant, che tt? If yes, proceed to using Sa	е <mark>ск for treatment sizing</mark> снм. А _т - А _с -А _{LIDC} =	Lupd/At*200 = in Step 4 -0.13	0.0	pts
Total Effective Area Managed by Capture-and-Use/E Runoff Management Credit (Step 3) Total LID Credits (Step 1+2+3) Does project require hydromodification management Adjusted Area for Flow-Based, Non-LID Treatment Adjusted Impervious Fraction of A for Volume-Base	LID compliant, che t? If yes, proceed to using Sa d, Non-LID Treatment	eck for treatment sizing cHM. $A_{T} - A_{C} - A_{LIDC} = A_{AT} / A =$	Luc/A _T *200 = [in Step 4 -0.13 -0.56	0.0 0.0 201.4	Pts A _{AT} I _A
Total Effective Area Managed by Capture-and-Use/E Runoff Management Credit (Step 3) Total LID Credits (Step 1+2+3) Does project require hydromodification managemen Adjusted Area for Flow-Based, Non-LID Treatment Adjusted Impervious Fraction of A for Volume-Base	LID compliant, che t? If yes, proceed to using Sa d, Non-LID Treatment	eck for treatment sizing cHM. $A_{T} - A_{C} - A_{LIDC} = A_{AT} / A =$	ALIDO/AT*200 = in Step 4 -0.13 -0.56	0.0	Pts AAT IA
Total Effective Area Managed by Capture-and-Use/E Runoff Management Credit (Step 3) Total LID Credits (Step 1+2+3) Does project require hydromodification managemen Adjusted Area for Flow-Based, Non-LID Treatment Adjusted Impervious Fraction of A for Volume-Base STOP: No additional treatment new	LID compliant, che LID compliant, che t? If yes, proceed to using Sa d, Non-LID Treatment	eck for treatment sizing cHM. $A_T - A_C - A_{LIDC} = A_{AT} / A =$	Luc/A ₇ *200 = in Step 4 -0.13 -0.56	<u>0.0</u> <u>201.4</u>	Pts AAT IA
Total Effective Area Managed by Capture-and-Use/E Runoff Management Credit (Step 3) Total LID Credits (Step 1+2+3) Does project require hydromodification managemen Adjusted Area for Flow-Based, Non-LID Treatment Adjusted Impervious Fraction of A for Volume-Base STOP: No additional treatment new	LID compliant, che LID compliant, che t? If yes, proceed to using Sa d, Non-LID Treatment	eck for treatment sizing cHM. $A_{T} - A_{C} - A_{LIDC} = A_{AT} / A =$	Lupc/A ₇ *200 = in Step 4 0.13 0.56	0.0	Pts A _{AT} I _A
Total Effective Area Managed by Capture-and-Use/E Runoff Management Credit (Step 3) Total LID Credits (Step 1+2+3) Does project require hydromodification management Adjusted Area for Flow-Based, Non-LID Treatment Adjusted Impervious Fraction of A for Volume-Base STOP: No additional treatment need a Treatment - Flow-Based (Rational Method)	LID compliant, che LID compliant, che tt? If yes, proceed to using Sar d, Non-LID Treatment eded	eck for treatment sizing cHM. $A_T - A_C - A_{LIDC} = A_{AT} / A =$	kupc/Aτ*200 = [in Step 4 0.13 0.56	0.0	pts A _{AT} I _A
Total Effective Area Managed by Capture-and-Use/E Runoff Management Credit (Step 3) Total LID Credits (Step 1+2+3) Does project require hydromodification management Adjusted Area for Flow-Based, Non-LID Treatment Adjusted Impervious Fraction of A for Volume-Based STOP: No additional treatment need a Treatment - Flow-Based (Rational Method) e treatment flow (cfs):	LID compliant, che LID compliant, che tt? If yes, proceed to using Sa d, Non-LID Treatment eded	fall Intensity x Area	kupc/Aτ*200 = [in Step 4 0.13 0.56	0.0 201.4 Table D-2c	pts A _{AT} I _A
Total Effective Area Managed by Capture-and-Use/E Runoff Management Credit (Step 3) Total LID Credits (Step 1+2+3) Does project require hydromodification management Adjusted Area for Flow-Based, Non-LID Treatment Adjusted Impervious Fraction of A for Volume-Based STOP: No additional treatment need a Treatment - Flow-Based (Rational Method) e treatment flow (cfs): value for i in Table D-2c (Rainfall Intensity)	LID compliant, che LID compliant, che t? If yes, proceed to using Sa d, Non-LID Treatment eded Flow = Runoff Coefficient x Raint 0.20]i	fall Intensity x Area	kupc/Aτ*200 = [in Step 4 0.13 0.56	C.00 0.0 201.4 Table D-2c Rainfall	Pts AAT IA
Total Effective Area Managed by Capture-and-Use/E Runoff Management Credit (Step 3) Total LID Credits (Step 1+2+3) Does project require hydromodification management Adjusted Area for Flow-Based, Non-LID Treatment Adjusted Impervious Fraction of A for Volume-Base STOP: No additional treatment need a Treatment - Flow-Based (Rational Method) e treatment flow (cfs): value for i in Table D-2c (Rainfall Intensity)	LID compliant, che LID compliant, che tt? If yes, proceed to using Sa d, Non-LID Treatment eded Flow = Runoff Coefficient x Raint 0.20	fall Intensity x Area	Luc/A₁*200 = [in Step 4 0.13 0.56	0.0 201.4 Table D-2c Rainfall Roseville i :	Pts A _{AT} I _A Intensity = 0.20 in/hr
Total Effective Area Managed by Capture-and-Use/E Runoff Management Credit (Step 3) Total LID Credits (Step 1+2+3) Does project require hydromodification management Adjusted Area for Flow-Based, Non-LID Treatment Adjusted Impervious Fraction of A for Volume-Base STOP: No additional treatment need a Treatment - Flow-Based (Rational Method) e treatment flow (cfs): value for i in Table D-2c (Rainfall Intensity) NaT from Step 3	LID compliant, che LID compliant, che t? If yes, proceed to using Sa d, Non-LID Treatment eded Flow = Runoff Coefficient x Raint 0.20 ji -0.13 A _{AT}	fall Intensity x Area	Luc/A₁*200 = [in Step 4 0.13 0.56	0.0 201.4 Table D-2c Rainfall Roseville i = Sacramento i =	Pts Pts IA IA IA Intensity = 0.20 in/hr 0.18 in/hr
Total Effective Area Managed by Capture-and-Use/E Runoff Management Credit (Step 3) Total LID Credits (Step 1+2+3) Does project require hydromodification managemen Adjusted Area for Flow-Based, Non-LID Treatment Adjusted Impervious Fraction of A for Volume-Base STOP: No additional treatment new a Treatment - Flow-Based (Rational Method) e treatment flow (cfs): value for i in Table D-2c (Rainfall Intensity) Var from Step 3	LID compliant, che LID compliant, che t? If yes, proceed to using Sa d, Non-LID Treatment eded Flow = Runoff Coefficient x Raint 0.20]i -0.13]A _{AT}	Eck for treatment sizing cHM. $A_T - A_C - A_{LIDC} = A_{AT} / A =$ fall Intensity x Area	Luc/A ₇ *200 = in Step 4 -0.13 -0.56	0.0 201.4 Table D-2c Rainfall Roseville i = Sacramento i = Folsom i =	AAT IA IA IA IA IA INTENSITY IO20 in/hr IO20 in/hr IO20 in/hr
Total Effective Area Managed by Capture-and-Use/E Runoff Management Credit (Step 3) Total LID Credits (Step 1+2+3) Does project require hydromodification managemen Adjusted Area for Flow-Based, Non-LID Treatment Adjusted Impervious Fraction of A for Volume-Base STOP: No additional treatment new a Treatment - Flow-Based (Rational Method) e treatment flow (cfs): value for i in Table D-2c (Rainfall Intensity) Vart from Step 3 0.95	LID compliant, che LID compliant, che t? If yes, proceed to using Sar d, Non-LID Treatment eded Flow = Runoff Coefficient x Raint 0.20 ji -0.13 A _{AT} 0.95 c	A eck for treatment sizing cHM. A _T - A _C -A _{LIDC} = A _{AT} / A =	Luc/A ₇ *200 = [in Step 4 	0.0 201.4 Table D-2c Rainfall Roseville Sacramento i = Socramento i =	AAT IA IA IA IA INTENSITY INTENSITY
Total Effective Area Managed by Capture-and-Use/E Runoff Management Credit (Step 3) Total LID Credits (Step 1+2+3) Does project require hydromodification managemen Adjusted Area for Flow-Based, Non-LID Treatment Adjusted Impervious Fraction of A for Volume-Base STOP: No additional treatment neu a Treatment - Flow-Based (Rational Method) e treatment flow (cfs): value for i in Table D-2c (Rainfall Intensity) Var from Step 3 0.95 Flow = 0.95 * i * Aat	LID compliant, che LID compliant, che t? If yes, proceed to using Sa d, Non-LID Treatment eded Flow = Runoff Coefficient x Raint 0.20]i -0.13]A _{AT} 0.95]c -0.02]cfs	A eck for treatment sizing cHM. $A_T - A_C - A_{LIDC} =$ $A_{AT} / A =$ fall Intensity x Area	Luc/A ₇ *200 = [in Step 4 0.13 0.56	0.0 201.4 Table D-2c Rainfall Roseville i = Sacramento i = Folsom i =	AAT IA IA IA IA INTENSITY IO.20 in/hr IO.20 in/hr
Total Effective Area Managed by Capture-and-Use/E Runoff Management Credit (Step 3) Total LID Credits (Step 1+2+3) Does project require hydromodification management Adjusted Area for Flow-Based, Non-LID Treatment Adjusted Impervious Fraction of A for Volume-Based STOP: No additional treatment neuron a Treatment - Flow-Based (Rational Method) a treatment flow (cfs): value for i in Table D-2c (Rainfall Intensity) war from Step 3 0.95 Flow = 0.95 * i * A _{AT}	LID compliant, che LID compliant, che t? If yes, proceed to using Sar d, Non-LID Treatment eded Flow = Runoff Coefficient x Raint 0.20 ji -0.13 A _{AT} 0.95 c -0.02 cfs	A eck for treatment sizing cHM. A _T - A _C -A _{LIDC} = A _{AT} / A =	Luc/A ₇ *200 = [in Step 4 	0.0 201.4 Table D-2c Rainfall Roseville i = Sacramento i = Solori i =	AAT IA IA IA IA INTENSITY IO.20 in/hr IO.20 in/hr
Total Effective Area Managed by Capture-and-Use/E Runoff Management Credit (Step 3) Total LID Credits (Step 1+2+3) Does project require hydromodification management Adjusted Area for Flow-Based, Non-LID Treatment Adjusted Impervious Fraction of A for Volume-Base STOP: No additional treatment new a Treatment - Flow-Based (Rational Method) a treatment flow (cfs): value for i in Table D-2c (Rainfall Intensity) war, from Step 3 0.95 Flow = 0.95 * i * A _{AT}	LID compliant, che LID compliant, che t? If yes, proceed to using Sar d, Non-LID Treatment eded Flow = Runoff Coefficient x Raint 0.20 i -0.13 A _{AT} 0.95 c -0.02 cfs	fall Intensity x Area	x _{Linc} /A ₇ *200 = [in Step 4 3 56	0.0 201.4 Image: second sec	PLDe pts A _{AT} I _A Intensity = 0.20 in/hr = 0.20 in/hr
Total Effective Area Managed by Capture-and-Use/E Runoff Management Credit (Step 3) Total LID Credits (Step 1+2+3) Does project require hydromodification management Adjusted Area for Flow-Based, Non-LID Treatment Adjusted Impervious Fraction of A for Volume-Base STOP: No additional treatment need a Treatment - Flow-Based (Rational Method) e treatment flow (cfs): value for i in Table D-2c (Rainfall Intensity) war from Step 3 0.95 Flow = 0.95 * i * A _{AT}	LID compliant, che LID compliant, che t? If yes, proceed to using Sar d, Non-LID Treatment eded Flow = Runoff Coefficient x Raint 0.20 i -0.13 A _{AT} 0.95 c -0.02 cfs	ck for treatment sizing cHM. A _T - A _C -A _{LIDC} = A _{AT} / A =	Luc/A ⁺ [*] 200 = [in Step 4 0.13 0.56	0.0 201.4	AAT IA IA IA IA INTENSITY INTENSITY
Total Effective Area Managed by Capture-and-Use/E Runoff Management Credit (Step 3) Total LID Credits (Step 1+2+3) Does project require hydromodification managemen Adjusted Area for Flow-Based, Non-LID Treatment Adjusted Impervious Fraction of A for Volume-Base STOP: No additional treatment need a Treatment - Flow-Based (Rational Method) a treatment flow (cfs): value for i in Table D-2c (Rainfall Intensity) wr from Step 3 0.95 Flow = 0.95 * i * A _{AT} D Treatment - Volume-Based (ASCE-WEF)	LID compliant, che LID compliant, che 12 If yes, proceed to using Sar d, Non-LID Treatment 2ded Flow = Runoff Coefficient x Rainf 0.20 i -0.13 A _{AT} 0.95 c -0.02 cfs	fall Intensity x Area	Lupc/A ₇ *200 = [in Step 4 0.13 0.56	0.0 201.4 Table D-2c Rainfall Roseville i Sacramento i Folsom i	PtlDe pts IA IA IA Intensity = 0.20 in/hr 0.18 in/hr 0.20 in/hr

Calculate water quality volume (Acre-Feet):	WQV = Area x Maximized Det	ention Volume (P ₀)			
Obtain A from Step 1	0.23	А	hrs	Specified Draw Down time	
Obtain P_0 : Maximized Detention Volume from figures E-1 to E-4 in Appendix E of this manual using I _A from Step 2.	0.00	P ₀			
Calculate treatment volume (acre-ft): Treatment volume = A x (P ₀ / 12)	0.00	Acre-Feet			v06232012