



**STORM WATER DATA INFORMATION**

**1. Project Description**

Bay Area Infrastructure Financing Authority (BAIFA) and the California Department of Transportation (Caltrans) are pursuing development of an integrated Bay Area express lane network to enhance mobility and afford greater user flexibility of the transportation system within the San Francisco Bay Area. Express lanes will allow single occupancy vehicles to use high occupancy vehicle (HOV) lanes by paying a toll that is adjusted dynamically based on congestion. The proposed regional express lane network has been divided into 33 specific segments for implementation. At this time, BAIFA and Caltrans have selected the following five segments to advance as the first phase of the express lane network (Phase 1 Project): (1) San Francisco-Oakland Bay Bridge westbound approach from I-80, I-580, and I-880, (2) San Mateo Bridge westbound approach on SR-92, (3) Dumbarton Bridge westbound approach on SR 84, (4) Interstate 680 (I-680) between Alcosta Road and Livorna Road, and (5) Interstate 880 (I-880) between Hegenberger/Lewelling and State Route 237 (SR 237). The five segments would convert existing HOV lanes to approximately 85 miles of the regional express lanes network.

Within the I-680 corridor project limits the express lanes would be contiguous/non-separated from the general purpose lanes and would be designed with no designated ingress and egress locations. The express lane width would be 12 feet wide where feasible and designated using a skip stripe pavement marking. The I-680 segment includes the addition of electronic toll technologies and overhead sign structures that would be constructed within the proposed median area.

**Table 1. I-680 Existing HOV Lanes to be converted to Express Lanes**

Segment Limits (Post Mile [PM])	Limits of HOV Conversion (PM)	HOV Conversion Length (Directional Miles)	Conversion Description
ALA 680 R21.0 – R21.9 CC 680 R0.0 – 14.0	NB: ALA 680 R21.32 - R21.88 CC 680 R0.0 - R11.47	12.03	Alcosta Boulevard to Livorna Road
	SB: CC 680 R0.41 – R12.77	12.36	Rudgear Road to Alcosta Boulevard

Within the Project limits, the express lanes would be contiguous/non-separated from the general purpose lanes and designed with no designated ingress and egress locations. The express lane would be 12 feet wide where feasible and designated using a skip-stripe pavement marking. The Project includes the addition of electronic toll technologies and overhead sign structures that would be constructed within the proposed median area.

The disturbed soil area was calculated to be 0.72 ac, which was provided by URS Corporation. The existing impervious surface is 305 ac and the proposed added impervious

area would be 0.16 ac. The reworked impervious area would be 0.02 ac, which is based on the excavation at median for the proposed sign installations.

The Project is within the Alameda and Contra Costa County Phase 1 Municipal Separate Storm Sewer System (MS4) area.

**2. Site Data and Storm Water Quality Design Issues (refer to Checklists SW-1, SW-2, and SW-3)**

The Project is located entirely within the jurisdiction of Caltrans District 4 and the San Francisco Bay Regional Water Quality Control Board (RWQCB) – Region 2.

Hydrologic Units

I-680 crosses several large watersheds, and most of the creeks and drainages it crosses flow into the San Francisco Bay. The Caltrans Water Quality Planning Tool identifies the Project as bordering the Concord hydrologic area in the Suisun hydrologic unit and Alameda Creek hydrologic area in the South Bay hydrologic unit. See the Supplemental Attachments for the hydrologic unit and area maps. Table 2. Hydrologic Units within Project Area

I-680 PM	Hydrologic Unit	Hydrologic Area	Hydrologic Sub-Area #	Planning Watershed
CC 13.92 to CC 13.61	Suisun	Concord	207.32	Las Trampas Creek
CC 13.61 to CC R8.29	Suisun	Concord	207.32	Tice Creek
CC R8.29 to CC R3.74	Suisun	Concord	207.32	San Ramon Valley
CC R3.74 to ALA R20.12	South Bay	Alameda Creek	204.30	Undefined

Source: Caltrans 2013

Receiving Water Bodies

There are a number of creeks and flood control channels that are direct receiving water bodies for the Project. These facilities are under the jurisdiction of the Contra Costa Flood Control District, the Alameda County Flood Control and Water Conservation District (ACFC&WCD), and the Department of Water Resources (DWR).

A list of creeks and streams adjacent to the Project were created using Federal Emergency Management Agency (FEMA) maps, U.S. Geological Survey (USGS) topographic maps, Oakland Museum of California watershed maps, and aerial photographs. Table 3 provides the list of major creek crossings and the type of facility they cross from north to south.

**Table 3. Drainage Facilities at Major Crossings of the I-680 Segment**

Waterway	PM at I-680	Drainage Facility
Las Trampas Creek	CC 13.72	Bridge
Tice Creek	CC 13.53	Culvert
San Ramon Creek	CC R12.64	Bridge
A tributary to San Ramon Creek	CC R11.33	18-inch RCP

**Table 3 (continued)**

Miranda Creek	CC R10.70	Culvert
Stone Valley Creek	CC R10.60	Culvert
A tributary to San Ramon Creek	CC R9.25	18-inch RCP
A tributary to San Ramon Creek	CC R9.00	36-inch RCP
Green Valley Creek	CC R7.64	Concrete Arch Culvert
San Ramon Creek	CC R7.43	Bridge
A tributary to San Ramon Creek	CC R5.14	42-inch RCP
San Ramon Creek	CC R4.46	Double 12 ft x 16 ft RCB
A tributary to South San Ramon Creek	CC R1.54	Double 6 ft x 5 ft Box
Oak Creek	CC R0.94	8 ft x 7 ft RCB
Line J	ALA R20.46	Concrete Trapezoidal Culvert
Dublin Creek	ALA R20.19	Double 8 ft x 12 ft RCB

Source: Caltrans, FEMA, Oakland Museum of California, USGS

Notes:

RCB = Reinforced Concrete Box, RCP = Reinforced Concrete Pipe

Clean Water Act 303(d) List

None of the direct receiving water bodies within the Project area were found on the Clean Water Act (CWA) 2010 303(d) List of Water Quality Limited Segments.

Beneficial Uses

The San Francisco Bay RWQCB *Basin Plan* (2013) lists beneficial uses for several receiving water bodies within the Project, summarized in Table 4. The Project receiving water bodies not listed in Table 4 do not have listed beneficial uses.

**Table 4. Beneficial Uses of Water in the Project Areas (South Bay Basin and Suisun Basin)**

Corridor	Water body	SHELL	COLD	EST	MAR	MIGR	RARE	SPWN	WARM	WILD	REC-1	REC-2	NAV
I-680	Dublin Creek								E	E	E	E	
	San Ramon Creek								E	E	E	E	
	Las Trampas Creek		E				E		E	E	E	E	
	Tice Creek						E		E	E	E	E	

Notes:

COLD—Cold Freshwater Habitat

EST—Estuarine Habitat

MAR—Marine Habitat

MIGR—Fish Migration

NAV—Navigation

RARE—Preservation of Rare and Endangered Species

SHELL—Shellfish Harvest

SPWN—Fish Spawning

WARM—Warm Freshwater Habitat

WILD—Wildlife Habitat

REC-1—Water Contact Recreation

REC-2—Non-contact Water Recreation

E—Existing Beneficial Uses

Source: San Francisco Bay RWQCB 2011



### Water Supply Reservoirs and Percolation Facilities

The *District 4 Work Plan* (Caltrans 2014) does not identify any drinking water reservoirs or recharge facilities within the limits of the Project.

### Other Agency Special Requirements

Per the Project's *Natural Environment Study* (HDR 2013) and *Delineation of Wetlands and Other Waters of the United States* (HDR 2013), wetlands have been identified within the Project limits. The Project is planning to use construction techniques to perform the necessary work so that there would be no impacts to the wetlands and waters of the U.S.

Any of the permits or agreements will detail specific temporary impacts to the appropriate jurisdiction, list required actions or BMPs to be used to avoid or minimize impacts to water resources, and detail specific mitigation efforts to enhance or restore water resources. The permit requirements are under review and the pertinent permits will be determined upon the completion of the review and finalization of the biological reports.

### 401 Certification

Any work that crosses a water of the U.S. or RWQCB-regulated water will be constructed using engineered methods that will avoid construction within the waters.

### Climate

The climate of the Project area follows the typical wet-winter/dry summer pattern typical of Mediterranean climates. Temperatures are moderate over the entire Project area during the winter and summer. Rain falls mainly between October and April; little or no rain falls during the summer months. In general, precipitation increases inland from the Bay with increasing elevation and reaches a maximum along the top of the coastal hills. The precipitation decreases rapidly from the peak eastward. Average annual precipitation is 22 inches per year in the Project area (HDR 2013).

Soil Classification

Per the “Geotechnical Design Report for the Overhead Sign Structures of I-680 Express Lanes Project” (URS 2014):

Beneath the pavement sections, the borings encountered embankment fills underlain by native alluvial soils and formational materials. The fills, where encountered, typically consisted of stiff to hard lean and sandy lean clays and medium dense to very dense sands and gravels. The native alluvial soils typically consisted of medium to hard lean clays, sandy lean clays and silts with interbedded medium dense to very dense poorly graded silty and clayey sands. The underlying formational materials, where encountered below the alluvium, generally consisted of highly weathered siltstone and claystone.

In the northern half of the project alignment, portions of I-680 cross the westernmost toe of the foothills along the east side of the San Ramon Valley. From several hundred yards north of Stone Valley Road northward to about ¾ mile north of Livorna Road most of the alignment is constructed on Pliocene age (2.6 to 5.3 million years) Green Valley and Tassajara Formations, Tgvt, non-marine sandstone, siltstone, and conglomerate. Between Crow Canyon Road and Sycamore Valley Road, the project alignment crosses the toe of a low hill on the west side of San Ramon Valley that is underlain by Miocene age (5.3 to 23 million years) Briones Formation, Tbr, composed of marine sandstone, siltstone and conglomerate, locally with abundant shell fossils. Farther south near Alcosta Boulevard a cut was made into an east-facing hillslope for the construction of I-680. This hill is underlain by Green Valley and Tassajara Formations.

Groundwater

The State Water Resources Control Board’s (SWRCB) Groundwater Ambient Monitoring and Assessment database provides that groundwater depth in the Project area ranges from 4.2 feet to 29.8 feet below ground surface. The water table is higher in the central area and decreases to the north and the south ends. This Project is with the San Ramon Valley and Livermore Valley groundwater basins. For groundwater beneficial uses, see Table 5 below.

**Table 5. Groundwater Beneficial Uses in the Project Areas**

Corridor	Basin Number	Groundwater Basin: Sub-basin	Beneficial Uses				
			MUN	PROC	IND	AGR	FRESH
I-680	2-7	San Ramon Valley	E	P	P	E	-
	2-10	Livermore Valley	E	E	E	E	-
Notes: MUN—Municipal and domestic water supply      PROC—Industrial process water supply IND—Industrial service water supply              AGR—Agricultural water supply FRESH—Freshwater replenishment              E—Existing Beneficial Uses							

Source: San Francisco Bay RWQCB 2013

Hazardous Waste

According to the Initial Site Assessment (ISA) Report prepared for the Project (Parikh Consultants Inc. 2013), agricultural activity has been prevalent in the properties surrounding the Project area for many years. Therefore, it is expected that the surface soils along the proposed right-of-way are affected by hazardous levels of pesticides, herbicides, and arsenic. Moreover, review of historic data shows that some of the bridge structures along this corridor may contain asbestos-containing material and lead-based paint in their construction materials. Hazardous testing has been performed.

If installation of foundations will be done within the right-of-way near these sites, it is recommended that groundwater tests be done to determine whether petroleum hydrocarbon constituents are present.

### Aerially Deposited Lead (ADL)

Because of the many years of vehicular activity that has occurred in the Project area, the surface soils are impacted with aerially deposited lead (ADL). Hazardous testing has been performed.

### Topography

The I-680 corridor is situated in the San Ramon Valley, between the East Bay hills and Mount Diablo at an average elevation of approximately 400 feet above mean sea level (msl). Drainage from the area flows to San Ramon Creek, which is located to the east of the Project area, and then north to Tice Creek, Walnut Creek, Pacheco Creek, and the southwestern end of Suisun Bay (Entrix 2002). Elevation within this Project corridor ranges between 140 and 490 feet above msl (HDR 2013).

### Right-of-Way

All proposed improvements from this Project are within the existing right-of-way. Additional right-of-way acquisitions or easements and right-of-entry are not required for design, construction, and maintenance best management practices (BMPs).

### Land Use

According to the Association of Bay Area Governments, the population estimated for Contra Costa County was 1,049,025 as of 2010. The City of Walnut Creek had a population of 64,173 in 2010; the Town of Danville had a population of 42,039 in 2010; and the City of San Ramon had a population of 72,148 in 2010. The population estimated for Alameda County was 1,510,271 as of 2010. The City of Dublin had a population of 46,036 in 2010.

Pavement occupies the majority of the study area with vegetated shoulders and interchange areas of varying sizes. Land use in the Project region consists primarily of residential and commercial development, with a few small open space preserves and private ranches (HDR 2012).

Most of the land areas adjacent to the Project in Contra Costa County are zoned as single family residential-very low to medium uses. Large areas of commercial and public/semi-public land and multiple family residential-high uses also exist in the municipalities of Walnut Creek, Danville, and San Ramon in the Project vicinity. The Project's action area is almost completely surrounded by urban development and bordered by two heavily used arterial roads, Camino Ramon on the east and San Ramon Valley Boulevard on the west. There are limited areas of undeveloped land. The entire Project action area is either surrounded by existing development or active construction (Caltrans 2012).

Most of the land areas adjacent to the Project in the City of Dublin (in Alameda County) are zoned as low-density residential (0-6 dwelling units per acre) uses north of Amador Valley Boulevard and south to downtown Dublin (City of Dublin 2011).

### Measures for Avoiding or Reducing Potential Stormwater Impacts

Caltrans is required to reduce pollutants in stormwater discharges to the maximum extent practicable. For discharges from a construction site, pollutants must be reduced using Best Available Technology Economically Achievable, and conventional pollutants (i.e. total suspended solids and pH) must be reduced using Best Conventional Technology.

Because this Project is proposing work along the existing I-680 alignment, the Project cannot be relocated or realigned to avoid or reduce impacts to receiving water bodies or other problematic areas.

All work in creeks and waterways would be scheduled per regulatory requirements. The biological studies and reports prepared for this Project discuss in detail the proposed avoidance, minimization, and mitigation measures related to water resources and biological characteristics of the aquatic environment. The permanent erosion control strategy for this Project is discussed further in Section 4 of this Storm Water Data Report. Placement of all BMPs would be done in a manner to allow for maintenance access.

### 3. Regional Water Quality Control Board Agreements

Currently, there are no agreements with the San Francisco Bay RWQCB.

### 4. Proposed Design Pollution Prevention BMPs to be used on the Project.

Added impervious area is directly related to the potential permanent water quality impacts. The Project would result in an added impervious area of approximately 0.16 ac along the Project corridor. There would be minimum increases of flow volumes, flow velocities, and peak durations from the loss of unpaved overland flow and native infiltration (hydromodification) of stormwater flow to downstream receiving water bodies as a result of the added impervious area.

Stormwater runoff from the Project corridor drains directly into creek crossings and to nearby storm drain systems, which ultimately discharge into lined and unlined channels.

Therefore, necessary erosion control would be applied to the ditches. Increased sediment loads may be transported to downstream waterways; therefore, permanent erosion control measures would be applied to all new or exposed slopes.



### Slope/Surface Protection Systems, Checklist DPP-1, Parts 1 and 3

All slopes and unpaved areas temporarily affected by Project construction would be reseeded with native grasses to stabilize the slopes and bare ground against erosion. Minimal removal of existing vegetation (shrubs and trees) is anticipated. The Project would create or modify existing slopes; therefore, vegetated surfaces and/or hard surfaces would be applied as control measures.

Erosion control measures such as permanent fiber rolls, and wood mulch erosion control products can be used to reduce erosion permanently. The use of compost is strongly encouraged by Caltrans. Compost not only improves erosion resistance and vegetation establishment, but also helps immobilize heavy metals that are common along highways.

The *Project Planning and Design Guide* (PPDG) (Caltrans 2010) describes approved erosion control BMPs. Temporary erosion control and water quality measures will be defined in detail in the Erosion Control and Water Pollution Control design sheets prepared for the Project.

### Concentrated Flow Conveyance Systems, Checklist DPP-1, Parts 1 and 4

The Project would have the potential to create water gullies and create or modify existing slopes. The construction of the Project necessitates the need for construction of new and modification of existing drainage facilities. The proposed modifications and impacts will require the proper design of drainage facilities to handle concentrated flows: ditches, berms, dikes, and/or swales; overside drains; flared end sections; and outlet protection/velocity dissipation devices. The proposed drainage features for this Project are detailed on the drainage plans.

### Preservation of Existing Vegetation, Checklist DPP-1, Parts 1 and 5

Existing sensitive vegetation are preserved to the maximum extent practicable. Environmentally Sensitive Areas (ESA), including vegetation to remain in place, has been coordinated with Caltrans District 4 Division of Environmental Planning & Engineering and are identified on the contract plans.

### 5. Proposed Permanent Treatment BMPs to be used on the Project

This Project would not be required to install permanent treatment BMPs because the added impervious area would be 0.16 ac and the reworked impervious area would be 0.02 ac, which is 0.18 ac and less than 1 ac. The reworked impervious area of 0.02 ac is based on the area of the excavation in the median due to sign installation.

### 6. Proposed Temporary Construction Site BMPs to be used on Project

Potential temporary impacts to stormwater quality can be avoided or minimized by implementing standard BMPs recommended for a particular construction activity. The selected temporary BMPs are consistent with the practices required under the CGP and

Caltrans MS4 permit. Compliance with the requirements of these permits, and adherence to the conditions, reduces or avoids potentially significant construction-related impacts.

Adverse temporary impacts can potentially occur during construction-related activities. Soil erosion, especially during heavy rainfall, can increase the suspended solids, dissolved solids, and organic pollutants in stormwater runoff generated within the Project area. These conditions will likely persist until completion of construction activities and implementation of long-term erosion control measures.

Erosion control measures can be applied to all exposed areas during construction, including trapping sediment within the construction area through the placing of barriers, such as silt fences, at the perimeter of downstream drainage points. Other methods of minimizing erosion impacts include the construction of temporary detention basins, the implementation of hydromulching, and/or limiting the amount and length of exposure of graded soil.

Contract documents would address any necessary permits for dewatering as needed. Temporary creek diversion is not needed as there is no work anticipated in wetlands.

The suggested minimum temporary control BMPs that would be necessary for the Project are included in Table 6. Furthermore, during construction, the Contractor would be required to document actual in-field implementation of the BMPs in the Water Pollution Control Program (WPCP), as well as amend the WPCP as necessary to match field conditions and phasing of the Project.

**Table 6. Temporary BMPs**

Temporary BMP	Purpose
<b>Soil Stabilization</b>	
Move-In/Move-Out	Mobilization locations where permanent erosion control or revegetation to sustain slopes is required within the Project limits.
Temporary Cover	Plastic covers for stockpiles.
Temporary Fence (Type ESA)	High visibility fence to designate areas off-limits to the contractor.
<b>Sediment Control</b>	
Temporary Fiber Rolls	Degradable fibers rolled tightly and placed on the toe and face of slopes to intercept runoff.
Temporary Silt Fence	Linear, permeable fabric barriers to intercept sediment-laden sheet flow. Placed downslope of exposed soil areas, along channels, and project perimeter.
Temporary Gravel Bag Berm	Single row of gravel bags installed end to end to form a barrier across a slope to intercept runoff. Can be used to divert or detain moderately concentrated flows.
Temporary Check Dams	Small constructed device of rock or other product placed across a channel or ditch to reduce flow velocity.
Temporary Drainage Inlet Protection	Runoff detention devices used at storm drain inlets that are subject to runoff from construction activities.

**Table 7. (continue)**

Tracking Control	
Temporary construction entrances/exits	Points of entrance/exit to a construction site that are stabilized to reduce the tracking of mud and dirt onto public roads.
Street Sweeping	Removal of tracked sediment to prevent them entering a storm drain or watercourse.
Non-Stormwater Management	
Dewatering Operations	Dewatering operations associated with stormwater/non-stormwater discharges and activities to prevent the release of pollutants from the construction site.
All other anticipated non-stormwater management measures are covered under Job Site Management.	
Waste Management and Materials Pollution Control	
Temporary Concrete Washout Facilities	Specified vehicle washing areas to contain concrete waste materials.
All other anticipated waste management and materials pollution control measures are covered under Job Site Management.	
Job Site Management	
<p>General measures covered under this category includes management of:</p> <ul style="list-style-type: none"> <li>• spill prevention and control</li> <li>• materials</li> <li>• stockpile</li> <li>• waste</li> <li>• hazardous waste</li> <li>• contaminated soil</li> <li>• concrete waste</li> <li>• sanitary and septic waste and liquid waste</li> </ul> <p>Miscellaneous job site management includes:</p> <ul style="list-style-type: none"> <li>• training of employees and subcontractors in proper selection, deployment, and repair of construction site BMPs</li> </ul>	<p>Non-stormwater management consists of:</p> <ul style="list-style-type: none"> <li>• water control and conservation</li> <li>• illegal connection and discharge detection and reporting</li> <li>• vehicle and equipment cleaning</li> <li>• vehicle and equipment fueling and maintenance</li> <li>• material and equipment used over water</li> <li>• structure removal over or adjacent to water paving, sealing, saw cutting and grinding operations</li> <li>• thermoplastic striping and pavement markers</li> <li>• concrete curing and concrete finishing</li> </ul>

The proposed construction site BMPs would be reviewed and approved by the Construction Stormwater Coordinator.

Non-stormwater waste management is essential to minimize the potential for water quality impacts on the Project site. Accidental spills of petroleum hydrocarbons (such as fuels and

lubricating oils), concrete wastewater, and possibly sanitary wastes from construction work site wash facilities are also of concern during construction activities. An accidental release of these wastes can adversely affect surface water quality, vegetation, and wildlife habitat.

A spill on the roadway would trigger immediate response actions to report, contain, and mitigate the incident. The California Office of Emergency Services has developed a Hazardous Materials Incident Contingency Plan, which provides a program for response to spills involving hazardous materials. The plan designates a chain of command for notification, evacuation, response, and cleanup of spills. Caltrans also has spill contingency procedures and response crews.

#### **7. Maintenance BMPs (Drain Inlet Stenciling)**

Stenciling may not be required for proposed inlets as there is no pedestrian and bicycle access on the main line of I-680.

### Required Attachments

- Vicinity Map
- Evaluation Documentation Form (EDF)
- Construction Site BMP Consideration Form (required at PS&E only)

### Supplemental Attachments

*Note: Supplement Attachments are to be supplied during the SWDR approval process; where noted, some of these items may only be required on a project-specific basis.*

- BMP Cost Summary
- Erosion Control Detail with Quantities
- Checklist SW-1, Site Data Sources
- Checklist SW-2, Storm Water Quality Issues Summary
- Checklist SW-3, Measures for Avoiding or Reducing Potential Storm Water Impacts
- Checklists DPP-1, Parts 1–5 (Design Pollution Prevention BMPs) [only those parts that are applicable]
- Checklists CS-1, Parts 1–6 (Construction Site BMPs) [only those Parts that are applicable, at PS&E only]







# APPENDIX E

# Evaluation Documentation Form

DATE: January 2015

Project ID ( or EA): 04140004891

NO.	CRITERIA	YES ✓	NO ✓	SUPPLEMENTAL INFORMATION FOR EVALUATION
1.	Begin Project Evaluation regarding requirement for consideration of Treatment BMPs	✓		See Figure 4-1, Project Evaluation Process for Consideration of Permanent Treatment BMPs. Go to 2
2.	Is this an emergency project?		✓	If Yes, go to 10. If No, continue to 3.
3.	Have TMDLs or other Pollution Control Requirements been established for surface waters within the project limits? Information provided in the water quality assessment or equivalent document.		✓	If Yes, contact the District/Regional NPDES Coordinator to discuss the Department's obligations under the TMDL (if Applicable) or Pollution Control Requirements, go to 9 or 4.  _____ (Dist./Reg. SW Coordinator initials) If No, continue to 4.
4.	Is the project located within an area of a local MS4 Permittee?	✓		If Yes. ( <i>Alameda and Contra Costa Counties, Phase 1</i> ), go to 5. If No, document in SWDR go to 5.
5.	Is the project directly or indirectly discharging to surface waters?	✓		If Yes, continue to 6. If No, go to 10.
6.	Is it a new facility or major reconstruction?		✓	If Yes, continue to 8. If No, go to 7.
7.	Will there be a change in line/grade or hydraulic capacity?	✓		If Yes, continue to 8. If No, go to 10.
8.	Does the project result in a <u>net increase of one acre or more of new impervious surface</u> ?		✓	If Yes, continue to 9. If No, go to 10.  <u>0.16 ac (Net Increase New Impervious Surface)</u> <u>and 0.02 ac (Reworked Impervious Surface)</u>
9.	Project is required to consider approved Treatment BMPs.			See Sections 2.4 and either Section 5.5 or 6.5 for BMP Evaluation and Selection Process. Complete Checklist T-1 in this Appendix E.
10.	Project is not required to consider Treatment BMPs.  _____(Dist./Reg. Design SW Coord. Initials) <u>CS</u> (Project Engineer Initials) <u>3/23/2015</u> (Date)	✓		Document for Project Files by completing this form, and attaching it to the SWDR.



# APPENDIX E

## Construction Site BMP Consideration Form

DATE: January 2015

Project ID (or EA): 04 1400 0489

Project Evaluation Process for the Consideration of Construction Site BMPs

NO.	CRITERIA	YES ✓	NO ✓	SUPPLEMENTAL INFORMATION
1.	Will construction of the project result in areas of disturbed soil as defined by the Project Planning and Design Guide (PPDG)?	✓		If Yes, Construction Site BMPs for Soil Stabilization (SS) will be required. Complete CS-1, Part 1. Continue to 2. If No, Continue to 3.
2.	Is there a potential for disturbed soil areas within the project to discharge to storm drain inlets, drainage ditches, areas outside the right-of-way, etc?	✓		If Yes, Construction Site BMPs for Sediment Control (SC) will be required. Complete CS-1, Part 2. Continue to 3.
3.	Is there a potential for sediment or construction related materials and wastes to be tracked offsite and deposited on private or public paved roads by construction vehicles and equipment?	✓		If Yes, Construction Site BMPs for Tracking Control (TC) will be required. Complete CS-1, Part 3. Continue to 4.
4.	Is there a potential for wind to transport soil and dust offsite during the period of construction?	✓		If Yes, Construction Site BMPs for Wind Erosion Control (WE) will be required. Complete CS-1, Part 4. Continue to 5.
5.	Is dewatering anticipated or will construction activities occur within or adjacent to a live channel or stream?	✓		If Yes, Construction Site BMPs for Non-Storm Water Management (NS) will be required. Complete CS-1, Part 5. Continue to 6.
6.	Will construction include saw-cutting, grinding, drilling, concrete or mortar mixing, hydro-demolition, blasting, sandblasting, painting, paving, or other activities that produce residues?	✓		If Yes, Construction Site BMPs for Non-Storm Water Management (NS) will be required. Complete CS-1, Parts 5 & 6. Continue to 7.
7.	Are stockpiles of soil, construction related materials, and/or wastes anticipated?	✓		If Yes, Construction Site BMPs for Waste Management and Materials Pollution Control (WM) will be required. Complete CS-1, Part 6. Continue to 8.
8.	Is there a potential for construction related materials and wastes to have direct contact with precipitation; stormwater run-on, or stormwater runoff; be dispersed by wind; be dumped and/or spilled into storm drain systems?	✓		If Yes, Construction Site BMPs for Waste Management and Materials Pollution Control (WM) will be required. Complete CS-1, Part 6. Continue to 9.
9.	End of checklist.	✓		Document for Project Files by completing this form, and attaching it to the SWDR.

*CJS* 03/23/15

PE to initialize after concurrence with Construction (PS&E only)

Date



## Storm Water BMP Quantity Summary

<b>Project Name:</b>	I-680 Express Lanes Project
<b>District:</b>	04
<b>Project ID (or EA)</b>	04140004891 (04-3G9501)
<b>County:</b>	Ala & CC
<b>Route:</b>	680
<b>Begin Postmile:</b>	Ala R20.1 & CC R0.0
<b>End Postmile:</b>	Ala R21.9 & CC 14.0

### Treatment BMPs

BEES	Pollution Prevention BMPs Appendix A	PPDG	Quantity	Unit
N/A	Not Applicable			

### Design Pollution Prevention BMPs

BEES	Pollution Prevention BMPs Appendix A	PPDG	Quantity	Unit
	<b>Downstream Effects/Increased Flow Mitigation</b>			
N/A	Not Applicable			
	<b>Slope/Surface Protection Systems- Hard Surfaces</b>			
N/A	Not Applicable			
	<b>Slope/Surface Protection Systems- Vegetated Surfaces</b>			
205035	Wood Mulch		680	CY
210350	Fiber Rolls		990	LF
	<b>Concentrated Flow Conveyance Systems</b>			
N/A	Not Applicable			

## Storm Water BMP Quantity Summary

### Temporary Construction Site BMPs

ID	BEES	Temporary BMPs - PPDG Appendix C	STD. Det. (Y or N)	Quantity	Unit
04140004891 (04-3		<b>Temporary Soil Stabilization</b>			
SS-2	141000	Temporary Fence (Type ESA)	Yes	69880	LF
SS-2	141010A	Temporary Fence (Wildlife Exclusion Type E)	Yes	13970	LF
SS-7	130500	Temporary Erosion Control Blanket	Yes	3900	SQYD

ID	BEES	Temporary Sediment Control	STD. Det. (Y or N)	Quantity	Unit
SC-5	130640	Temporary Fiber Roll	Yes	990	LF
SC-7	130730	Street Sweeping	No	1	LS
SC-10	130620	Temp. Drainage Inlet Protection	Yes	62	EA

ID	BEES	Temporary Tracking Control	STD. Det. (Y or N)	Quantity	Unit
N/A	N/A	Not Applicable			

ID	BEES	Temporary Waste Management Control	STD. Det. (Y or N)	Quantity	Unit
WM-1	JSM*	Material Delivery and Storage	No		LS
WM-2	JSM*	Material Use	No		LS
WM-3	JSM*	Stockpile Management	No		LS
WM-4	JSM*	Spill Prevention and Control	No		LS
WM-5	JSM*	Solid Waste Management	No		LS
WM-6	JSM*	Hazardous Waste Management	No		LS
WM-7	JSM*	Contaminated Soil Management	No		LS
WM-9	JSM*	Sanitary/Septic Waste Managemt	No		LS
WM-10	JSM*	Liquid Waste Management	No		LS

## Storm Water BMP Quantity Summary

ID	BEES	Temporary Non-Storm Water Management	STD. Det. (Y or N)	Quantity	Unit
NS-1	JSM*	Water Conservation Practices	No		LS
NS-2	JSM*	Dewatering Operations	No		LS
NS-3	JSM*	Paving & Grinding Operations			LS
NS-6	JSM*	Illicit Connection/Illegal Discharge Detection and Reporting	No		LS
NS-7	JSM*	Potable Water/Irrigation	No		LS
NS-8	JSM*	Vehicle and Equipment Cleaning	No		LS
NS-9	JSM*	Vehicle and Equipment Fueling	No		LS
NS-10	JSM*	Vehicle and Equipmt Maintenance	No		LS
NS-11	JSM*	Pile Driving Operations	No		LS
NS-12	JSM*	Concrete Curing	No		LS
NS-13	JSM*	Material & Equipmt use over water	No		LS
NS-14	JSM*	Concrete Finishing	No		LS
NS-15	JSM*	Structure Demolition/Removal Over or Adjacent to Water	No		LS
	<b>130100</b>	<b>*Job Site Management</b>	No	1	LS

ID	BEES	Miscellaneous Items	STD. Det. (Y or N)	Quantity	Unit
	130200	Prepare WPCP	No	1	LS
	066595	Water Pollution Control Maintenance Sharing		1	LS
	066596	Additional Water Pollution Control		1	LS
	130800	Temporary Active Treatment System	No	1	



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**St. Gibbons**  
 CONSULTANT FUNCTIONAL SUPERVISOR  
 RAMSEY HISSEN  
 CALCULATED-DESIGNED BY  
 CHECKED BY  
 MARIA SEDGHI  
 ELIE ABI-JAOUDE  
 REVISED BY  
 DATE REVISED

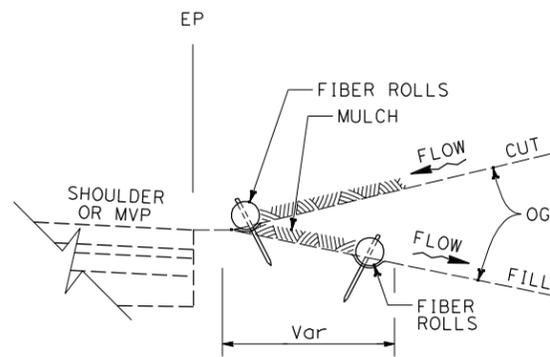
**EROSION CONTROL QUANTITIES AT ELECTRICAL CONDUIT TRENCHING LOCATIONS (N)**

SHEET No.	MULCH
	CY
xxxxxx	xxxxx
TOTAL	xxxxx

(N) - NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY

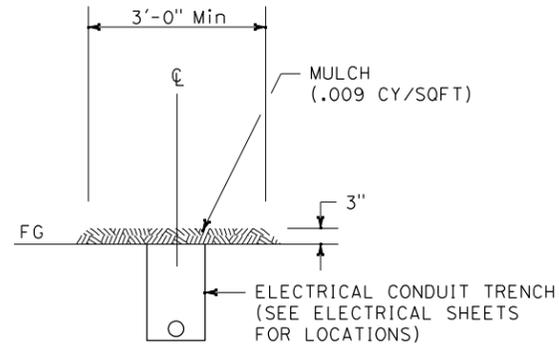
**EROSION CONTROL QUANTITIES**

SHEET No.	LOCATION	WOOD MULCH	FIBER ROLLS
		CY	LF
L-15	L+	14	180
L-17	L+	14	180
L-19	L+	14	90
L-21	L+	14	90
L-28	L+	14	90
L-33	L+	14	90
L-38	L+	14	90
L-42	L+	14	90
L-48	L+	14	90
L-56	L+	14	90
TOTAL		140	1100

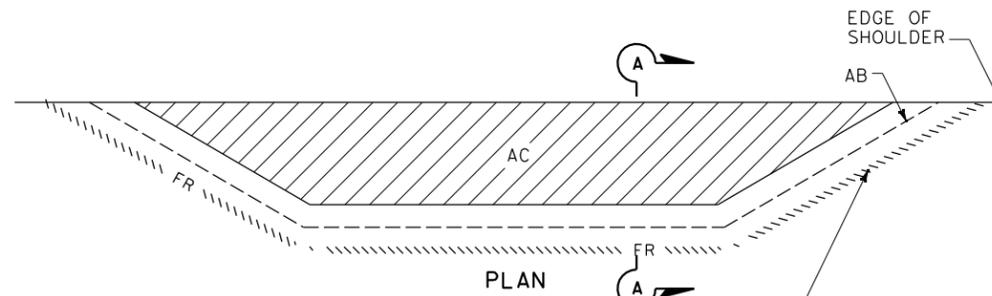


SECTION

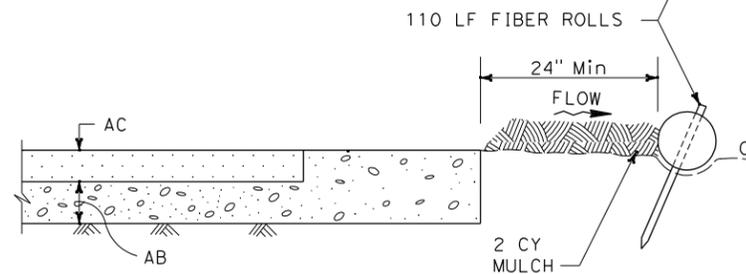
**EROSION CONTROL FOR CUT OR FILL CONDITION, TYPICAL**



**TYPICAL SECTION EROSION CONTROL FOR ELECTRICAL CONDUIT TRENCHING LOCATIONS, TYPICAL**



PLAN



SECTION A-A

**EROSION CONTROL AT MAINTENANCE VEHICLE PULLOUT (MVP) LOCATIONS, TYPICAL**

**EROSION CONTROL DETAILS AND QUANTITIES**

NOT TO SCALE

**ECD-1**

APPROVED FOR EROSION CONTROL WORK ONLY

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	Alameda	680	R20.1-R21.9/ R0.0-14.0	24	87

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

URS CORPORATION  
 100 W. SAN FERNANDO ST  
 SUITE 200  
 SAN JOSE, CA 95113-2254

BAY AREA INFRASTRUCTURE FINANCING AUTHORITY  
 101 EIGHTH ST, 3rd Floor  
 OAKLAND, CA 94607



**Checklist SW-1, Site Data Sources**

Prepared by: WRECO Date: January 2015 District-Co-Route: 04-ALA/CC-680

PM : R21.0-R21.9 (ALA), R0.0-R14.0 (CC) Project ID (or EA): 04140004891

RWQCB: Region 2, San Francisco Bay

Information for the following data categories should be obtained, reviewed and referenced as necessary throughout the project planning phase. Collect any available documents pertaining to the category and list them and reference your data source. For specific examples of documents within these categories, refer to Section 5.5 of this document. Example categories have been listed below; add additional categories, as needed. Summarize pertinent information in Section 2 of the SWDR.

DATA CATEGORY/SOURCES	Date
<b>Topographic</b>	
<ul style="list-style-type: none"> <li>USGS Topo</li> </ul>	
<ul style="list-style-type: none"> <li>BATA_CC-680.dtm</li> </ul>	September 2014
<b>Hydraulic</b>	
<ul style="list-style-type: none"> <li>Caltrans Water Quality Planning Tool</li> </ul>	Accessed October 2014
<ul style="list-style-type: none"> <li>WRECO Drainage Report EA 04-3G9501</li> </ul>	October 2014
<b>Soils</b>	
<ul style="list-style-type: none"> <li><i>Paleontological Identification Report for the MTC Express Lanes Phase 1 Project</i> (Cogstone Resource Management Inc.)</li> </ul>	2013
<ul style="list-style-type: none"> <li>Initial Site Assessment (ISA) Report (Parikh Consultants Inc)</li> </ul>	2012
<ul style="list-style-type: none"> <li>Geotechnical Design Report for the Overhead Sign Structures of I-680 Express Lanes Project” (URS)</li> </ul>	2014
<b>Climatic</b>	
<ul style="list-style-type: none"> <li>Natural Environment Study (HDR)</li> </ul>	2013
<b>Water Quality</b>	
<ul style="list-style-type: none"> <li>Groundwater Ambient Monitoring and Assessment Database (SWRCB)</li> </ul>	
<b>Other Data Categories</b>	
<ul style="list-style-type: none"> <li>Natural Environment Study (HDR)</li> </ul>	2013
<ul style="list-style-type: none"> <li><i>Delineation of Wetlands and Other Waters of the United States</i> (HDR)</li> </ul>	2013
<ul style="list-style-type: none"> <li>Association of Bay Area Governments</li> </ul>	2010

**Checklist SW-2, Storm Water Quality Issues Summary**

Prepared by: WRECO Date: January 2015 District-Co-Route: 04-ALA/CC-680

PM : R21.0-R21.9 (ALA), R0.0-R14.0 (CC) Project ID (or EA): 04140004891

RWQCB: Region 2, San Francisco Bay

The following questions provide a guide to collecting critical information relevant to project stormwater quality issues. Complete responses to applicable questions, consulting other Caltrans functional units (Environmental, Landscape Architecture, Maintenance, etc.) and the District/Regional Storm Water Coordinator as necessary. Summarize pertinent responses in Section 2 of the SWDR.

- |  |  |  |
|--|--|--|
| 1. Determine the receiving waters that may be affected by the project throughout the project life cycle (i.e., construction, maintenance and operation).   | <input checked="" type="checkbox"/> Complete | <input type="checkbox"/> NA            |
| 2. For the project limits, list the 303(d) impaired receiving water bodies and their constituents of concern.  | <input checked="" type="checkbox"/> Complete | <input type="checkbox"/> NA            |
| 3. Determine if there are any municipal or domestic water supply reservoirs or groundwater percolation facilities within the project limits. Consider appropriate spill contamination and spill prevention control measures for these new areas. | <input checked="" type="checkbox"/> Complete | <input type="checkbox"/> NA            |
| 4. Determine the RWQCB special requirements, including TMDLs, effluent limits, etc.  | <input checked="" type="checkbox"/> Complete | <input type="checkbox"/> NA            |
| 5. Determine regulatory agencies seasonal construction and construction exclusion dates or restrictions required by federal, state, or local agencies.   | <input type="checkbox"/> Complete            | <input type="checkbox"/> NA            |
| 6. Determine if a 401 certification will be required.  | <input checked="" type="checkbox"/> Complete | <input type="checkbox"/> NA            |
| 7. List rainy season dates.  | <input checked="" type="checkbox"/> Complete | <input type="checkbox"/> NA            |
| 8. Determine the general climate of the project area. Identify annual rainfall and rainfall intensity curves.  | <input checked="" type="checkbox"/> Complete | <input type="checkbox"/> NA            |
| 9. If considering Treatment BMPs, determine the soil classification, permeability, erodibility, and depth to groundwater.  | <input checked="" type="checkbox"/> Complete | <input type="checkbox"/> NA            |
| 10. Determine contaminated soils within the project area.  | <input checked="" type="checkbox"/> Complete | <input type="checkbox"/> NA            |
| 11. Determine the total disturbed soil area of the project.  | <input checked="" type="checkbox"/> Complete | <input type="checkbox"/> NA            |
| 12. Describe the topography of the project site.   | <input checked="" type="checkbox"/> Complete | <input type="checkbox"/> NA            |
| 13. List any areas outside of the Caltrans right-of-way that will be included in the project (e.g. contractor's staging yard, work from barges, easements for staging, etc.).  | <input checked="" type="checkbox"/> Complete | <input type="checkbox"/> NA            |
| 14. Determine if additional right-of-way acquisition or easements and right-of-entry will be required for design, construction and maintenance of BMPs. If so, how much?   | <input checked="" type="checkbox"/> Complete | <input type="checkbox"/> NA            |
| 15. Determine if a right-of-way certification is required.   | <input checked="" type="checkbox"/> Complete | <input type="checkbox"/> NA            |
| 16. Determine the estimated unit costs for right-of-way should it be needed for Treatment BMPs, stabilized conveyance systems, lay-back slopes, or interception ditches.   | <input type="checkbox"/> Complete            | <input checked="" type="checkbox"/> NA |
| 17. Determine if project area has any slope stabilization concerns.  | <input checked="" type="checkbox"/> Complete | <input type="checkbox"/> NA            |
| 18. Describe the local land use within the project area and adjacent areas.  | <input checked="" type="checkbox"/> Complete | <input type="checkbox"/> NA            |
| 19. Evaluate the presence of dry weather flow.   | <input checked="" type="checkbox"/> Complete | <input type="checkbox"/> NA            |

**Checklist SW-3, Measures for Avoiding or Reducing Potential Storm Water Impacts**

Prepared by: WRECO Date: January 2015 District-Co-Route: 04-ALA/CC-680

PM : R21.0-R21.9 (ALA), R0.0-R14.0 (CC) Project ID (or EA): 04140004891

RWQCB: Region 2, San Francisco Bay

The PE must confer with other functional units, such as Landscape Architecture, Hydraulics, Environmental, Materials, Construction and Maintenance, as needed to assess these issues. Summarize pertinent responses in Section 2 of the SWDR.

Options for avoiding or reducing potential impacts during project planning include the following:

1. Can the project be relocated or realigned to avoid/reduce impacts to receiving waters or to increase the preservation of critical (or problematic) areas such as floodplains, steep slopes, wetlands, and areas with erosive or unstable soil conditions? Yes No NA
  
2. Can structures and bridges be designed or located to reduce work in live streams and minimize construction impacts? Yes No NA
  
3. Can any of the following methods be utilized to minimize erosion from slopes:
  - a. Disturbing existing slopes only when necessary? Yes No NA
  - b. Minimizing cut and fill areas to reduce slope lengths? Yes No NA
  - c. Incorporating retaining walls to reduce steepness of slopes or to shorten slopes? Yes No NA
  - d. Acquiring right-of-way easements (such as grading easements) to reduce steepness of slopes? Yes No NA
  - e. Avoiding soils or formations that will be particularly difficult to re-stabilize? Yes No NA
  - f. Providing cut and fill slopes flat enough to allow re-vegetation and limit erosion to pre-construction rates? Yes No NA
  - g. Providing benches or terraces on high cut and fill slopes to reduce concentration of flows? Yes No NA
  - h. Rounding and shaping slopes to reduce concentrated flow? Yes No NA
  - i. Collecting concentrated flows in stabilized drains and channels? Yes No NA
  
4. Does the project design allow for the ease of maintaining all BMPs? Yes No
  
5. Can the project be scheduled or phased to minimize soil-disturbing work during the rainy season? Yes No
  
6. Can permanent storm water pollution controls such as paved slopes, vegetated slopes, basins, and conveyance systems be installed early in the construction process to provide additional protection and to possibly utilize them in addressing construction storm water impacts? Yes No NA

**Design Pollution Prevention BMPs**  
**Checklist DPP-1, Part 1**

Prepared by: WRECO Date: January 2015 District-Co-Route: 04-ALA/CC-680

PM : R21.0-R21.9 (ALA), R0.0-R14.0 (CC) Project ID (or EA): 04140004891

RWQCB: Region 2, San Francisco Bay

**Consideration of Design Pollution Prevention BMPs**

**Consideration of Downstream Effects Related to Potentially Increased Flow [to streams or channels]**

- Will project increase velocity or volume of downstream flow? Yes No NA
- Will the project discharge to unlined channels? Yes No NA
- Will project increase potential sediment load of downstream flow? Yes No NA
- Will project encroach, cross, realign, or cause other hydraulic changes to a stream that may affect downstream channel stability? Yes No NA

If Yes was answered to any of the above questions, consider **Downstream Effects Related to Potentially Increased Flow**, complete the DPP-1, Part 2 checklist.

**Slope/Surface Protection Systems**

- Will project create new slopes or modify existing slopes? Yes No NA

If Yes was answered to the above question, consider **Slope/Surface Protection Systems**, complete the DPP-1, Part 3 checklist.

**Concentrated Flow Conveyance Systems**

- Will the project create or modify ditches, dikes, berms, or swales? Yes No NA
- Will project create new slopes or modify existing slopes? Yes No NA
- Will it be necessary to direct or intercept surface runoff? Yes No NA
- Will cross drains be modified? Yes No NA

If Yes was answered to any of the above questions, consider **Concentrated Flow Conveyance Systems**; complete the DPP-1, Part 4 checklist.

**Preservation of Existing Vegetation**

It is the goal of the Storm Water Program to maximize the protection of desirable existing vegetation to provide erosion and sediment control benefits on all projects. Complete

Consider **Preservation of Existing Vegetation**, complete the DPP-1, Part 5 checklist.

**Design Pollution Prevention BMPs**

**Checklist DPP-1, Part 2**

Prepared by: WRECO Date: January 2015 District-Co-Route: 04-ALA/CC-680

PM : R21.0-R21.9 (ALA), R0.0-R14.0 (CC) Project ID (or EA): 04140004891

RWQCB: Region 2, San Francisco Bay

**Downstream Effects Related to Potentially Increased Flow**

- 1. Review total paved area and reduce to the maximum extent practicable.  Complete
- 2. Review channel lining materials and design for stream bank erosion control.  Complete
  - (a) See Chapters 860 and 870 of the HDM.  Complete
  - (b) Consider channel erosion control measures within the project limits as well as downstream. Consider scour velocity.  Complete
- 3. Include, where appropriate, energy dissipation devices at culvert outlets.  Complete
- 4. Ensure all transitions between culvert outlets/headwalls/wingwalls and channels are smooth to reduce turbulence and scour.  Complete
- 5. Include, if appropriate, peak flow attenuation basins or devices to reduce peak discharges.
- 6. Calculate the water quality volume infiltrated by DPP BMPs within the project limits. Include the percentage of the water quality volume for each BMP and subwatershed, as appropriate, for site conditions. These calculations will be used later in the T-1 checklist.  Complete

<b>Design Pollution Prevention BMPs</b>	
<b>Checklist DPP-1, Part 3</b>	
Prepared by: <u>WRECO</u>	Date: <u>January 2015</u> District-Co-Route: <u>04-ALA/CC-680</u>
PM : <u>R21.0-R21.9 (ALA), R0.0-R14.0 (CC)</u> Project ID (or EA): <u>04140004891</u>	
RWQCB: <u>Region 2, San Francisco Bay</u>	

**Slope / Surface Protection Systems**

1. What are the proposed areas of cut and fill? (attach plan or map)  Complete
2. Were benches or terraces provided on high cut and fill slopes to reduce concentration of flows?  Yes  No
3. Were slopes rounded and/or shaped to reduce concentrated flow?  Yes  No
4. Were concentrated flows collected in stabilized drains or channels?  Yes  No
5. Are new or disturbed slopes > 4:1 horizontal:vertical (h:v)?  Yes  No  
 If Yes, District Landscape Architect must prepare or approve an erosion control plan, at the District's discretion.
6. Are new or disturbed slopes > 2:1 (h:v)?  Yes  No  
 If Yes, Geotechnical Services must prepare a Geotechnical Design Report, and the District Landscape Architect should prepare or approve an erosion control plan. Concurrence must be obtained from the District Maintenance Storm Water Coordinator for slopes steeper than 2:1 (h:v).
7. Estimate the net new impervious area that will result from this project. 0.16 acres  Complete

**VEGETATED SURFACES**

1. Identify existing vegetation.  Complete
2. Evaluate site to determine soil types, appropriate vegetation and planting strategies.  Complete
3. How long will it take for permanent vegetation to establish?  Complete
4. Minimize overland and concentrated flow depths and velocities.  Complete

**HARD SURFACES**

1. Are hard surfaces required?  Yes  No  
 If Yes, document purpose (safety, maintenance, soil stabilization, etc.), types, and general locations of the installations.  Complete
- Review appropriate SSPs for Vegetated Surface and Hard Surface Protection Systems.  Complete

<p><b>Design Pollution Prevention BMPs</b></p> <p><b>Checklist DPP-1, Part 4</b></p> <p>Prepared by: <u>WRECO</u>      Date: <u>January 2015</u>      District-Co-Route: <u>04-ALA/CC-680</u></p> <p>PM : <u>R21.0-R21.9 (ALA), R0.0-R14.0 (CC)</u> Project ID (or EA): <u>04140004891</u></p> <p>RWQCB: <u>Region 2, San Francisco Bay</u></p>
---

**Concentrated Flow Conveyance Systems**

**Ditches, Berms, Dikes and Swales**

- 1. Consider Ditches, Berms, Dikes, and Swales as per Topics 813, 834.3, and 835, and Chapter 860 of the HDM.  Complete
- 2. Evaluate risks due to erosion, overtopping, flow backups or washout.  Complete
- 3. Consider outlet protection where localized scour is anticipated.  Complete
- 4. Examine the site for run-on from off-site sources.  Complete
- 5. Consider channel lining when velocities exceed scour velocity for soil.  Complete

**Overside Drains**

- 1. Consider downdrains, as per Index 834.4 of the HDM.  Complete
- 2. Consider paved spillways for side slopes flatter than 4:1 h:v.  Complete

**Flared Culvert End Sections**

- 1. Consider flared end sections on culvert inlets and outlets as per Chapter 827 of the HDM.  Complete

**Outlet Protection/Velocity Dissipation Devices**

- 1. Consider outlet protection/velocity dissipation devices at outlets, including cross drains, as per Chapters 827 and 870 of the HDM.  Complete

Review appropriate SSPs for Concentrated Flow Conveyance Systems.  Complete

**Design Pollution Prevention BMPs**  
**Checklist DPP-1, Part 5**

Prepared by: WRECO Date: January 2015 District-Co-Route: 04-ALA/CC-680

PM : R21.0-R21.9 (ALA), R0.0-R14.0 (CC) Project ID (or EA): 04140004891

RWQCB: Region 2, San Francisco Bay

**Preservation of Existing Vegetation**

1. Review Preservation of Property, (Clearing and Grubbing) to reduce clearing and grubbing and maximize preservation of existing vegetation.  Complete
  
2. Has all vegetation to be retained been coordinated with Environmental, and identified and defined in the contract plans?  Yes  No
  
3. Have steps been taken to minimize disturbed areas, such as locating temporary roadways to avoid stands of trees and shrubs and to follow existing contours to reduce cutting and filling?  Complete
  
4. Have impacts to preserved vegetation been considered while work is occurring in disturbed areas?  Yes  No
  
5. Are all areas to be preserved delineated on the plans?  Yes  No

<b>Construction Site BMPs</b>	
<b>Checklist CS-1, Part 1</b>	
Prepared by: <u>WRECO</u>	Date: <u>January 2015</u> District-Co-Route: <u>04-ALA/CC-680</u>
PM : <u>R21.0-R21.9 (ALA), R0.0-R14.0 (CC)</u> Project ID (or EA): <u>04140004891</u>	
RWQCB: <u>Region 2, San Francisco Bay</u>	

**Soil Stabilization**

General Parameters

1. How many rainy seasons are anticipated between begin and end of construction? 1
2. What is the total disturbed soil area for the project? (ac) 0.72 ac
  - (a) How much of the project DSA consists of slopes 4:1 (h:v) or flatter? Sheet flow not to exceed 20 ft (ac). 0 ac
  - (b) How much of the project DSA consists of 4:1 (h:v) < slopes < 2:1 (h:v)? Sheet flow not exceed 15 ft (ac). 0.72 ac
  - (c) How much of the project DSA consists of slopes 2:1 (h:v) and steeper? Sheet flow not exceed 10 ft (ac). 0 ac
3. What rainfall area does the project lie within? (Refer to 2003 Caltrans SWMP) 2
4. Review the required combination of temporary soil stabilization and temporary sediment controls and barriers for area, slope inclinations, rainy and non-rainy season, and active and non-active disturbed soil areas. (Refer to Tables 2-2, and 2-3 of the Construction Site Best Management Practices Manual for Rainfall Area requirements.)  Complete

Scheduling (SS-1)

5. Does the project have a duration of more than one rainy season and have disturbed soil area in excess of 25 acres?  Yes  No
  - (a) Include multiple mobilizations (Move-in/Move-out) as a separate contract bid line item to implement permanent erosion control or revegetation work on slopes that are substantially complete. (Estimate at least 6 mobilizations for each additional rainy season. Designated Construction Representative may suggest an alternate number of mobilizations.)  Complete

- (b) Edit Order of Work specifications for permanent erosion control or revegetation work to be implemented on slopes that are substantially complete.  Complete
- (c) Edit permanent erosion control or revegetation specifications to require seeding and planting work to be performed when optimal.  Complete

Preservation of Existing Vegetation (SS-2)

- 6. Do Environmentally Sensitive Areas (ESAs) exist within or adjacent to the project limits? (Verify the completion of DPP-1, Part 5)  Yes  No
  - (a) Verify the protection of ESAs through delineation on all project plans.  Complete
  - (b) Protect from clearing and grubbing and other construction disturbance by enclosing the ESA perimeter with high visibility plastic fence or other BMP.  Complete
- 7. Are there areas of existing vegetation (mature trees, native vegetation, landscape planting, etc.) that need not be disturbed by project construction? Will areas designated for proposed treatment BMPs need protection (infiltration characteristics, vegetative cover, etc.)? (Coordinate with District Environmental and Construction to determine limits of work necessary to preserve existing vegetation to the maximum extent practicable.)  Yes  No
  - (a) Designate as outside of limits of work (or designate as ESAs) and show on all project plans.  Complete
  - (b) Protect with high visibility plastic fence or other BMP.  Complete
- 8. If yes for 6, 7, or both, then designate ESA fencing as a separate contract bid line item, *if not already incorporated as part of design pollution prevention work (See DPP-1, Part 5).*  Complete

Slope Protection

- 9. Provide a soil stabilization BMP(s) appropriate for the DSA, slope steepness, slope length, and soil erodibility. (Consult with District/Regional Landscape Architect.)
  - (a) Select SS-3 (Hydraulic Mulch), SS-4 (Hydroseeding), SS-5 (Soil Binders), SS-6 (Straw Mulch), SS-7 (Geotextiles, Mats, Plastic Covers, and Erosion Control Blankets), SS-8 (Wood Mulching), other BMPs or a combination to cover the DSA throughout the project's rainy season.  Complete
  - (b) Increase the quantities by 25% for each additional rainy season. (Designated Construction Representative may suggest an alternate increase.)  Complete

- (c) Designate as a separate contract bid line item.  Complete

Slope Interrupter Devices

- 10. Provide slope interrupter devices for all slopes with slope lengths equal to or greater than of 20 ft in length, in accordance with CGP requirements..
  - (a) Select SC-5 (Fiber Rolls) or other BMPs to protect slopes throughout the project's rainy season.  Complete
  - (b) For slope inclination of 4:1 (h:v) and flatter, SC-5 (Fiber Rolls) or other BMPs shall be placed along the contour and spaced 20 ft on center.  Complete
  - (c) For slope inclination between 4:1 (h:v) and 2:1 (h:v), SC-5 (Fiber Rolls) or other BMPs shall be placed along the contour and spaced 15 ft on center.  Complete
  - (d) For slope inclination of 2:1 (h:v) and greater, SC-5 (Fiber Rolls) or other BMPs shall be placed along the contour and spaced 10 ft on center.  Complete
  - (e) Increase the quantities by 25% for each additional rainy season. (Designated Construction Representative may suggest alternate increase.)  Complete
  - (f) Designate as a separate contract bid line item.  Complete

Channelized Flow

- 11. Identify locations within the project site where concentrated flow from stormwater runoff can erode areas of soil disturbance. Identify locations of concentrated flow that enters the site from outside of the right-of-way (off-site run-on).  Complete
  - (a) Utilize SS-7 (Geotextiles, Mats, Plastic Covers, and Erosion Control Blankets), SS-9 (Earth Dikes/Swales, Ditches), SS-10 (Outlet Protection/Velocity Dissipation), SS-11 (Slope Drains), SC-4 (Check Dams), or other BMPs to convey concentrated flows in a non-erosive manner.  Complete
  - (b) Designate as a separate contract bid line item.  Complete

<p><b>Construction Site BMPs</b></p> <p><b>Checklist CS-1, Part 2</b></p>
<p>Prepared by: <u>WRECO</u>      Date: <u>January 2015</u>      District-Co-Route: <u>04-ALA/CC-680</u></p>
<p>PM : <u>R21.0-R21.9 (ALA), R0.0-R14.0 (CC)</u> Project ID (or EA): <u>04140004891</u></p>
<p>RWQCB: <u>Region 2, San Francisco Bay</u></p>

***Sediment Control***

*Perimeter Controls - Run-off Control*

1. Is there a potential for sediment laden sheet and concentrated flows to discharge offsite from runoff cleared and grubbed areas, below cut slopes, embankment slopes, etc.?  Yes     No
  - (a) Select linear sediment barrier such as SC-1 (Silt Fence), SC-5 (Fiber Rolls), SC-6 (Gravel Bag Berm), SC-8 (Sand Bag Barrier), SC-9 (Straw Bale Barrier), or a combination to protect wetlands, water courses, roads (paved and unpaved), construction activities, and adjacent properties. (Coordinate with District Construction for selection and preference of linear sediment barrier BMPs.)  Complete
  - (b) Increase the quantities by 25% for each additional rainy season. (Designated Construction Representative may suggest an alternate increase.)  Complete
  - (c) Designate as a separate contract bid line item.  Complete

*Perimeter Controls - Run-on Control*

2. Do locations exist where sheet flow upslope of the project site and where concentrated flow upstream of the project site may contact DSA and construction activities?  Yes     No
  - (a) Utilize linear sediment barriers such as SS-9 (Earth Dike/Drainage Swales and Lined Ditches), SC-5 (Fiber Rolls), SC-6 (Gravel Bag Berm), SC-8 (Sand Bag Barrier), SC-9 (Straw Bale Barrier), or other BMPs to convey flows through and/or around the project site. (Coordinate with District Construction for selection and preference of perimeter control BMPs.)  Complete
  - (b) Designate as a separate contract bid line item.  Complete



Storm Drain Inlets

- 3. Do existing or proposed drainage inlets exist within the project limits? Yes No
  - (a) Select SC-10 (Storm Drain Inlet Protection) to protect municipal storm drain systems or receiving waters wetlands at each drainage inlet. (Coordinate with District Construction for selection and preference of inlet protection BMPs.) Complete
  - (b) Designate as a separate contract bid line item. Complete
- 4. Can existing or proposed drainage inlets utilize an excavated sediment trap as described in SC-10 (Storm Drain Inlet Protection- Type 2)? Yes No
  - (a) Include with other types of SC-10 (Storm Drain Inlet Protection). Complete

Sediment/Desilting Basin (SC-2)

- 5. Does the project lie within a Rainfall Area where the required combination of temporary soil stabilization and sediment control BMPs includes desilting basins? (Refer to Tables 2-1, 2-2, and 2-3 of the Construction Site Best Management Practices Manual for Rainfall Area requirements.) Yes No
  - (a) Consider feasibility for desilting basin allowing for available right-of-way within the project limits, topography, soil type, disturbed soil area within the watershed, and climate conditions. Document if the inclusion of sediment/desilting basins is infeasible. Complete
  - (b) If feasible, design desilting basin(s) per the guidance in the CASQA Construction BMP Guidance HandbookI to maximize capture of sediment-laden runoff. Designate as a separate contract bid item. Complete
- 6. Is ATS to be used for controlling sediment? Yes No
  - (a) If "yes", then will desilting basin or other means of natural storage be used? Yes No
  - (b) If "no", then plan for storage tanks sufficient to hold treatment volume. Complete
- 7. Will the project benefit from the early implementation of proposed permanent Treatment BMPs? (Coordinate with District Construction.) Yes No
  - (a) Edit Order of Work specifications for permanent treatment BMP work to be implemented in a manner that will allow its use as a construction site BMP. Complete

Sediment Trap (SC-3)

- 8. Can sediment traps be located to collect channelized runoff from disturbed soil areas prior to discharge? Yes No
  - (a) Design sediment traps in accordance with the CASQA Construction BMP GuidanceHandbook. Complete
  - (b) Designate as a separate contract bid line item. Complete

<b>Construction Site BMPs</b>	
<b>Checklist CS-1, Part 3</b>	
Prepared by: <u>WRECO</u>	Date: <u>January 2015</u> District-Co-Route: <u>04-ALA/CC-680</u>
PM : <u>R21.0-R21.9 (ALA), R0.0-R14.0 (CC)</u> Project ID (or EA): <u>04140004891</u>	
RWQCB: <u>Region 2, San Francisco Bay</u>	

**Tracking Controls**

Stabilized Construction Entrance/Exit (TC-1)

- 1. Are there points of entrance and exit from the project site to paved roads where mud and dirt could be transported offsite by construction equipment? (Coordinate with District Construction for selection and preference of tracking control BMPs.)  Yes  No
- (a) Identify and designate these entrance/exit points as stabilized construction entrances (TC-1).  Complete
- (b) Designate as a separate contract bid line item.  Complete

Tire/Wheel Wash (TC-3)

- 1. Are site conditions anticipated that would require additional or modified tracking controls such as entrance/outlet tire wash? (Coordinate with District Construction.)  Yes  No
- Designate as a separate contract bid line item.  Complete

Stabilized Construction Roadway (TC-2)

- 3. Are temporary access roads necessary to access remote construction activity locations or to transport materials and equipment? (In addition to controlling dust and sediment tracking, access roads limit impact to sensitive areas by limiting ingress, and provide enhanced bearing capacity.) (Coordinate with District Construction.)  Yes  No
- (a) Designate these temporary access roads as stabilized construction roadways (TC-2).  Complete
- (b) Designate as a separate contract bid line item.  Complete

Street Sweeping and Vacuuming (SC-7)

- 1. Is there a potential for tracked sediment or construction related residues to be transported offsite and deposited on public or private roads? (Coordinate with District Construction for preference of including street sweeping and vacuuming with tracking control BMPs.)  Yes  No
- Designate as a separate contract bid line item.  Complete

**Construction Site BMPs**  
**Checklist CS-1, Part 4**

Prepared by: WRECO Date: January 2015 District-Co-Route: 04-ALA/CC-680

PM : R21.0-R21.9 (ALA), R0.0-R14.0 (CC) Project ID (or EA): 04140004891

RWQCB: Region 2, San Francisco Bay

**Wind Erosion Controls**

Wind Erosion Control (WE-1)

1. Is the project located in an area where standard dust control practices in accordance with Standard Specifications, Section 13: Dust Control, are anticipated to be inadequate during construction to prevent the transport of dust offsite by wind? *(Note: Dust control by water truck application is paid for through the various items of work. Dust palliative, if it is included, is paid for as a separate item.)*

Yes     No
  
- (a) Select SS-3 (Hydraulic Mulch), SS-4 (Hydroseeding), SS-5 (Soil Binders), SS-7 (Geotextiles, Mats, Plastic Covers, and Erosion Control Blankets), SS-8 (Wood Mulching) or a combination to cover the DSA subject to wind erosion year-round, especially when significant wind and dry conditions are anticipated during project construction. (Coordinate with District Construction for selection and preference of wind erosion control BMPs.)
 

Complete
  
- (b) Designate as a separate contract bid line item.
 

Complete

<p><b>Construction Site BMPs</b></p> <p><b>Checklist CS-1, Part 5</b></p>
<p>Prepared by: <u>WRECO</u> Date: <u>January 2015</u> District-Co-Route: <u>04-ALA/CC-680</u></p>
<p>PM : <u>R21.0-R21.9 (ALA), R0.0-R14.0 (CC)</u> Project ID (or EA): <u>04140004891</u></p>
<p>RWQCB: <u>Region 2, San Francisco Bay</u></p>

***Non-Storm Water Management***

Temporary Stream Crossing (NS-4) & Clear Water Diversion (NS-5)

- 1. Will construction activities occur within a waterbody or watercourse such as a lake, wetland, or stream? (Coordinate with District Construction for selection and preference for stream crossing and clear water diversion BMPs.) Yes No
  - (a) Select from types offered in NS-4 (Temporary Stream Crossing) to provide access through watercourses consistent with permits and agreements.<sup>1</sup> Complete
  - (b) Select from types offered in NS-5 (Clear Water Diversion) to divert watercourse consistent with permits and agreements.<sup>1</sup> Complete
  - (c) Designate as a separate contract bid line item(s). Complete

Other Non-Storm Water Management BMPs

- 2. Are construction activities anticipated that will generate wastes or residues with the potential to discharge pollutants? Yes No
  - (a) Identify potential pollutants associated with the anticipated construction activity and select the corresponding BMP such as NS-1 (Water Conservation Practices), NS-2 (Dewatering Operations), NS-3 (Paving and Grinding Operations), NS-7 (Potable Water/Irrigation), NS-8 (Vehicle and Equipment Cleaning), NS-9 (Vehicle and Equipment Fueling), NS-10 (Vehicle and Equipment Maintenance), NS-11 (Pile Driving Operations), NS-12 (Concrete Curing), NS-13 (Material and Equipment Use Over Water), NS-14 (Concrete Finishing), and NS-15 (Structure Demolition/Removal Over or Adjacent to Water).<sup>1</sup> Complete
  - (b) Verify that costs for non-stormwater management BMPs are identified in the contract documents. Designate BMP as a separate contract bid line item if the requirements in Construction Site Management Standard Specifications Section 13 are anticipated to be inadequate or if requested by Construction. Complete

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<sup>1</sup> Coordinate with District Environmental for consistency with US Army Corps of Engineers 404 and 401 permits and Dept. of Fish and Game 1601 Streambed alteration Agreements.

<p><b>Construction Site BMPs</b></p> <p><b>Checklist CS-1, Part 6</b></p>
<p>Prepared by: <u>WRECO</u> Date: <u>January 2015</u> District-Co-Route: <u>04-ALA/CC-680</u></p>
<p>PM : <u>R21.0-R21.9 (ALA), R0.0-R14.0 (CC)</u> Project ID (or EA): <u>04140004891</u></p>
<p>RWQCB: <u>Region 2, San Francisco Bay</u></p>

***Waste Management & Materials Pollution Control***

Concrete Waste Management (WM-8)

1. Does the project include concrete placement or mortar mixing?  Yes  No
- (a) Select from types offered in WM-8 (Concrete Waste Management) to provide concrete washout facilities. In addition, consider portable concrete washouts and vendor supplied concrete waste management services. (Coordinate with District Construction for selection and preference of waste management and materials pollution control BMPs.)  Complete
- (b) Designate as a separate contract bid line item if the quantity of concrete waste and washout are anticipated to exceed 5.2 yd<sup>3</sup> or if requested by Construction.  Complete

Other Waste Management and Materials Pollution Controls

2. Are construction activities anticipated that will generate wastes or residues with the potential to discharge pollutants?  Yes  No
- (a) Identify potential pollutants associated with the anticipated construction activity and select the corresponding BMP such as WM-1 (Material Delivery and Storage), WM-2 (Material Use), WM-4 (Spill Prevention and Control), WM-5 (Solid Waste Management), WM-6 (Hazardous Waste Management), WM-7 (Contaminated Soil Management), WM-9 (Sanitary/Septic Waste Management) and WM-10 (Liquid Waste Management)  Complete
- (b) Verify that costs for waste management and materials pollution control BMPs are identified in the contract documents. Designate BMP as a separate contract bid line item if the requirements in Construction Site Management Standard Specifications section 13 are anticipated to be inadequate or if requested by Construction.  Complete

Temporary Stockpiles (Soil, Materials, and Wastes)

3. Are stockpiles of soil, etc. anticipated during construction?  Yes  No

- (a) Select WM-3 (Stockpile Management), SS-3 (Hydraulic Mulch), SS-4 (Hydroseeding), SS-5 (Soil Binders), SS-7 (Geotextiles, Mats, Plastic Covers, and Erosion Control Blankets), or a combination as appropriate to cover temporary stockpiles of soil, etc.  Complete
  
- (b) Select linear sediment barrier such as SC-1 (Silt Fence), SC-5 (Fiber Rolls), SC-6 (Gravel Bag Berm), SC-8 (Sand Bag Barrier), SC-9 (Straw Bale Barrier), or a combination to encircle temporary stockpiles of soil, etc. (Coordinate with District Construction for selection and preference of BMPs related to stockpiles.)  Complete
  
- (c) Designate as a separate contract bid line item if the requirements in Construction Site Management Standard Specifications section 13 are anticipated to be inadequate or if requested by Construction.  Complete
  
- 4. Is there a potential for dust and debris from construction material (fill material, etc.) and waste (concrete, contaminated soil, etc.) stockpiles to be transported offsite by wind?  Yes    No
  
- (a) Select SS-7, temporary cover, plastic sheeting or other BMP to cover stockpiles subject to wind erosion year-round, especially when significant wind and dry conditions are anticipated during project construction. (Coordinate with District Construction for selection and preference of wind erosion control BMPs.)  Complete
  
- (b) Designate as a separate contract bid line item.  Complete