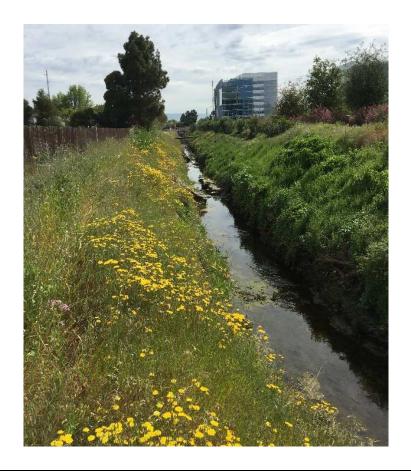
Mathilda Avenue Landscaping Project FRP S19247

SUPPLEMENTAL PROJECT INFORMATON HANDOUT

3. STORM WATER INFORMATION HANDOUT

Mathilda Avenue Improvements Project Santa Clara County, California EA 04-4H2901 May 2018

Stormwater Information Handout







This page intentionally left blank

Table of Contents

1		Overview	1
	1.1	Intent of this Document	1
	1.2	Summary of Requirements	1
2		General Project Information	
	2.1	Location	
	2.2	Major Engineering Features	2
	2.3	Construction Dates.	
	2.4	Disturbed Soil Area and Impervious Area	6
	2.5	Receiving Water Bodies	6
	2.6	Climate and Rainfall	7
	2.7	Soils and Geology	7
	2.8	Topography	7
	2.9	Hazardous Waste	7
	2.10	Existing (Pre-Construction) Control Practices	7
3		Construction General Permit	8
	3.1	Risk Assessment	8
	3.1.	1 Sediment Risk	8
	3.1.2	2 Receiving Water Body Risk	10
	3.2	Monitor and Sampling Requirements	10
	3.2.	1 Monitoring	10
	3.2.2	2 Reporting	11
	3.3	Notice of Termination (NOT)	11
4		Temporary Construction Site BMPs	12
5		Permanent (Post-Construction) Storm water control measures	13
	5.1	Permanent Erosion Control BMPs	13
	5.1.	1 Drain Inlet Stenciling	13
	5.2	Permanent Treatment BMPs	13
6		Special Considerations	14
	6.1	Dewatering	14
7		Permit Registration Documents	15
	7.1	General Information Included	15
	7.2	Storm Water Pollution Prevention Plan	16
	7.3	Site Maps	16
F	'igure	es s	
	_	Project Location Map	4
		Project Vicinity Map	
		R Factor	
	_	K Factor	
	_	LS Factor	

May 2018

i

Tables)
---------------	---

Table 1. Summary of Project DSA and Impervious Areas	6
Table 2. Monitoring Requirements	
Table 3. Temporary Construction Site BMPs	
Table 4. Erosion Control BMPs	
Table 5. Biofiltration Swale and Strip Summary	

AppendicesAppendix A Temporary Water Pollution Control Plans

May 2018 ii

1 OVERVIEW

1.1 Intent of this Document

The objectives of this Stormwater Information Handout (SWIH) are:

- To summarize general water quality information of the Project;
- To summarize the requirements of the Construction General Permit (CGP), Order 2009-0009-DWQ (as amended by 2010-0014-DWQ and 2012-0006-DWQ);
- To aid in developing the Stormwater Pollution Prevention Plan (SWPPP) of the Project; and
- To highlight information necessary to file Permit Registration Documents (PRDs) prior to the start of construction as part of the Notice of Intent (NOI) to the State Water Resources Control Board (SWRCB) via the Stormwater Multi Application Reporting and Tracking System (SMARTS).

1.2 Summary of Requirements

The "National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities" (NPDES Number CAS000002, Order No. 2012-0006-DWQ), or CGP, regulates discharges from construction activities within the Project area.

The CGP is based on a risk level (RL) permitting approach. The RL is calculated by 1) project sediment risk and 2) receiving water risk. See the risk assessment calculations in Section 3.1 of this document for details.

A risk assessment was done for the Mathilda Avenue Improvements at State Route (SR) 237 and United States (US) 101 Project (Project), and the Project was determined to be RL 1.

RL 1 projects will be subject to minimum best management practice (BMP) implementation and visual monitoring requirements.

All projects will have to upload stormwater data into SMARTS, such as the NOI, SWPPP, annual reports, and monitoring data, as applicable.

2 GENERAL PROJECT INFORMATION

This section summarizes the Project location, features, site information, and site impacts.

2.1 Location

The Project proposes to improve Mathilda Avenue in the City of Sunnyvale from Almanor Avenue/Ahwanee Avenue to Innovation Way, including on- and off-ramp improvements at the SR 237/Mathilda Avenue and US 101/Mathilda Avenue interchanges. On SR 237, the Project limits are from 0.3 mile east of the US 101/SR 237 interchange (post mile [PM] 2.7) to 0.3 mile east of the Mathilda Avenue Undercrossing (PM 3.3). On US 101, the Project limits are from 0.5 mile south of the Mathilda Avenue Overcrossing (PM 45.2) to 0.3 mile south of the SR 237/US 101 interchange (PM 45.8). The total length of the Project on Mathilda Avenue is approximately one mile. A Project Location Map is shown in Figure 1, and a Project Vicinity Map is shown in Figure 2.

2.2 Major Engineering Features

The State of California, Department of Transportation (Caltrans), in cooperation with the Santa Clara Valley Transportation Authority (VTA) and the City of Sunnyvale (City), is proposing the "Mathilda Avenue Improvements at SR 237 and US 101 Project". The Project design features include reconfiguration of the US 101 and SR 237 interchanges with Mathilda Avenue. This includes: modification to on- and off-ramps; removal, addition, and signalization of intersections; and provision of new left-turn lanes. In addition, the Project would require modification and construction of bicycle and pedestrian facilities, utilities, stormwater treatment facilities, street lighting, ramp metering, signage, retaining walls, and light rail crossing facilities as described in the following:

Roadway Improvements

Moffett Park Drive between Bordeaux Drive and Mathilda Avenue will be removed and replaced with a Class I bikeway (as described below). Vehicular traffic will be shifted north to Bordeaux Drive and Innovation Way to access Mathilda Avenue. Innovation Way has been extended from Mathilda Avenue to Bordeaux Drive as part of the Moffett Place Development Project. Moffett Park Drive eastbound/westbound north of Mathilda Avenue would remain.

- The westbound SR 237 off-ramp will be realigned and widened to terminate opposite Moffett Park Drive (on the west side of Mathilda Avenue). The existing signalized intersections on Mathilda Avenue at the SR 237 westbound off-ramp and Moffett Park Drive would be removed.
- The reconfigured westbound SR 237 off-ramp/Moffett Park Drive intersection would be signalized. The westbound SR 237 on-ramp would be modified to intersect with Mathilda Avenue just south of the new signalized intersection. Mathilda Avenue northbound traffic bound for westbound SR 237 would make a U-turn movement at the new signalized intersection to access the on-ramp.
- Three continuous through lanes will be provided in each direction on Mathilda Avenue.

- The northbound US 101 loop off-ramp will be removed and traffic shifted to northbound US 101 diagonal off-ramp.
- Northbound US 101 ramps will be realigned and widened and the ramp intersection with Mathilda Avenue signalized, and the construction of a left-turn lane on southbound Mathilda Avenue to access northbound US 101 loop on-ramp.
- Southbound US 101 off-ramp realignment and loop on-ramp and signalize ramp intersection with Mathilda Avenue.
- Modify Mathilda Avenue/Ross Drive signal intersection.
- Modify westbound SR 237 ramps to provide a diamond configuration.

Bicycle and Pedestrian Facilities

Enhanced bicycle and pedestrian facilities will be provided. Bicycle improvements on Mathilda Avenue will consist of Class II bike lanes, based on available pavement widths within the Project limits, and will connect to the existing Class II bike lanes and Class III bike routes adjacent to the project limits, and the Class I bikeway on the Sunnyvale West Channel. Bicycle improvements within the current location of Moffett Park Drive will consist of a Class I bikeway between Borregas Avenue and Mathilda Avenue. Between Mathilda Avenue and Innovation Way, a Class I multi-use path will be installed along Moffett Park Drive. The continuous sidewalk currently existing along the east side of Mathilda Avenue within the Project limits will be reconstructed and crosswalks will be provided as well as curb ramps and pedestrian countdown signals at each intersection. The new crosswalks at the reconfigured ramp intersections would be signalized.

Bicycle and pedestrian improvements in the Project area will be consistent with the City of Sunnyvale 2006 *Bicycle Plan* and the Santa Clara Countywide *Bicycle Plan* dated August 2008, and would include:

- Upgrading existing pedestrian facilities to incorporate current Americans with Disabilities Act (ADA) standards including curb ramps at all crosswalks.
- Incorporating pavement delineation with new crosswalk markings.
- Installing pedestrian countdown signals at westbound SR 237 ramps, eastbound SR 237 ramps, Ross Drive, northbound US 101 ramps, and southbound US 101 ramps.
- Realigning ('teeing up') and signalizing ramp termini to provide new pedestrian crossings, where feasible.

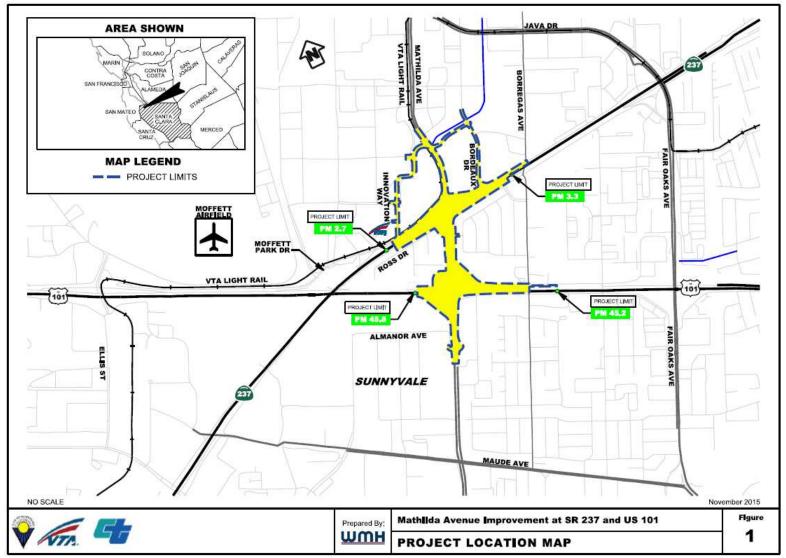


Figure 1. Project Location Map

Source: WMH Corporation

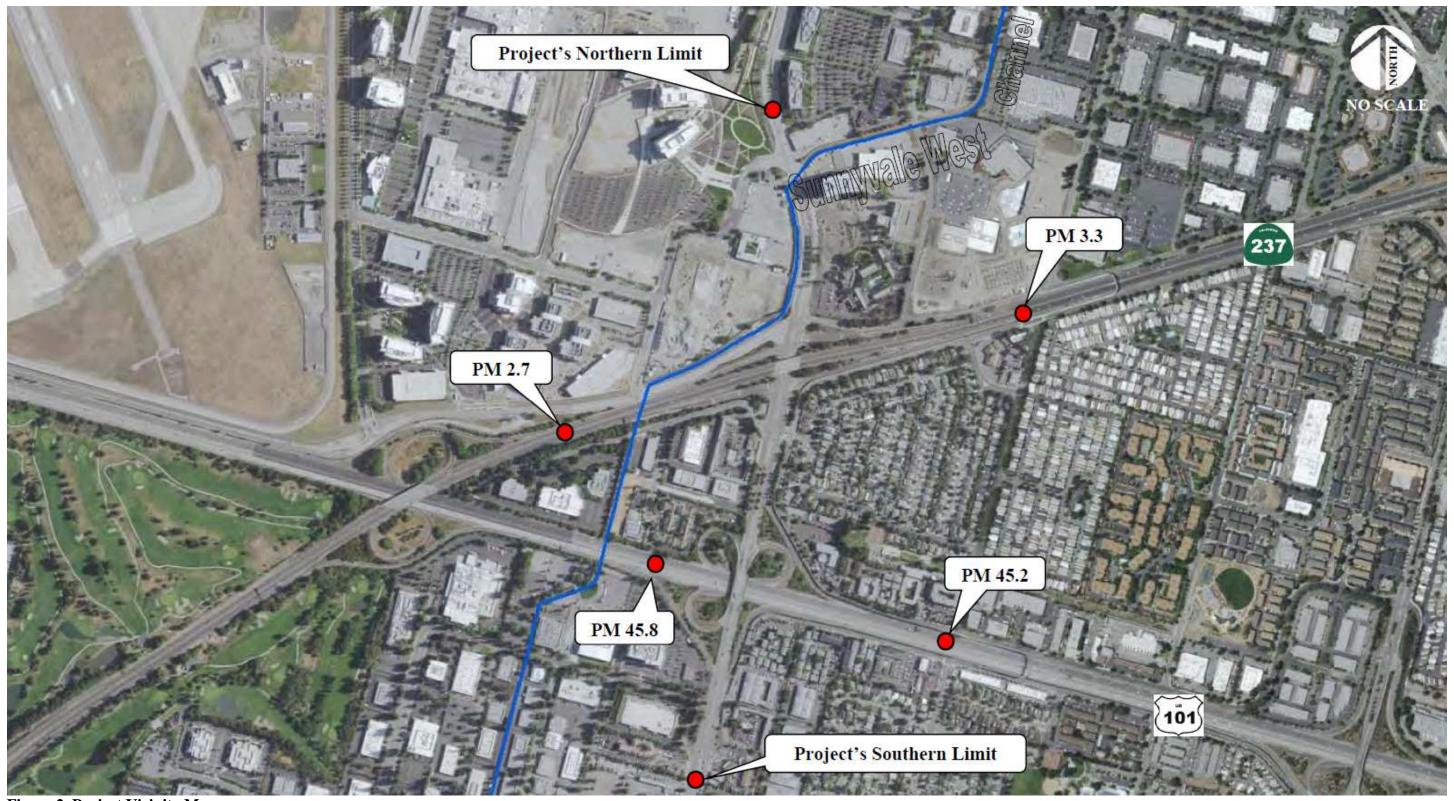


Figure 2. Project Vicinity Map

Source: Caltrans, Environmental System Research Institute (ESRI) and Santa Clara Valley Water District

This page intentionally left blank

2.3 Construction Dates

The RL is dependent on the construction schedule. The RL determination presented in this SWIH are based on the following estimated construction dates:

Construction Start Date: 01/01/2019

Construction End Date: 06/30/2020

The Caltrans District 4 Office of Water Quality should be contacted if the actual construction dates significantly differ from the dates shown above for guidance on whether a new RL determination is necessary based on the actual construction schedule.

2.4 Disturbed Soil Area and Impervious Area

The Project's disturbed soil area (DSA), pre-Project impervious area, and net new impervious (NNI), replaced impervious surface (RIS), and net impervious surface (NIS) areas are as provided in Table 1.

Table 1. Summary of Project DSA and Impervious Areas

Right-of- Way	DSA (acres)	Pre-project Impervious Area (acres)	Post-project Impervious Area (acres)	NNI (acres)	RIS (acres)	NIS (acres)
Caltrans	18.92	30.40	31.66	1.26	4.08	5.34
City of Sunnyvale	4.21	18.80	18.69	-0.11	0.94	0.83
Total	23.13	49.20	50.35	1.15	5.02	6.17

2.5 Receiving Water Bodies

The Project's receiving water body, Sunnyvale West Channel, crosses SR 237 at PM 2.80 near Innovation Way and again at Mathilda Avenue south of Innovation Way. The Sunnyvale West Channel is approximately 3 miles long and was constructed in 1964 to alleviate flooding in the watershed (Santa Clara Valley Urban Runoff Pollution Prevention Program [SCVURPPP] 2017). The channel originates at Maude Avenue as a concrete pipe culvert until it reaches Almanor Avenue in the northeastern direction. The channel becomes an earth-excavated channel from Almanor Avenue to Mathilda Avenue. The channel flows northeast to Guadalupe Slough via the Moffett Channel, and ultimately drains to the San Francisco Bay.

The San Francisco Bay Regional Water Quality Control Board (RWQCB) *Basin Plan* (2017) did not list any existing beneficial uses for the Sunnyvale West Channel. Sunnyvale West Channel is not listed as an impaired waterbody in the Clean Water Act (CWA) Section 303(d) List of Water Quality Limited Segments, issued by the U.S. Environmental Protection Agency (EPA) (2017).

2.6 Climate and Rainfall

Rainy days per year (assumed equal to precipitation of 0.10 inches or greater): 36.1 days

Qualifying rain events per year (precipitation of 0.5 inches or greater): 9.7 days

Compliance storm event (rainfall total for the 5-year, 24-hour storm): 2.5 inches

2.7 Soils and Geology

The Caltrans Water Quality Planning Tool was used to obtain the soil erodibility (K) factor values throughout the Project area (Figure 4). Based on this information, the K value for the Project is 0.32.

2.8 Topography

Based on topographic information from Google Earth, the elevation of SR 237 within the Project limits drops from 35 feet in the northeast to 21 feet in the southwest. The elevation of US 101 in the Project area is flat with an elevation range of 32 to 34 feet.

The Caltrans Water Quality Planning Tool was used to obtain the length-slope (LS) factor values throughout the Project area (Figure 5). Based on this information, the LS value for the Project is 0.36.

2.9 Hazardous Waste

The PSI, conducted by BASELINE Environmental Consulting and WMH Corporation (2017), states aerially deposited lead (ADL), pesticides, metals, petroleum hydrocarbons, and other contaminants are present within the Project limits. Soils with ADL contamination will be managed in accordance to the Caltrans/Department of Toxic Substances Control's Soil Management Agreement for ADL-Contaminated Soils (2016). Further information on ADL contaminated soils and management are discussed in the Project's PSI and the Project Specifications. Areas of ADL reuse are shown in the Construction Details included in the Project plans.

The PSI also states groundwater within the Project limits contains levels of total volatile hydrocarbons, total extractive hydrocarbons, and para-isopropyl toluene below the Environmental Screening Levels for groundwater. The Project's PSI contains further information on groundwater contamination.

2.10 Existing (Pre-Construction) Control Practices

There are no existing treatment BMPs within the Project area.

3 CONSTRUCTION GENERAL PERMIT

To minimize the potential effects of construction runoff on the quality of the receiving water bodies, any construction activity disturbing one acre or more must obtain coverage under the CGP. Permit applicants are required to prepare a SWPPP and implement BMPs to reduce construction effects on receiving water quality.

3.1 Risk Assessment

The CGP requirements include a risk assessment to determine the Project's impact risk to receiving water bodies. The risk assessment uses measurements of the Project's potential sediment risk and the sensitivity of the receiving water bodies to sediment entering the water body to determine the risk level of the Project. This Project has a **Low Site Sediment Risk**Factor and a **Low Receiving Water Risk Factor**; the combined risk is **Level 1**. The risk factors are detailed in the following sections.

3.1.1 Sediment Risk

The sediment risk is based on the following equation from the CGP (Section J.1.a pg. 28):

Equation 1. Sediment Risk Equation

A = (R)(K)(LS)

Where:

A = Rate of sheet and rill erosion (tons per acre)

R = Runoff erosivity factor

K = Soil erodibility factor

LS = Length-slope

The rainfall runoff erosivity factor (R) of **63.38** was determined from the EPA's Rainfall Erosivity Factor Calculator for Small Construction Sites.

The K factor is **0.32**, as discussed in Section 2.7.

The LS factor is **0.36**, as discussed in Section 2.8.

The cover factor (C) and management operations and support practices (P) are given values of 1.0 by the CGP to simulate bare ground conditions.

Based on these factors, the rate of sheet and rill erosion (A) is 7.30 tons per acre.

Facility Information

Start Date: 01/01/2019
End Date: 06/30/2020
Latitude: 37.401

• Longitude: -122.027

Erosivity Index Calculator Results

An erosivity index value Of 63.38 has been determined for the construction period of 01/01/2019 - 06/30/2020.

A rainfall erosivity factor of 5.0 or greater has been calculated for your site and period of construction. You do NOT qualify for a waiver from NPDES permitting requirements.

Source: EPA

Figure 3. R Factor



Source: Caltrans

Figure 4. K Factor

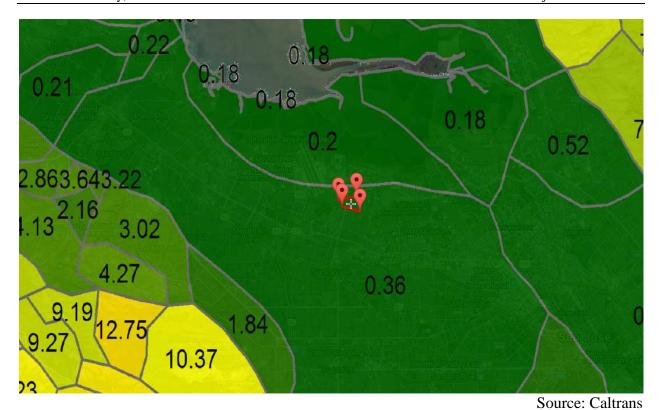


Figure 5. LS Factor

3.1.2 Receiving Water Body Risk

The Project is classified as having a low receiving water risk because the Project's receiving waters (Sunnyvale West Channel, which drains to Moffett Channel and Guadalupe Slough) are not on the CWA 303(d) list as impaired for sedimentation and do not have the combined existing beneficial uses of cold freshwater habitat (COLD), fish migration (MIGR), and fish spawning (SPWN).

3.2 Monitor and Sampling Requirements

3.2.1 Monitoring

Monitoring includes weekly visual BMP site inspections and quarterly non-stormwater monitoring that includes recordkeeping of the presence of unauthorized or authorized non-stormwater discharge. Monitoring also involves inspections to ensure proper implementation of BMPs two business days prior to and two days after each qualifying rain event. A qualifying rain event is defined as precipitation producing 0.5 inches or more of discharge. The monitoring and inspection requirements for RL 1 projects are summarized in Table 2. Refer to Section 2.6 for the estimated annual number of days with qualifying rain events.

Table 2. Monitoring Requirements

	Visual Inspections					Sample Collection	
Risk	Quarterly Non-	Pre-stor	m Event	Daily Storm BMP	Post-storm	Storm	Receiving Water
Level	stormwater Discharge	Baseline	REAP			Water Discharge	
1	X	X	-	X	X	-	-

Source: State Water Resources Control Board

3.2.2 Reporting

All projects, independent of risk level, must prepare an SWPPP with an attached Construction Site Monitoring Program (CSMP) describing the monitoring procedures and instructions. The SWPPP document would also be used to keep record of all field and analytical data related to non-visible pollutants. A copy of all documents and results are to be retained on-site during construction and be retained a minimum of three years after the conclusion of construction.

3.2.3 Caltrans Forms

The Caltrans Division of Construction has developed forms to comply with the CGP. These forms are available at: http://www.dot.ca.gov/hq/construc/forms.htm.

3.3 Notice of Termination (NOT)

The CGP provides requirements for completion and approval of the NOT. The NOT requirements are presented in Section II.D of the CGP permit "Order." These requirements include demonstrating through photos, computational proof or other "custom methods," such as results of testing and analysis, that the terms of the NOT have been satisfied.

While these methods of demonstrating compliance are at the option of Caltrans, should the RWQCB determine that visual photos do not adequately show compliance, further computational efforts may be required. This computational proof is obtained through the use of the Revised Universal Soil Loss Equation 2 (RUSLE2) program.

The NOT inspection and documentation will be completed by the Caltrans District 4 Office of Water Quality.

4 TEMPORARY CONSTRUCTION SITE BMPS

The temporary construction site BMPs proposed for the Project are listed in Table 3 along with a short description of their use or deployment. Quantities for temporary construction site BMPs are included in the contract documents; however, the Contractor will need to prepare plans and quantities for actual in-field BMP work to meet RL 1 requirements, and included this in the SWPPP for the RE's approval. The Contractor chooses the method of construction, access requirements, planned order of operations, other items, processes, and equipment.

Table 3. Temporary Construction Site BMPs					
Soil Stabilization					
Move-In/Move-Out (Temporary Erosion Control)	Designated times for construction work to reduce soil erosion.				
Sediment Control					
Temporary Reinforced Silt Fence	Fabric barrier that allows sediment to settle from runoff before water leaves construction site.				
Temporary Fiber Rolls	Degradable fibers rolled tightly and placed on the toe and face of slopes to intercept runoff.				
Temporary Drainage Inlet Protection	Runoff detainment devices used at drainage inlets that are subject to runoff from construction activities.				
Wind Erosion Control					
Dust Palliative	Suppressant used to prevent or alleviate wind-blown dust.				
Tracking Control					
Street Sweeping	Removal of tracked sediment to prevent it from entering a storm drain or watercourse.				
Temporary Construction Entrance	Points of entrance/exit to a construction site that are stabilized to reduce the tracking of mud and dirt onto public roads.				
Waste Management and Materials Poll					
Temporary Concrete Washout	Specified vehicle washing areas to contain concrete waste materials.				
Temporary Dewatering and Non-Storm Water Discharge Control System	For dewatering activities during ditch excavations.				
All other anticipated waste management a Site Management lump sum.	All other anticipated waste management and materials pollution control measures are covered under Construction				
Job Site Management					
	llution before these pollutants come in contact with stormwater systems				
or watercourses. Covers:					
 spill prevention and control 	 hazardous waste management 				
 materials management 	 contaminated soil 				
 stockpile management 	 concrete waste 				
 waste management 	 sanitary and septic waste and liquid waste 				
Non-stormwater management consists of:					
 water control and conservation pile driving operations 					
 illegal connection and discharge detection and reporting paving, sealing, saw cutting and grinding operations 					
 vehicle and equipment cleaning thermoplastic striping and pavement market 					
 vehicle and equipment fueling and maintenance concrete curing and concrete finishing 					
Miscellaneous construction site managem	Miscellaneous construction site management includes:				
training of employees and subcontractors	 proper selection, deployment and repair of construction site BMPs 				

5 PERMANENT (POST-CONSTRUCTION) STORM WATER CONTROL MEASURES

5.1 Permanent Erosion Control BMPs

The permanent erosion control BMPs proposed for this Project are listed in Table 4 along with a short description of their use or deployment.

Table 4. Erosion Control BMPs

Erosion Control Material	Description
Rolled Erosion Control	Placed on steeper slopes to prevent and minimize erosion along
Product (Netting)	the slope.
Hydromulch	Applied to all disturbed soils to provide permanent soil stabilization.
Fiber Rolls	Installed on slopes to intercept runoff and reduce flow velocity.
Hydroseed	Applied to all disturbed soils to promote vegetation establishment.
Compost	Placed slopes and disturbed soils to promote infiltration and vegetation growth.
Imported Biofiltration Soil	Used within biofiltration swales to promote infiltration.
Move-In/Move-Out (Erosion Control)	Designated times for construction work to reduce soil erosion.

5.1.1 Drain Inlet Stenciling

Construction work will be on Matilda Avenue where there is pedestrian access, so drainage inlets and manholes will be marked in accordance with the City of Sunnyvale's 2006 Standard Details.

5.2 Permanent Treatment BMPs

Permanent stormwater treatment BMPs are proposed for this Project (Table 5). These treatment BMPs are permit commitments under the Caltrans MS4 Permit and can't be removed or modified without permission from the Office of Water Quality.

Table 5. Biofiltration Swale and Strip Summary

Biofiltration Type	Location
Swale	"M6" 67+49 TO "M6" 71+54
Swale	"M2" 72+40 TO "M2" 69+01
Strip	"C" 375+24 TO "C" 378+07

6 SPECIAL CONSIDERATIONS

6.1 Dewatering

Dewatering must comply with National Pollutant Discharge Elimination System Program (NPDES) Permits for Caltrans (Order No. 2014-0077-DWQ), the San Francisco Bay Region (Municipal Regional Permit R2-2015-0049 within the City of Sunnyvale jurisdiction, and the State Water Resources Control Board Construction General Permit (CGP) (Order No. 2012-0006-DWQ). For the permit, go to the State Water Resources Control Board website.

If the groundwater is clean, no dewatering permit is needed. If the groundwater is contaminated, dewatering must comply with the General Waste Discharge Requirements for Discharge or Reclamation of Extracted and Treated Groundwater Resulting from the Cleanup of Groundwater Polluted by Volatile Organic Compounds (VOCs), Fuel Leaks, Fuel Additives, and Other Related Wastes (VOCs and Fuel General Permit Order No. R2-2017-00XX, NPDES Permit No. CAG912002). Refer to the VOCs and Fuel General Permit for effluent limits.

7 PERMIT REGISTRATION DOCUMENTS

To obtain permit coverage under the CGP, all dischargers must electronically file PRDs, changes of information, sampling and monitoring information, annual reporting, and other compliance documents required by the CGP through the SWRCB's SMARTS. The Contractor will have to coordinate these submittals with Caltrans within the timeframe allotted in the contract special provisions and as specified in the permit. SMARTS is found under the following website:

https://smarts.waterboards.ca.gov/smarts/faces/SwSmartsLogin.jsp

PRDs include the following information:

1. Notice of Intent (NOI)

2. Site Map(s) Includes:

- a. The project's surrounding area (vicinity)
- b. Site layout
- c. Construction site boundaries
- d. Drainage areas
- e. Discharge locations
- f. Sampling locations
- g. Areas of soil disturbance (temporary or permanent)
- h. Active areas of soil disturbance (cut or fill)
- i. Locations of all runoff BMPs
- j. Locations of all erosion control BMPs
- k. Locations of all sediment control BMPs
- 1. Active Treatment System (ATS) location (if applicable)
- m. Locations of sensitive habitats, watercourses, or other features which are not to be disturbed
- n. Locations of all post-construction BMPs
- o. Locations of storage areas for waste, vehicles, service, loading/unloading of materials, access (entrance/exits) points to construction site, fueling and water storage, water transfer for dust control and compaction practices

3. SWPPPs

4. Risk Assessment

7.1 General Information Included

The following is a list of information included in this SWIH that can be used for the PRDs:

- Vicinity Map
- Risk Assessment

7.2 Storm Water Pollution Prevention Plan

The Contractor for the Project is required to prepare a SWPPP because the Project involves disturbing more than 1 acre of soil. The SWPPP must include the following information:

- Active areas of cut and fill
- Areas of soil disturbance (temporary and permanent)
- Locations of storage areas for waste, vehicles, access, etc.
- Locations of all runoff BMPs
- Locations of all erosion control BMPs
- Locations of all sediment control BMPs

The SWPPP should be submitted with the PRDs and will be forthcoming from the Contractor.

7.3 Site Maps

The SWPPP must include water pollution control drawings. The design phase temporary water pollution control plans are included in Appendix A. These plans were developed during the design phase and reflect the proposed final condition. BMP locations and types are subject to changes by the Contractor for approval by the Resident Engineer.

This page intentionally left blank

Appendix A Temporary Water Pollution Control Plans

This page intentionally left blank

