CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

Tentative Order

Waste Discharge Requirements for:

Santa Clara Valley Water District and U.S. Army Corps of Engineers
Upper Berryessa Creek Flood Risk Management Project, Santa Clara County

The California Regional Water Quality Control Board, San Francisco Bay Region (Water Board), finds that:

1. The Santa Clara Valley Water District (District) delivers water and is responsible for flood protection and stream stewardship in Santa Clara County (County). The District is charged with providing local flood protection within five major watersheds in the County, including the 322-square mile Coyote Creek watershed, which drains from the southeastern hills of the County to Lower San Francisco Bay.

2. Berryessa Creek is in the Coyote Creek watershed in Santa Clara County, and drains from the undeveloped Diablo Range hills east of San Jose, through urbanized areas in San Jose and Milpitas, then discharges to Lower Penitencia Creek, which is tributary to Coyote Creek. Under existing conditions, Berryessa Creek overtops its banks about once every four to 25 years in the 2.2-mile-long reach from Calaveras Boulevard in Milpitas upstream to Interstate 680 (I-680) in San Jose (Upper Berryessa Creek) (Attachment A, Figure 1).

3. **Local-Federal Partnership.** The District is partnering with the U.S. Army Corps of Engineers (Corps) for the Upper Berryessa Creek Flood Risk Management Project (Project) to increase flood protection in the surrounding community. The District and Corps are each funding Project costs, and carrying out design, construction, and post-construction roles and responsibilities in accordance the federal Water Resources Development Act (WRDA) of 1990, and the revised 1996 WRDA, with the following cost-sharing schedule for the non-federal, local sponsor:

    - Provide a cash contribution equal to 5 percent of structural flood control features.

    - Provide all lands, easements, rights-of-way, relocations, and disposal areas (LERRD).

    - If the sum of the above two items is less than 35 percent of the costs assigned to flood control, non-federal sponsors will pay the difference in cash.

    - If it is greater than 35 percent, total non-federal costs shall not exceed 50 percent of total project costs assigned to flood control.

    - Contributions in excess of 50 percent will be reimbursed by the federal government to the non-federal sponsor.

4. **Dischargers**. The Water Board is issuing this Order to the District and Corps, collectively referred to as the "Discharger," because the Project activities will cause or contribute to a discharge of waste that could affect the quality of Waters of the State and the United States.

5. **Project Purpose**. The Project is intended to provide flood protection in Upper Berryessa Creek from the one percent exceedance probability flood event (also known as the one-percent-annual-chance flood event, or the 100-year flood event) for an estimated 650 land parcels, and contribute to reduced flood risks for an unquantified additional parcel where flow from Upper Berryessa Creek combines with other flood waters. The Project will also modify 210 linear feet of Los Coches Creek and 60 linear feet of Piedmont Creek, which are tributary to Upper Berryessa Creek. The completed Project will meet Federal Emergency Management Administration (FEMA) Certification standards.

   The area being protected encompasses the new Milpitas Bay Area Rapid Transit (BART) station and rail line infrastructure, part of a $2.3 billion (including $900 million in federal funding) BART expansion project to extend BART service from Fremont through Milpitas to San Jose. The Project construction activities are expected to begin in October 2016 and to be completed in approximately nine months. The Project is located just upstream of the "Lower Berryessa Creek and Lower Calera Creek Flood Protection Improvements Project" (Lower Berryessa-Calera Project) currently under construction by the District, as authorized by the Water Board in October, 2015. Both the Project and Lower Berryessa-Calera Project are intended to be complete before the planned opening of the new Milpitas BART station in late 2017.

6. **Project Elements and Coverage of this Order.** This Order covers Project construction activities, as well as the operations and maintenance activities after the Project is constructed (i.e., see Finding 16 for additional information about maintenance). This Order also covers the mitigation and monitoring requirements necessary for the compliance with federal and State regulations (i.e., see Findings 21 through 30).

   The Project's major construction features include: (1) enlarging the Upper Berryessa Creek channel; (2) armoring the channel beds and banks with rock riprap; and (3) constructing concrete box culverts and concrete transition structures, floodwalls, and access ramps. The Project construction elements have the following details below and are shown in Attachment A, Figures 2 and 3; and the fill and excavation information is presented in Table 1:

   a. Widen, deepen, and contour Upper Berryessa Creek to create a trapezoidal channel cross section with a bed width varying from 12 to 40 feet, depth varying from 8 to 14 feet, and banks with a 2-to-1 horizontal-to-vertical (2:1) slope. The channel footprint from top of bank to top of bank in Upper Berryessa Creek will increase from 9.7 to 17.2 acres.

   b. Build three new pre-cast concrete box culverts (where currently none exist) consisting of a box culvert at both the Los Coches Creek and Piedmont Creek mouths, and a double-barrel box culvert to replace the existing Union Pacific Railroad (UPRR) wooden trestle bridge downstream of Montague Expressway, and the associated cast-in-place concrete wingwalls and concrete or grouted rock riprap transition structures;

c. Armor the channel bed and banks with rock riprap, covered by soil and hydroseed for erosion protection, with the following details:

   i. Total area of 9.81 acres (10,072 linear feet (ft)) of rock riprap, including 9.71 acres in Upper Berryessa Creek (9,831 linear ft), 0.09 acres in Los Coches Creek (221 linear ft), and less than 0.01 acres in Piedmont Creek (20 linear ft);

   ii. Rock riprap (9 to 24 inches thick) in channel beds and banks extending up to the 2.5 to 10-year water surface elevation (7,547 linear feet);

   iii. Rock riprap in banks (additional 2,525 linear feet in Upper Berryessa Creek) extending from 5 feet below the channel invert elevation up to the 2.5 to 10-year water surface elevation;

   iv. A 4-inch layer of native soil covering channel bed and bank riprap (10,072 linear ft), covered by biodegradable coconut fiber mats from the toe to top of banks, with hydroseed in beds and banks to promote herbaceous native vegetation growth and erosion protection; and

   v. Grouted rock riprap (24 inches thick) at the Piedmont Creek confluence and beneath the existing Yosemite Drive bridge crossing.

d. Construct concrete floodwalls of 1,123-feet long by up to 2-feet high on the left bank (looking downstream) of Upper Berryessa Creek between Los Coches Street and Piedmont Creek at the top of bank, and 450-feet long by 3-feet deep, to be buried on the left bank upstream of Montague Expressway to reinforce an existing retaining wall;

e. Construct three concrete access ramps, one each on the right and left banks (looking downstream) upstream of Montague Expressway, and a single concrete ramp on the right bank downstream of I-680; and a concrete access road to the new UPRR culvert;

f. Construct concrete and rock riprap transition structures at the upstream face of the existing Calaveras Boulevard Bridge;

g. Build new and redevelop existing maintenance roads, with a width of 18 feet on the right bank and 15 to 18-feet wide on the left banks, except in two areas that lack space on the left bank for a road, downstream of Montague Expressway and downstream of I-680;

h. Remove an unspecified volume of sediment and vegetation from about 200 linear feet of a concrete-lined reach of Upper Berryessa Creek just downstream of I-680; and

i. Replace and realign existing utilities within the Project right-of-way (see Finding 12, below, for additional information).

Table 1. Fill and Excavation Quantities

Project Element	Material	Excavation (cubic yards)	Fill (cubic yards)	Length (linear feet)	Area (acres)
Enlarge and contour channel	Soil	148,400	33,600 native soil	10,453	17.2
Riprap in beds and banks	Imported rock (9 to 24-inch diameter)	--	15,233	10,072	9.23
Grouted riprap in beds and banks	Imported rock (24-inch diameter)	--	1,882	319	0.58
Pre-cast concrete culverts	Concrete	--	675	284	0.11
Cast-in-place wingwalls and transition structures	Concrete	--	37	100	<0.01
Access ramps	Concrete	--	144	215	0.01
Access road (10-ft wide) to new UPRR culvert	Concrete	--	15	15	0.01
Floodwalls	Concrete	--	424	1,573	0.04
Concrete channel lining	Concrete	290	---	262	0.36
Maintenance roads	Aggregate base material	--	5,654	16,843[1]	6.8

Notes:

- - – Not applicable; UPRR – Union Pacific Railroad

[1] This length is the total for roads on both sides of the channel. Roughly 10,400 linear feet of Upper Berryessa Creek will have maintenance roads on at least one side of the channel.

7. **Staging, Stockpiling, and Hauling.** Two areas outside of the Project right-of-way will be used for staging and sediment stockpiling (Attachment A, Figures 2 and 3). Access to and from the Project site and the staging areas will occur along existing paved roads via Calaveras Boulevard, Los Coches Street, Yosemite Drive, Ames Avenue, and Montague Expressway.

8. **Reuse or Dispose of Exported Material.** The Discharger will haul about 114,800 cubic yards of sediment from the Project site in addition to demolition debris such as concrete and utility components. Soil and demolition debris will be reused or recycled to the extent feasible. Disposal of any demolished material and debris will be in accordance with all applicable local, State, and federal regulations. The soil to be transported off-site is suitable

for non-hazardous landfill disposal, according to the Project Environmental Impact Report (EIR) (State Clearinghouse No. 2001104013).

9. **Construction General Permit.** The Discharger is required to seek coverage under and comply with, or oversee that its contractors seek coverage and comply with, the NPDES General Permit for Discharges of Storm Water Associated with Construction Activities (Order No. DWQ-2009-0009, as amended by Order Nos. 2010-0014-DWQ and 2012-006-DWQ) (Construction Stormwater Permit) (Provision 5).

10. As of the date of adoption of this Order, the items listed below either have been submitted to the Water Board and are not complete or otherwise not yet acceptable to the Board, or have not been submitted. This Order requires the Discharger to submit the following plans and reports that meet or exceed the criteria and standards outlined in this Order, and are acceptable to the Executive Officer, before the beginning of construction:

    a. Narrative of differences between the 100 percent Design Plans received by Water Board on August 11, 2016 (including Planting Plan) and previous design plans;

    b. Utilities Plan (Finding 12; Provision 8);

    c. Dewatering Plan (Finding 14; Provision 9);

    d. Groundwater Management Plan (Finding 15; Provision 10);

    e. Adaptive Management Plan (Finding 17; Provision 15);

    f. Mitigation and Monitoring Plan (including a plan for off-site mitigation (Finding 21; Provision 16); and

    g. Post-construction Stormwater Management Plan (Finding 20; Provision 12).

11. **Final 100 Percent Design Plans.** The Water Board received 100 percent design plans and specifications on August 11, 2016, and a 100 percent Planting Plan (dated April 1, 2016) and specifications on July 21, 2016. For purposes of this Order, the Planting Plan is part of the Design Plans because the removing selected trees and grading others must be incorporated in the construction design plans. The Water Board requires the 100 percent plans to include: (a) 100 percent complete drawings including those addressing project construction phasing, and which incorporate all comments by individuals and agencies and requirements of this Order; (b) a revised Design Documentation Report with narrative to highlight changes between the 90 and 100 percent plans; (c) final specifications with narrative to highlight the changes that have been incorporated since the 90 percent plans Design Plans and 95 percent Planting Plan; and (d) revisions in the Planting Plan for monitoring duration of plantings within the Project right-of-way of no less than five years for herbaceous hydroseed plantings, and no less than ten years for shrubs and trees, consistent with the guidelines in Attachment C.

12. **Replace and Realign Existing Utilities.** Multiple utility lines are in the Project right-of-way, including sanitary sewer, stormwater, irrigation, cable, electrical, telephone, fiber optic, and gas lines. The locations of some utilities are estimated and will be confirmed during Project construction activities. To date, the utility lines planned for replacement and/or realignment are sanitary sewer, stormwater lines and outlets, a water irrigation line, an electric line, and two electric utility vaults. In addition, two groundwater monitoring wells and a gauging port will be relocated. This Order requires the Discharger to prepare a Utilities Plan to identify any utility lines, including any protective caps and supporting infrastructure, that are located immediately above or within five feet below a creek bank or channel bottom within the Project site. The plan must describe whether each of those utility lines has the potential to impede flow or constrict natural movement of the creek, and include a workplan to relocate any utility line with such potential.

13. **Rain Event Action Plan.** The Discharger shall develop and implement a Rain Event Action Plan (REAP), as required by the Construction General Permit, designed to protect all exposed portions of their sites within 48 hours prior to any likely precipitation event. The REAP requirement is designed to ensure that the discharger has adequate materials, staff, and time to implement erosion and sediment control measures that are intended to reduce the amount of sediment and other pollutants generated from the active site. A REAP must be developed when there is likely a forecast of 50 percent or greater probability of substantial precipitation in the project area.

14. **Dewatering.** Dewatering of surface water or groundwater that accumulates at excavated areas will likely be necessary. The Project areas where dewatering is most likely to be necessary are in Piedmont Creek and downstream of its confluence, where surface water flow is more persistent, and in Upper Berryessa Creek in the area downstream of Montague Expressway, where deep excavations for the replacement of the UPRR trestle bridge are more likely to encounter groundwater. The depth to groundwater in the vicinity of the UPRR trestle bridge is about 9.3 to 13.4 feet below grade, and excavation depth will exceed the maximum groundwater depth. The Corps submitted a Groundwater Management Plan for groundwater discharges in the area impacted by the groundwater contamination plume from the former JCI Jones Chemical Facility. Because the Groundwater Management Plan only addresses a portion of the Project area, and does not address surface water, this Order prohibits dewatering before the Discharger submits and implements a complete Dewatering Plan that meets the minimum criteria outlined in Provision 9, acceptable to the Executive Officer.

15. **Groundwater Management.** The Project is within the footprint of a past solvent release from the former Jones Chemical, Inc. chemical plant. The Water Board requires the Discharger to capture and treat all groundwater encountered from within the potential extent of the toxic waste plume as demarcated in the 90 percent design plans (Plume). Any such groundwater must meet the standards of the NPDES General Permit for the Discharge or Reuse of Extracted and Treated Groundwater Resulting from the Cleanup of Groundwater Polluted by Volatile Organic Compounds (VOC), Fuel Leaks and Other Related Wastes (Water Board Order No. R2-2012-0012; NPDES Permit No. CAG912002) (VOC and Fuel

General Permit), as stipulated in a letter to the Discharger dated August 14, 2015 (see Attachment B).

16. **Maintenance**. The Project EIR states that regular maintenance such as sediment and vegetation removal in Upper Berryessa Creek will be necessary after the Project is constructed. The EIR also states that the Project will result in less sediment accumulation and less volume than existing conditions, and, specifically, that sediment will accumulate only at the UPRR trestle bridge replacement site and the other UPRR culvert upstream of Ames Avenue. These conclusions are based on the Project sediment transport modeling results.

    However, Water Board staff's best professional judgement indicates a different interpretation of the modeling results (Water Board Staff Memo, April 12, 2016[1]). For example, shear stress will be reduced by the Project. The lower shear stress, along with other lines of geomorphic evidence including field observations, comparison of historic and current cross sections, and maintenance records, indicate the Project will result in a more-depositional system than existing conditions. In addition, an independent peer review panel[2] found that sedimentation can occur at various locations in the Project reach.

    As part of the federal-local partnership, and in accordance with the WRDA of 1990 (Finding 3), an Operations and Maintenance Manual (O&M Manual) will be developed to guide maintenance, such as sediment removal, for the life of the Project, which is approximately 50 years. The completion of the O&M Manual will be timed after the Local Cost Agreement is completed between the Corps and the District. This Order requires the following criteria and processes in development and implementation of the O&M Manual:

    a. **Santa Clara Valley Water District Stream Maintenance Program**. The timing of the Local Cost Agreement to occur, and for the transfer of the Project from the Corps to the District, is uncertain, and the O&M Manual may not be available immediately after the Project is constructed. Therefore, this Order authorizes the District to conduct maintenance consistent with the District's existing Stream Maintenance Program (SMP) (Provision 14), authorized under Water Board Order No. R2-2014-0015 (SMP Order), and any future revisions. To the extent there are any inconsistencies between the O&M Manual, this Order, and/or the SMP, compliance with this Order will be determined by compliance with the terms of this Order.

    b. **Multiagency Collaboration**. Development of the O&M Manual will be accomplished through a collaboration of the Water Board and other appropriate state agencies. This is necessary to ensure the planning and implementation of maintenance are consistent with

[1] Riley, Ann L., and Setenay Bozkurt Frucht, 2016. Projected Future Maintenance on the Upper Berryessa Creek Flood Risk Management Project. Internal Staff Memorandum from A. Riley and S. Bozkurt Frucht to Keith Lichten, Chief, Watershed Management Division, San Francisco Bay Regional Water Quality Control Board. Available online at http://www.waterboards.ca.gov/sanfranciscobay/water_issues/hot_topics/Berryessa.shtml.

[2] Batelle Memorial Institute, 2013. Final Independent External Peer Review Report Berryessa Creek, Santa Clara County, California, General Reevaluation Study (GRS) Draft General Reevaluation Report and Environmental Impact Statement/Environmental Impact Report. Department of the Army U.S. Army Corps of Engineers Flood Risk Management Planning Center of Expertise for the Baltimore District. Batelle, Columbus, OH.

the SMP, and, accordingly, will minimize environmental impacts. Additionally, it is consistent with the SMP approach, which includes a multi-agency collaborative process to determine maintenance needs, based on avoiding and minimizing impacts in waters to the extent practicable.

c. **Maintenance Action Thresholds**. The O&M Manual will set maintenance action thresholds based on channel capacities and a performance standard based on protecting 50 percent of the project design freeboard, consistent with the maximum tolerance applied by the Corps in flood control projects it co-sponsors. The plan will include using a combination of vegetation and/or sediment management to meet flood risk objectives while minimizing environmental impacts. Using maintenance action thresholds is consistent with the District's SMP Manual process for developing reach- and creek-specific maintenance guidelines. Maintenance action thresholds will be revised iteratively, if needed, based on data to be collected under the Adaptive Management Plan described in the next finding.

d. **Five-Year Assessments for Adaptive Management, and Previously-Mitigated Areas**. The O&M Manual will be evaluated at least every five years to incorporate the findings under the activities required in the next finding to prepare and implement an Adaptive Management Plan.

e. **Authority to Conduct Maintenance in the Project Site**. Maintenance in the Project site, after construction is completed, is authorized under this Order until such time that the Water Board Executive Officer determines the site may be folded into the District's SMP. This is necessary because the monitoring necessary to verify sediment transport processes cannot be maintained under the SMP procedures for priority project budgeting and implementation.

17. **Adaptive Management Plan.** This Order requires the Discharger to submit an Adaptive Management Plan, acceptable to the Executive Officer, pursuant to Provision 15. The Adaptive Management Plan will describe channel dimension and flow data to be collected, which the Discharger will use to understand how the Project is performing after construction (e.g., stage-discharge relationships); and to generate quantifiable channel capacity flood protection objectives (e.g., acceptable freeboard at bridge crossings) to guide future maintenance activities. The objectives shall be revised iteratively as new data are collected under post-construction conditions, and shall inform the O&M five-year assessments. Adaptive management is consistent with the District's SMP, which requires development of channel and reach-specific triggers for maintenance (i.e., maintenance guidelines) that minimize disturbance of the creek channel vegetation and substrate. This approach informs sediment and vegetation removal based on field observations of channel processes and performance, rather than solely using design criteria.

18. **Waters of the U.S. and of the State.** Based on a jurisdictional wetland delineation (Tetra Tech, 2014), the Project has 4.18 acres of waters of the U.S. as creek waters (other waters). The waters of the U.S. are also waters of the State. An additional area of 5.92 acres from the ordinary high water mark elevation to the tops of banks constitutes waters of the State (but

not waters of the U.S.), for a total area of 10.1 acres of waters of the State. This elevation difference, i.e., the vertical distance from ordinary high water mark to the top of bank, ranges from zero to 6 feet. The linear extent of the Project activities in waters of the U.S. and of the State is approximately 10,072 linear feet of other waters.

No jurisdictional wetlands are in the Project area. However, the wetland delineation identified patches of wetland vegetation fringing the margins of the Upper Berryessa Creek active channel, with a combined area estimated at less than 0.5 acres. An early assessment found an area of 0.39 acres of fringing wetland vegetation. The difference between these two surveys are likely due to variations in the extent of vegetation colonizing and growing from year to year until a high pulse flow washes out the vegetation. For purposes of this Order, about 0.45 acres of fringing wetland vegetation is in the Project downstream of the Piedmont Creek confluence, where flow is most likely to be present year round and support wetland vegetation.

19. **Rare and Endangered Species.** The Project site does not presently support any rare or endangered species. It provides potential habitat for such species.

20. **Impacts.** The Project will result in impacts to 4.18 acres of waters of the U.S. (classified as "other waters") that are also waters of the State, and an additional 5.63 acres of waters of the State, for a total of 9.81 acres of waters of the State in Upper Berryessa Creek, Los Coches Creek, and Piedmont Creek. The impacts extend along 10,072 linear feet of creek channel. No jurisdictional wetlands based on the Corps manual definition for "wetland" exist within the Project site. Other waters will be impacted; specifically, the creek channels in Upper Berryessa Creek, Los Coches Creek, and Piedmont Creek. The impacts associated with the various Project elements are shown in Table 2.

    The Project will temporarily impact waters of the State and the U.S. during the excavation, grading, and construction of the Upper Berryessa Creek channel and other Project elements. The Project will also temporarily impact native vegetation, consisting of woody species throughout the Project top of banks, and about 0.45 acres of wetland vegetation fringing the active channel downstream of the Piedmont Creek tributary.

    In addition, the waters of the State and the U.S. will be permanently impacted by the Project design, which includes new concrete surfaces and grouted rock riprap in the creek bed of Upper Berryessa Creek, and rock riprap buried by a 4-inch layer of soil in the creek beds and banks of Upper Berryessa Creek, Los Coches Creek, and Piedmont Creek. The concrete features, grouted riprap surfaces, and rock riprap armor will restrict natural processes that occur in channels with earthen bed and banks, including the types of vegetation that can thrive, channel movement, and sediment transport processes. Consequently the project design will significantly restrict the beneficial uses that could be supported by the creek, and which are supported in the creek reaches immediately upstream and downstream of the Project.

    The water quality of Upper Berryessa Creek, Los Coches Creek, and Piedmont Creek could be impacted by accidental releases of soil and debris during the excavation, grading, fill

installation, and creek dewatering activities, as well as by the accidental release of hazardous materials and contaminants used or encountered during construction. These releases could cause violations of the water quality objectives proscribed in Chapter 3 of the Basin Plan, including, but not limited to, water quality objectives for the following parameters: bacteria, dissolved oxygen, floating material, oil and grease, pH, sediment, settleable material, suspended material, temperature, toxicity, turbidity, and specific chemical constituents.

Furthermore, impervious surfaces created and/or replaced by the Project may also collect and concentrate stormwater runoff and pollutants that are subsequently discharged to Upper Berryessa Creek. The Project will result in the construction of 6.84 acres of new or redeveloped maintenance roads with impervious aggregate base (AB) material, and an additional 0.11 acres of impervious maintenance ramps. This Order requires the Discharger to submit and implement a Post-Construction Stormwater Management Plan sufficient to demonstrate it is complying with the post-construction best management practice (BMP) requirements in the NPDES *Municipal Regional Stormwater Permit* (MRP) (Water Board Order No. R2-2015-0049; NPDES Permit No. CAS612008) by using appropriately designed and installed pervious material or by constructing post-construction stormwater BMPs to capture, detain, retain, and treat stormwater runoff from the Project's impervious surfaces or from an equivalent or greater amount of impervious surfaces offsite. The Discharger will be responsible for operation and maintenance of roads and any associated BMPs.

Table 2: Impacts on Creek Habitat
Upper Berryessa Flood Risk Management Project

Project Elements	**Permanent Impacts[1]**		**Temporary Impacts[1]**	
	Acres	**Linear ft**	**Acres**	**Linear ft**
Creek dewatering	--	--	9.81	10,453
Creek excavation and grading	--	--	9.81	10,072
Rock riprap in channel beds and banks[2]	9.81	10,072	--	--
Grouted riprap	0.58	319	--	--
Net new concrete surfaces from culverts, wingwalls, transition structures, ramps, driveway[3]	0.20	861	--	--
Remove wetland vegetation	--	--	0.45	--
Concrete floodwalls[4]	--	1,123	--	450
Remove native shrubs and trees	--	--	53 native shrubs and trees to be removed	
Impacts from future O&M activities	To be tracked during post-project O&M activities			

Notes:

ft – feet; O&M – operations and maintenance; "- -" – not applicable

[1] The areal and linear extents of impacts are overlapping, so they are not summed.

[2] This area is based on the existing creek dimensions from top of bank to top of bank; post-project area will be 17.2 acres (see Table 1).

[3] The net area and linear feet account for removal of 0.37 acres in 290 linear feet of concrete bed and banks in Upper Berryessa Creek between Montague Expressway and I-680.

[4] The 1,123 foot long floodwall is a permanent impact because it will be on the top of the bank obstructing flow. A 450 long floodwall, upstream of Montague Expressway, will be buried to reinforce an existing retaining wall, and therefore will not result in new impacts to waters of the U.S.or the State.

21. **Mitigation.** This Order requires the Discharger to submit a Mitigation and Monitoring Plan (MMP), acceptable to the Executive Officer, before beginning Project construction (Provision 16), and to timely implement the MMP. The MMP must propose mitigation such that the Project and mitigation, taken together, meet the California Wetlands Conservation Policy (Executive Order W-59-93), known as the "No Net Loss Policy," as described in Section 4.23.4 of the Basin Plan (see Findings 28 and 30). Mitigation shall preferentially occur at the impacted site, which is referred to as "on-site" mitigation (i.e., within the Project right-of-way), and shall recreate the same type of water as the impacted water which is referred to as "in-kind" mitigation.

    This Order requires that permanently-affected waters of the U.S. and of the State will be mitigated at a minimum mitigation-to-effect ratio of 2:1. As such, the mitigation package for habitat shall provide a minimum restoration of approximately twice the 10.1-acre area and 10,072-linear-foot length feet of creek habitat area, or the equivalent, as compared to the area and linear feet in which rock riprap and concrete will be installed. Restoration of temporarily-affected habitat will be mitigated at a minimum mitigation-to-effect ratio of 1.5:1. The minimum ratio of 2:1 for permanent impacts and 1.5:1 for temporary impacts will apply as long as construction of a mitigation activity is completed within 12 months of the date when the associated impact first occurs. An additional 10 percent mitigation per year, on an areal basis, will be required for the portion of mitigation not completed within the required 12-month period.

    In addition, the Water Board may require a higher amount of mitigation than those amounts stated above, depending on the type (i.e., in-kind or out-of-kind) and proximity (i.e., on-site or off-site) of proposed mitigation relative to the impacted creeks in the Project. For example, the following situations warrant additional mitigation:

    - The placement of off-site mitigation waters or the creation of out-of-kind mitigation (created or restored waters that are different habitat types than the impacted waters), though this can be allowed where it is demonstrated that an overall net gain will occur;

    - Mitigation project has uncertainty of the success associated with the construction or restoration of mitigation wetlands and/or waters; and

- Delays in the construction or restoration of mitigation wetlands and/or waters, relative to when the Project's impacts occur.

When determining whether to accept out-of-kind mitigation, the Water Board may consider such sources as the *Baylands Ecosystem Habitat Goals* (1999) and the *Baylands Ecosystem Species and Community Profiles* (2000) (referred to collectively as the "Habitat Goals Reports"), the San Francisco Estuary Project's *Comprehensive Conservation and Management Plan (1993)*, or other plans specific to the District's flood protection and stream stewardship goals that would result in project with a "long-term net gain in the quantity, quality, and permanence of wetlands acreage and values ..." consistent with the Basin Plan, section 4.23.4. Examples of potentially acceptable mitigation projects include dam removal, increasing salmonid habitat complexity in another creek, replacing a concrete channel with restored riverine wetland habitat, and preparing a watershed management plan and implementing specified projects sufficient to meet the Order's mitigation requirements.

The MMP must include performance and success criteria appropriate for the type of project. For vegetation in mitigation sites, herbaceous plantings must be monitored for no less than five years, and shrubs and trees must be monitored for no less than ten years, consistent with Vegetation Performance and Success Criteria in Attachment C, or standards of equivalent or better effectiveness.

22. **Monitoring and Technical Reports.** All monitoring and technical reports required in this Order are required pursuant to CWC section 13267. The burden of preparing these reports, including costs, bear a reasonable relationship to the benefits to be obtained from the reports and monitoring. Specifically, the monitoring and technical reports will demonstrate protection of beneficial uses during construction and maintenance projects, as well as verify the success of efforts to mitigate impacts as described in Findings 20 (i.e., impacts) and 21 (i.e., mitigation requirements). The monitoring reports will log the progress of revegetation over time, and verify the success of mitigation plantings consistent with the minimum success and performance standards in the MMP. In addition, the technical reports will document the Project design and inform the Adaptive Management Plan and implementation.

23. **Water Quality Certification.** The Project will result in discharge of dredge and fill materials into waters of the U.S. and of the State. As the federal administrating agency for regulating the discharge of dredge and fill materials to waters of the U.S. pursuant to section 404 of the Clean Water Act (CWA) (33 U.S.C., section 1344), the Corps signed the Record of Decision dated May 29, 2015, stating that the Project meets all environmental statutes. On March 14, 2016, the Water Board issued Water Quality Certification pursuant to the Clean Water Act, section 401 (Certification) to the Corps for the Project. The Certification states that the Water Board would consider waste discharge requirements (WDRs) for the Project to address the future operations and maintenance activities, vegetation monitoring for construction mitigation plantings, and an off-site mitigation plan for impacts due to the Project's design.

24. **Waste Discharge Requirements.** Pursuant to section 13263 of the California Water Code (CWC) and Title 23, section 3857 of the California Code of Regulations (CCR), the Water

Board is issuing WDRs to regulate the proposed discharge of excavation, dredge and fill materials into waters of the State. The Water Board considers WDRs necessary to adequately address impacts and mitigation to beneficial uses of waters of the State from the Project, to meet the objectives of the California Wetlands Conservation Policy (Executive Order W-59-93), and to accommodate and require appropriate changes over the life of the Project, including during its construction. In accordance with CWC, sections 13263(a) and 13241, the Water Board, after considering this matter at a public hearing, has prescribed requirements as to the nature of the proposed discharge. These requirements implement the Water Board's relevant water quality control plans and policies, and take into consideration the beneficial uses to be protected, the water quality objectives reasonably required for that purpose, other waste discharges, and the need to prevent nuisance.

25. **California Environmental Quality Act (CEQA).** CEQA requires all discretionary projects approved by public agencies to be in full compliance with CEQA, and requires a lead agency to prepare an appropriate environmental document for such projects. The Discharger, as the lead agency, certified an Environmental Impact Report (EIR) for the Project on February 9, 2016. The EIR found several significant impacts that are under the purview and jurisdiction of the Water Board. These included significant impacts to: (1) biological resources; (2) soil or topsoil resources; (3) hazardous materials; (4) utility and service systems; and (5) hydrology and water quality. The EIR also found that the mitigation measures proposed therein would mitigate all of these impacts to less than significant levels. The EIR identified the following mitigation measures to mitigate these impacts to less than significant levels:

    - Using seeds or cuttings collected at or near the project area, or higher in the watershed if on-site collection is not feasible, replace the 53 native tree and shrubs removed at the following rates:
        - Native tree up to 8 inches diameter at breast height (dbh): plant 1 native tree for each tree removed;
        - Native trees up to 20 inches dbh: plant 2 native trees for each tree removed;
        - Native trees greater than 20 inches dbh: plant 3 native trees for each native tree removed;
        - Native shrubs: plant 2 native shrubs for each native shrub removed.
    - Maintaining a buffer zone around those riparian trees that will be protected in place during construction;
    - Replacing non-native and ruderal vegetation with native grass and forbs by hydroseeding disturbed areas;
    - Conducting conduct pre-construction aquatic life and wildlife surveys; protecting nesting birds; and relocating wildlife and aquatic life as necessary during construction activities; and conducting pre-construction awareness training for detection and avoidance of wildlife and aquatic species.

- Preventing soil erosion or loss of topsoil by preparing and implementing Rain Event Action Plans;

- Collecting and treating potentially contaminated groundwater encountered during project excavation in the JCI groundwater plume area to complying with the VOC and Fuels General Permit standards before discharging the groundwater to the environment; and

- During construction, removing hazardous materials and wastes from the creek channel prior to substantial rain so that water flowing in the creek does not to entrain hazardous substances.

26. CEQA states that a Responsible Agency "shall not approve the project as proposed if the agency finds any feasible alternative or feasible mitigation measures within its powers that would substantially lessen or avoid any significant effect the project would have on the environment." The Water Board, as a responsible agency under CEQA, has considered the EIR and finds that impacts during the construction of the Project that are within the Water Board's purview and jurisdiction have been identified and will be mitigated to less-than-significant levels through a combination of mitigation measures identified in the EIR and the requirements of this Order. This Order includes conditions and mitigation measures that will substantially lessen or avoid the Project's impacts on the environment. The need for compensation of impacts from the Project design is addressed in this Order (see Finding 21).

    The District prepared and certified a Stream Maintenance Program Update Final Subsequent Environmental Impact Report (FSEIR) on February 14, 2012, State Clearinghouse No. 2000 102 055. The FSEIR found significant impacts that are under the purview and jurisdiction of the Regional Water Board: 1) aquatic species including habitat for special status species; 2) water quality; and 3) hazardous materials. The FSEIR also found that the mitigation measures would mitigate all of these impacts to less than significant levels. The mitigation measures specified in the FSEIR include compensatory mitigation to mitigate for any temporary disturbance or loss of aquatic habitat and specific BMPs to avoid and minimize maintenance activity-related impacts. The impacts of this project related to stream maintenance (O&M implementation) are expected to be equivalent to the impacts discussion in the FSEIR. This Order includes conditions and mitigation measures that will substantially lessen or avoid the Project's impacts on the environment related to stream maintenance (O&M implementation) both during and after construction. The need for compensation of impacts from stream maintenance (O&M implementation) is addressed in this Order (see Finding 16).

27. **Water Quality Control Plans.** The Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) was duly adopted by the Water Board and approved by the State Water Resources Control Board (State Water Board), U.S. Environmental Protection Agency (U.S. EPA), and the Office of Administrative Law where required. The Basin Plan is the Water Board's master water quality control planning document. It designates beneficial uses of receiving waters, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed by the Plan. Section 2.2.1 of

the Basin Plan indicates that the beneficial uses of any specifically identified water body generally apply to its tributary streams. Existing and potential beneficial uses of waters at the Project include the following:

- **Upper Berryessa Creek:** Warm Freshwater Habitat (WARM), Wildlife Habitat (WILD), Water Contact Recreation (REC-1), and Noncontact Water Recreation (REC-2)
- **Los Coches Creek:** Preservation of rare and endangered species (RARE), WARM, WILD, REC-1, and REC-2.
- **Piedmont Creek:** WARM, WILD, REC-1, and REC-2

In addition, section 2.2.3 of the Basin Plan recognizes the multiple beneficial uses provided by wetlands, and Table 1-3 of the Basin Plan lists beneficial uses associated with wetland types. Existing and potential beneficial uses for wetlands at the Project site were established as indicated in section 4.23 of the Basin Plan by (1) referencing information in the Project materials to identify wetland types at the Project site, (2) using Table 1-3 of the Basin Plan to identify examples of beneficial uses associated with these wetland types, and (3) referencing site-specific information provided in the EIR and Project materials to refine the list of example beneficial uses into a list of existing and potential beneficial uses for wetlands at the Project site. Wetlands and waters impacted in the Project site are creek habitat. The beneficial uses associated with wetlands at the Project site include WARM, WILD, REC-1, REC-2, and RARE. However, rare or endangered species do not presently inhabit the Project site.

Requirements of this Order implement the Basin Plan.

28. **Basin Plan Wetland Fill Policy.** The Basin Plan Wetland Fill Policy (Fill Policy) establishes that there is to be no net loss of wetland acreage and no net loss of wetland value when a project and any proposed mitigation are evaluated together, and that mitigation for wetland fill projects is to be located in the same area of the region, whenever possible, as the project. The Fill Policy further establishes that wetland disturbance should be avoided whenever possible, and if not possible, should be minimized, and only after avoidance and minimization of impacts should mitigation for lost wetlands be considered. The Water Board applies the Fill Policy to waters that are creeks.

29. To minimize temporal losses in functions associated with the Project's unavoidable temporary impacts, the Discharger will return temporarily-impacted waters of the State to a condition similar to their original condition upon completion of the Project by hydroseeding native wetland species in the channel bed and native grass species on creek banks in Upper Berryessa Creek, Los Coches Creek, and Piedmont Creek.

30. **California Wetlands Conservation Policy.** The goals of the California Wetlands Conservation Policy (Executive Order W-59-93, signed August 23, 1993) include ensuring "no overall loss" and achieving a "…long-term net gain in the quantity, quality, and permanence of wetland acreage and values…." The California Wetlands Conservation Policy

also calls for a "development of means to provide flexibility in the regulatory process … for allowing public agencies, water districts, and landowners to establish wetlands on their property consistent with the primary purpose of the property."

Senate Concurrent Resolution No. 28 states that "[i]t is the intent of the legislature to preserve, protect, restore, and enhance California's wetlands and the multiple resources which depend on them for benefit of the people of the State." Section 13142.5 of the CWC requires that the "highest priority shall be given to improving or eliminating discharges that adversely affect…wetlands, estuaries, and other biologically sensitive areas."

The State Water Board applies the California Wetlands Conservation Policy to waters that are creeks. Requirements of this Order implement the California Wetlands Conservation Policy.

31. **California EcoAtlas.** It has been determined through regional, state, and national studies that tracking of mitigation/restoration projects must be improved to better assess the performance of these projects, following monitoring periods that last several years. In addition, to effectively carry out the State's Wetlands Conservation Policy of no net loss to wetlands, the State needs to closely track both wetland losses and mitigation/restoration project success. Therefore, we require that the Applicant use the California Wetlands Form to provide Project information related to impacts and mitigation/restoration measures. An electronic copy of the form and instructions can be downloaded at: http://www.waterboards.ca.gov/sanfranciscobay/certs.shtml. Project information concerning impacts and mitigation/restoration will be made available at the web link: http://ecoatlas.org/regions/ecoregion/bay-delta/projects.

32. **Endangered Species Act.** This Order does not authorize any act that results in the taking of a threatened or endangered species or any act that is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish and Game Code sections 2050 to 2097) or the Federal Endangered Species Act (16 U.S.C.A. sections 1531 to 1544). The Discharger is responsible for meeting all requirements of the applicable Endangered Species Act.

33. **Notification of Interested Parties.** The Water Board has notified interested parties, including the Corps, U.S. EPA, U.S. Fish and Wildlife Service, California Department of Fish and Wildlife, the Guadalupe-Coyote Resource Conservation District, and the Citizens Committee to Complete the Refuge, City of Milpitas, Valley Transportation Authority, BART, Santa Clara County Parks and Recreation Department, and California Department of Transportation-District 4, of its intent to prescribe WDRs for this discharge.

34. **Consideration of Public Comment.** The Water Board, in a public meeting, heard and considered all comments pertaining to the discharge.

35. **Records Management.** This Project file is maintained at the Water Board under CIWQS Place No. 818597, and Regulatory Measure No.403119.

36. **Fees for Dredge and Fill Projects.** The fee amount for the WDRs shall be in accordance with the current fee schedule, per California Code of Regulations (CCR), Title 23, Division 3, Chapter 9, Article 1, section 2200(a)(3).

It Is Hereby Ordered pursuant to the provisions of Division 7 of the CWC, related regulations and guidelines adopted thereunder, that the Discharger, its agents, successors, and assigns shall comply with the following pursuant to authority under CWC sections 13263 and 13267:

A. Discharge Prohibitions

1. The discharge of wastes, including debris, rubbish, refuse, or other solid wastes into surface waters or at any place where they would contact or where they would be eventually transported to surface waters, including floodplains, is prohibited.

2. The discharge of floating oil or other floating materials from any activity in quantities sufficient to cause deleterious bottom deposits, turbidity, or discoloration in surface waters is prohibited.

3. The discharge of silt, sand, clay, or other earthen materials from any activity in quantities sufficient to cause deleterious bottom deposits, turbidity, or discoloration in surface waters is prohibited.

4. The fill activities in waters of the State subject to these requirements shall not cause a nuisance as defined in CWC section 13050(m).

5. The groundwater in the vicinity of the Project shall not be degraded as a result of the Project activities or placement of fill for the Project.

6. The discharge of materials, which are not otherwise regulated by a separate NPDES permit or allowed by this Order, to waters of the U.S. and State is prohibited.

7. The use of imported soil in the Project is prohibited unless the Executive Officer grants an exception to this under the requirements of Provision 13. Under such circumstances, the Discharger shall submit the report required in Provision 13 to provide justification for the use of imported soil fill with resulting in impacts in the waters of the State .

8. Directional drilling in the Project is prohibited.

9. This use of bank stabilization methods and materials other than the methods and materials in the 90 percent design plans and specifications are not authorized under this Order.

10. This Order prohibits any creek dewatering, diversion, or discharge before the Executive Officer provides approval in writing of a Dewatering Plan the Discharger shall prepare, consistent with Provision 9.

B. Provisions

1. The Discharger shall comply with all Prohibitions and requirements of this Order immediately upon adoption of this Order or as otherwise provided below. The Discharger shall fully implement all requirements of this Order, including all plans accepted by the Water Board or Executive Officer. The Discharger shall notify the Executive Officer in writing should the Discharger need to significantly alter the Project. If the Water Board is not notified of a significant alteration to the Project, the Applicant will be considered in violation of this Order and may be subject to Water Board enforcement actions.

2. All plans and reports required under this Order shall be submitted and acceptable to the Executive Officer.

3. The Project shall be constructed in conformance with the 100 percent Design Plans consistent with Finding 11 and Provision 7, and be acceptable to the Executive Officer.

4. Dredging, excavation, and fill in Upper Berryessa Creek, Piedmont Creek, and Los Coches Creek shall not cause the turbidity in the receiving water (i.e., water in these creeks and in waters to which they discharge) to increase by more than 10 percent if the ambient turbidity of the receiving water is greater than 50 NTU, or by more than 5 NTU if the ambient turbidity of the receiving water is less than or equal to 50 NTU.

5. **Construction General Permit**. The Discharger shall seek coverage under and comply with, or oversee that its contractors seek coverage and comply with, the NPDES General Permit for Discharges of Storm Water Associated with Construction Activities (Order No. DWQ-2009-0009, as amended by Order Nos. 2010-0014-DWQ and 2012-006-DWQ) (Construction Stormwater Permit).

6. **Rain Event Action Plan.** The Discharger shall develop and implement a Rain Event Action Plan (REAP), as required by the Construction General Permit, designed to protect all exposed portions of their sites within 48 hours prior to any likely precipitation event. The REAP requirement is designed to ensure that the discharger has adequate materials, staff, and time to implement erosion and sediment control measures that are intended to reduce the amount of sediment and other pollutants generated from the active site. A REAP must be developed when there is likely a forecast of 50% or greater probability of precipitation in the project area.

7. **Final Design Plans.** No later than 15 days before starting construction for the Project, the Discharger shall submit final 100 percent design plans to the Water Board. The final Design Plan shall also include the 100 percent Planting Plan (see Finding 11). In addition, the 100 percent plans shall include, or otherwise be accompanied by, information, including an appropriately-detailed narrative description, describing all changes from the 90 percent plans dated January 14, 2016, and 95 percent Planting Plan dated January 15, 2016. The Planting Plan shall be revised to include monitoring of herbaceous plantings for no less than five years and shrubs and trees for no less than ten years, and shall meet performance and success criteria in Attachment C, or comparable standards acceptable to

the Executive Officer. The narrative description of changes for the 100 percent plans shall be in the format of a memorandum separate from the Design Documentation Report.

8. **Utilities Plan.** Before starting construction, the Discharger shall prepare and submit a Utilities Plan, acceptable to the Executive Officer. The Utilities Plan shall consist of the following report and plans for utilities in the Project right-of-way:

    a. A technical report that identifies any protective caps and supporting infrastructure, located immediately above the creek or within 5 feet below the creek banks or channel bottom and analyzes whether they could constrain the creek channel in the future (e.g., by requiring placement of a cap or related hard structure to protect them from creek flow or erosion; precluding creek migration, including downcutting; or otherwise requiring modification of the creek to protect them). Where such a potential exists, the Plan shall include a workplan, including appropriately-detailed plans and a schedule, to relocate the utilities and associated infrastructure such that they will be unlikely to affect the creek;

    b. Drawings and maps with narrative, as appropriate, sufficient to describe measures to prevent impacts during relocation; and

    c. Maps and drawings showing the locations, elevations, type, size, associated infrastructure (e.g., caps), and all other information, as appropriate, of live and abandoned utilities.

9. **Dewatering Plan.** Not later than 30 days prior to the commencement of dewatering activities, the Discharger shall submit a Dewatering Plan, acceptable to the Executive Officer. The Dewatering Plan shall include plans (i.e., diagrams or drawings; maps showing locations of activities and structure; and other design details as appropriate) for, and appropriate discussion about, all dewatering system components, such as diversion pipes, water storage, and water quality monitoring, and shall address the following specific methods and procedures:

    a. Identify an appropriate discharge point for the proposed dewatering flows downstream of the lower coffer dam;

    b. Procedures and methods for maintaining natural flow upstream and downstream of the Project area and for avoiding and preventing sedimentation and erosion upstream and downstream of the dewatered Project area;

    c. Procedures and methods to meet discharge and receiving water quality objectives in the Basin Plan and sufficient to avoid exceedances of the applicable receiving water quality objectives, including, but not limited to, turbidity, pH, temperature, dissolved sulfide, and dissolved oxygen in accordance with the Basin Plan water quality and specified in Provision 11;

    d. Methods for installing, maintaining, inspecting, and removing coffer dams with minimal or no impacts to the Creek; and

e. How the Creek will be restored when a coffer dam is are removed.

10. **Groundwater Management Plan.** The Discharger shall implement a Groundwater Management Plan, acceptable to the Executive Officer, to meet the standards of the VOC and Fuel General Permit (Finding 15; Attachment B).

11. **Discharge and Receiving Water Objectives.** Creek dewatering discharges, accumulated groundwater or stormwater removed during dewatering of excavations, and diverted creek and stormwater flows shall not be discharged to waters of the State without meeting the following discharge and receiving water limitations herein. All monitoring records at the Project site shall be maintained at a location to be designated in the Dewatering Plan, and shall be made available upon request by Water Board staff.

    a. pH - the instantaneous discharge pH shall be in the range of 6.5 to 8.5, and controllable water quality factors shall not cause changes greater than 0.5 units in the receiving water pH levels.

    b. Discharge Dissolved Oxygen - the discharge dissolved oxygen concentration shall be no less than 5.0 milligrams per liter (mg/L) (hourly average).

    c. Discharge Dissolved Sulfide - the discharge dissolved sulfide shall not be greater than 0.1 mg/L.

    d. Receiving Water Turbidity - the receiving water turbidity measured as nephelometric turbidity units (NTU) shall not be greater than 10 percent of natural conditions in areas where natural turbidity is greater than 50 NTU (daily average). All Project discharge plans shall identify an acceptable location or locations at which to measure background turbidity. The Discharger shall monitor receiving water and discharge turbidity at least one time every 8 hours on days when discharges from excavations or any other dewatering processes may occur.

    b. Receiving Water Temperature – the receiving water shall not be increased by more than 5°F (2.8°C) above natural receiving water temperature.

    c. Nutrients - the receiving waters shall not contain biostimulatory substances in concentration that promote aquatic growths to the extent that such growths cause nuisance or adversely affect beneficial uses.

12. **Post-Construction Stormwater Management Plan.** No later than 60 days prior to construction, the Discharger shall submit a Post-Construction Stormwater Management Plan consistent with the Water Board's Municipal Regional Stormwater Permit (NPDES Municipal Regional Stormwater Permit (MRP) (Water Board Order No. R2-2015-0049; NPDES Permit No. CAS612008) requirements for post-construction stormwater management for new or replacement impervious surfaces. The plan shall identify construction materials, designs, treatment controls, a proposed operation and maintenance plan, and all other information, as appropriate, sufficient to ensure the appropriate

treatment of runoff from 6.84 acres of maintenance roads and 0.1 acres of concrete access roads and ramps, either on site or at an alternative off-site location.

13. No later than 30 days prior to placing any imported soil fill material at the Project area, including all placement of fill in areas below the top of bank, on levees, and at any other location where the fill is a discharge to or has the potential to discharge to any waters of the State in the Project, the Discharger shall submit a technical report, acceptable to the Executive Officer, that the chemical concentrations in the imported fill soil are in compliance with the protocols specified in the following documents:

    a. The Dredged Material Management Office (DMMO) guidance document *Guidelines for Implementing the Inland Testing Manual in the San Francisco Bay Region* (Discharger Public Notice 01-01, or most current version) (Inland Testing Manual) with the exception that the water column bioassay simulating in-bay unconfined aquatic disposal shall be replaced with the modified effluent elutriate test, as described in Appendix B of the Inland Testing Manual, for both water column toxicity and chemistry (DMMO suite of metals only); and,

    b. The Water Board May 2000 staff report *Beneficial Reuse of Dredged Materials: Sediment Screening and Testing Guidelines*, or the most current revised version. Water Board staff shall review and approve data characterizing the quality of all material proposed for use as fill prior to placement of fill at any of the levee, marsh, or channel areas at the Project site. Modifications to these procedures may be approved by the Executive Officer on a case-by-case basis, pending the Discharger's ability to demonstrate that the imported fill material is unlikely to adversely impact beneficial uses.

14. **Maintenance.** Maintenance activities shall be consistent with the District's Stream Maintenance Program as described in Finding 16, and consistent with the Adaptive Management Plan (Finding 17) this Order requires pursuant to Provision 15. In addition, the mitigation required due to impacts from maintenance activities shall be consistent with the District's Stream Maintenance Program. The Discharger shall prepare a lessons learned report, consistent with the next provision, as described in Finding 16.

15. **Adaptive Management Plan.** No later than 6 months after the date this Order is adopted, the Discharger shall submit an Adaptive Management Plan that is consistent with Finding 17. The Adaptive Management Plan shall identify the Project's performance with respect to sediment deposition and accumulation, and develop ways of reducing the need and frequency of maintenance activities and maximizing habitat acreage, values, and functions. The Adaptive Management Plan shall be implemented immediately upon Project channel construction completion. For the purposes of this Order, Project channel construction completion is defined as the first business day after construction contractors are no longer within the Project right-of-way, except for any contractor present solely for the purposes of vegetation planting, monitoring, and/or management. The Adaptive Management Plan shall include, but not be limited to, the following elements:

a. A workplan to periodically conduct cross-sectional and longitudinal profile surveys, and stage-discharge recordings, including high water stages and velocities, after the Project is constructed. The date collected shall inform the five-year report described below in section (e).

b. A decision-making process to avoid sediment and/or vegetation removal before analyzing channel capacity based on field survey data to be collected in accordance with (a) above.

c. Identification of a maintenance trigger based a stated freeboard; and other appropriate maintenance trigger(s).

d. Identification of stream gage locations necessary to implement the monitoring requirements for the Adaptive Management Plan, installation of gage(s), and data acquisition and analysis of stream flow gage(s) to implement the monitoring requirements of the Adaptive Management Plan.

e. A collaborative process comparable to the District's Notification of Proposed Work process under the Stream Maintenance Program (see Finding 16) to convene a team, including Discharger staff and Water Board staff, to jointly develop Project-specific maintenance work plan, acceptable to the Executive Officer, for any bank stabilization, sediment, and/or vegetation maintenance activities that may be necessary in the event that a maintenance trigger (or multiple triggers) occurs.

f. **Geomorphology Report.** A report submitted after 5 measurable flood events at or exceeding the estimated 2 year flood event, and one event at or exceeding the estimated 10 year flood event, to analyze data collected over the first years of Adaptive Management Plan implementation to evaluate channel performance and address the uncertainty in sediment transport processes (Finding 16, Staff Memo). The geomorphology report will evaluate:

   i. whether flow events have occurred that will enable the evaluation of sediment deposition processes in the Project;

   ii. whether sediment deposition rates have increased or decreased compared to the existing conditions;

   iii. whether sediment only accumulates at the two UPRRR culverts as stated in the Project EIR; and

   iv. a comparison of stage-discharge relationships based on collected field data and the model projections.

   In addition, the geomorphology report shall be the basis for the following possible steps to determine whether the District will continue implementing the Adaptive Management Plan:

v. The Executive Officer shall authorize the Project to be transferred to the District's Stream Maintenance Program (SMP) if results of year report indicate sediment deposition has decreased or is similar to existing conditions. The maintenance guidelines developed with the Adaptive Management Plan shall be incorporated into the District's SMP and implemented for future maintenance activities under the SMP.

vi. The District shall continue implementing the Adaptive Management Plan if the Geomorphology Report findings indicate the sediment transport issues have not been resolved, either because not enough rainfall has occurred to generate flows in the creeks to verify sediment transport processes, and/or, because, the data are inconclusive.

vii. If sediment deposition increases and/or is in various areas other than those predicted (e.g., at the UPRR culverts), the District shall submit a lessons learned report to document actual performance of the Project, rather than the design performance, and compare maintenance activities conducted to date with the previously mitigated activities (Finding 16). The lessons learned report shall include (but not be limited to):

a. A refined the sediment transport model; and

b. A project re-design report that identifies opportunities to address sediment accumulation and other Project performance issues such as alternative management approaches, which may include (but are not limited to) modifying sediment maintenance upstream of the Project.

Mitigation Requirements

16. **Mitigation and Monitoring Plan.** No less than six months from the date this Order is adopted, the Discharger shall submit a final Mitigation and Monitoring Plan (MMP), acceptable to the Executive Officer, including, but not limited to, the following elements:

a. The MMP shall include a proposal, workplan, monitoring plan, performance standards, and all other information, as appropriate, sufficient to ensure the mitigation of permanently-affected waters of the State at a minimum mitigation-to-effect ratio of 2:1 and mitigation of temporarily affected habitat at a minimum mitigation-to-effect ratio of 1.5:1 to ensure the Project results in no net loss and a long-term net gain in wetland and waters area, function, and value, consistent with Finding 21. Thus, the mitigation package (i.e., the MMP) shall provide a minimum restoration of approximately twice the 10.1-acre area and 10,072-linear-foot length feet of creek waters, or the equivalent, as compared to the area and linear feet in which rock riprap and concrete will be placed. The Water Board may require additional area and/or linear feet based on the type and proximity of the mitigation project. Thus, the size and scope of the mitigation project shall be appropriate for the Project's impacts based on variations of the ratios above, as described in Finding 21.

b. The MMP shall include (but not be limited to) the vegetation performance standards and success criteria, or comparable standards, as those in Attachment C. The mitigation plantings shall be monitored annually for success, health, and vigor as specified in Attachment C, Tables 1 and 2.

c. Plantings in mitigation areas shall be monitored for a minimum period of five years for grasses, forbs, and shrubs, and ten years for trees, until the success criteria in the MMP are achieved.

d. The Discharger shall apply the guidance in Attachment C, or comparable standards, for revegetation of on-site grasses, shrubs and trees specified in the Planting Plan.

17. **Mitigation Reporting Requirements.** The MMP shall incorporate the reporting requirements stipulated in Provisions 24 through 27.

18. To mitigate the significant impacts identified in the EIR over which the Water Board has authority, the Discharger shall implement those mitigation measures, which are summarized below and described in Finding 25:

    - Replacing any native trees and shrubs of certain sizes the Project will remove during construction;
    - Maintaining a buffer zone around riparian trees during construction;
    - Replacing non-native and ruderal vegetation with native grass and forbs;
    - Conducting pre-construction aquatic life and wildlife surveys; protecting nesting birds; and relocating wildlife and aquatic life as necessary during construction activities; and conducting pre-construction awareness training for detection and avoidance of wildlife and aquatic species;
    - Preparing and implementing Rain Event Action Plans;
    - Collecting and treating potentially contaminated groundwater encountered to meet the VOC and Fuels General Permit standards; and
    - Preventing hazardous materials and wastes from being entrained in creek flow.

19. **Notification and Log for Impacts.** The Discharger shall notify the Water Board prior to the commencement of ground disturbing activities, with details regarding the construction schedule, in order to allow staff the opportunity to be present onsite during construction, and to answer any public inquiries that may arise regarding the Project. In addition, the Discharger shall maintain an Impacts Log to track Project activities including the start dates of impacts to waters of the State and the associated mitigation activities. The Discharger shall make the Impacts Log available for review by the Executive Officer upon request. The calendar shall include, but not be limited to, the start dates of the following Project milestones:

a. Channel excavation and grading;

b. Creek dewatering;

c. Groundwater management;

d. Hydroseeding;

e. Tree and shrub planting; and

f. Offsite mitigation construction elements (as described in the MMP (Finding 21; Provision 17).

Reporting Requirements

20. All reports pursuant to these Provisions shall be prepared under the supervision of suitable professionals registered in the State of California.

21. The Discharger shall report any water quality monitoring data that are not in compliance with Provision 11 (a non-compliance event) to the Water Board within 24 hours via telephone and shall follow up with a written report within 14 days. The written report shall provide the following:

    a. Discharge and receiving water measurements for the water quality parameter(s) collected during the non-compliance event;

    b. The location, duration, and likely cause of the non-compliance event;

    c. All actions taken to remedy non-compliance immediately after identifying the non-compliance event and to mitigate for any adverse impacts caused or contributed to by the non-compliance event; and

    d. All actions taken to prevent a non-compliance event in the future.

22. **Geomorphology Report**. The Discharger shall submit a report pursuant to Provision 15, by January 31 after the fifth of five measurable flood events at or exceeding the estimated 2 year flood event, and, at least one flood event at or exceeding the estimated 10 year flood event, occurs. If a ten year event does not occur within ten years water years (i.e., October 1 through September 30) after construction is completed, the Discharger shall submit the Geomorphology Report, due by January 31 of the eleventh water year, based on data available at the end of the tenth water year.

23. **California EcoAtlas**. The Discharger shall use the standard California Wetlands Form to provide Project information describing impacts and restoration measures no later than 14 days from the date of the final MMP approved pursuant to Provision 16. An electronic copy of the form can be downloaded at: http://www.waterboards.ca.gov/sanfranciscobay/certs.shtml. The completed form shall be submitted electronically to habitatdata@waterboards.ca.gov or shall be submitted as a

hard copy to both (1) the Regional Water Board (see the address on the letterhead), to the attention of EcoAtlas, and (2) the San Francisco Estuary Institute, 4911 Central Avenue, Richmond, CA 94804, to the attention of EcoAtlas.

24. **Mitigation Monitoring Reports**. The Discharger shall submit annual reports, no later than January 31 following each year in which mitigation is monitored, during each year of the first five years of the initial ten year monitoring period. After the first five years, the Discharger shall submit reports in years seven, nine, and ten. The reports shall summarize each year's monitoring results, including the need for any remedial actions (e.g., re-planting or bank stabilization). The annual report shall compare data to previous years and describe progress towards meeting final success criteria. The year ten report shall consist of the annual data from year 10, in addition to a comprehensive final report. Annual reports and the comprehensive final report shall include photographs from the photo-documentation points specified in Provision 29. The final report shall document whether the Project site and offsite mitigation area(s) meet the final performance criteria of the MMP. If the criteria are not met, the report shall identify remedial measures to be undertaken, including extension of the monitoring period until the criteria are met.

    Success of the mitigation program shall be determined by the Executive Officer after all the minimum success criteria in MMP are achieved. All Annual Reports shall include photographs, special-status species monitoring, and all other information, as appropriate.

25. The Discharger shall continue to submit Annual Reports after the first ten years, as necessary, until the sites have met their performance standards and final success criteria, and the Executive Officer has accepted a notice of mitigation completion (see Provision 27) for each mitigation site.

26. **EIR Mitigation Measure Implementation**. The Discharger shall submit annual reports to report on implementation of EIR mitigation measures pursuant to Provision 18. The Discharger shall submit the first annual report no later than January 31 following initiation of construction, and shall continue annual reporting until one year after completion of channel construction. Annual reporting to meet this requirement may be a section within the MMP annual reports, with clearly-defined section headings to identify the EIR mitigation annual data and information.

27. **Notice of Mitigation Completion**. When the Discharger has determined that a mitigation area achieved the performance standards and final success criteria specified in the MMP, it shall submit a notice of mitigation completion. This notice shall include a status report on the implementation of the long-term maintenance and management portion of the MMP and a description of the status of the mitigation component that has been determined to be successful. After acceptance of the notice of mitigation completion in writing by the Executive Officer, the Discharger's submittal of mitigation monitoring reports for that mitigation component is no longer required.

28. **As-built Plans.** Within 8 weeks of completing Project construction activities, including restoration and replanting of the temporarily-impacted locations, the Discharger shall

submit an as-built report and plan to the Water Board either by uploading it to the California Wetlands Portal website at http://www.californiawetlands.net/tracker/ba/list or via mail. The report shall provide a revised Project plan clearly identifying and illustrating the location of temporary impacts in waters of the State.

29. **Photo-documentation Report**. To document channel and bank conditions immediately upstream and downstream of the Project site, as well as the Project site itself, the Discharger shall establish a minimum of 12 photo-documentation sites at the Project site, and additional sites sufficient to document each bridge crossing in the Project. These photo-documentation sites shall be selected to document channel and bank conditions immediately upstream and downstream of each site, as well as the Project reach. The Discharger shall prepare site maps with the photo-documentation points clearly marked. Prior to implementing the Project, the Discharger shall photographically document the condition of each site. Following implementation of the Project, the Discharger shall photographically document the immediate post-construction condition of the sites and submit a report to the Water Board including the pre-construction photographs, the post-construction photographs, and the map with the locations of the photo-documentation points. This report shall be submitted to the Water Board along with the as-built plans (Provision 28).

Other Requirements

30. The Discharger shall immediately notify the Water Board by telephone whenever an adverse condition occurs as a result of this discharge. Such a condition includes, but is not limited to, a violation of the provisions of this Order, a significant spill of petroleum products or toxic chemicals, or damage to control facilities that would cause noncompliance. A written notification of the adverse condition shall be submitted to the Water Board within two weeks of occurrence. The written notification shall identify the adverse condition, describe the actions necessary to remedy the condition, and specify a timetable, subject to the modifications of the Water Board, for the remedial actions. The Discharger shall notify the Water Board in writing at least 30 days prior to actual start dates for each Project component (i.e., prior to the start of grading or other construction activity for any Project component, including the creek mitigation components).

31. The Discharger shall at all times fully comply with the engineering plans, specifications, and technical reports submitted with the Project materials for the Corps' CWA section 401 Water Quality Certification application and the plans and reports required by this Order (e.g., Provisions 7, 8, 9, 10, 15, 16, 28, and 29), which, together, serve as the basis for the Project description this Order covers.

32. The Discharger is considered to have full responsibility for correcting any and all problems that arise in the event of a failure that results in an unauthorized release of waste or wastewater. The discharge of any hazardous, designated or non-hazardous waste as defined in Title 23, Division 3, Chapter 15 of the California Administrative Code, shall be disposed of in accordance with applicable State and federal regulations.

33. The Discharger shall remove and relocate any wastes that are discharged at any sites in violation of this Order.

34. The Discharger shall maintain a copy of this Order at the Project site so as to be available at all times to site operating personnel and agencies.

35. The Discharger shall permit the Water Board or its authorized representatives at all times, upon presentation of credentials:

    a. Entry onto Project premises, including all areas on which wetland or waters fill or mitigation of waters of the State, is located or in which records are kept.

    b. Access to copy any records required to be kept under the terms and provisions of this Order.

    c. Inspection of any treatment equipment, monitoring equipment, or monitoring method required by this Order.

    d. Sampling of any discharge or surface water covered by this Order.

36. This Order does not authorize commission of any act causing injury to the property of another or of the public; does not convey any property rights; does not remove liability under federal, State, or local laws, regulations or rules of other programs and agencies, nor does this Order authorize the discharge of wastes without appropriate permits from other agencies or organizations.

37. The Discharger shall timely pay all fees associated with this Order. The fee amount for the Waste Discharge Requirements of this Order shall be in accordance with the current fee schedule, per California Code of Regulations, Division 3, Chapter 9, Article 1, section 2200(a)(3). The fee payment shall indicate the Order number, the CIWQS Place ID no. 818597, the Regulatory Measure ID no. 403119, and the applicable season.

38. This Order action is subject to modification or revocation upon administrative or judicial review, including review and amendment pursuant to section 13330 of the CWC and 23 CCR section 3867.

39. This Order action is not intended and shall not be construed to apply to any discharge from any activity involving a hydroelectric facility requiring a Federal Energy Regulatory Commission (FERC) license or an amendment to a FERC license unless the pertinent Order Project materials was filed pursuant to 23 CCR subsection 3855(b) and that Project materials specifically identified that a FERC license or amendment to a FERC license for a hydroelectric facility was being sought.

40. The Water Board may consider rescission of this Order upon Project completion and the Executive Officer’s acceptance of notices of completion of mitigation for all mitigation, creation, and enhancement projects required or otherwise permitted now or subsequently under this Order.

This Order applies to the Project as proposed in the Project materials. Failure to implement the Project as proposed and as authorized herein is a violation of this Order. Violation or threatened violation of the Provisions of this Order is subject to any remedies, penalties, process or sanctions as provided for under applicable State or federal law, including administrative civil liability pursuant to CWC section 13350. Failure to meet any Provision of this Order may subject the Discharger to civil liability imposed by the Water Board to a maximum of $5,000 per day of violation or $10 for each gallon of waste discharged in violation of the Order. Also, any requirement for a report made as a Provision to this Order (e.g., Provisions 20 through 29) or technical or monitoring reports the Water Board requests in response to a suspected violation of the s of this Order, is a formal requirement pursuant to CWC Section 13267, and failure to submit, late or inadequate submittal, or falsification of such technical report(s) is also subject to civil liability pursuant to CWC Section 13268.

I, Bruce H. Wolfe, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on _____ .

_____
BRUCE H. WOLFE
Executive Officer

ATTACHMENTS:

Attachment A Figures
1 – Upper Berryessa Creek Project Location and Vicinity
2 – Project Elements, Calaveras Boulevard to Ames Avenue
3 – Project Elements, Ames Avenue to Interstate 680

Attachment B Water Board Letter to Corps dated August 14, 2015, Regarding Groundwater Management Plan Requirement

Attachment C Guidelines for Vegetation Performance Standards and Criteria in Mitigation Sites