

September 19, 2016

Via e-mail and U.S. Mail

Susan Glendening
San Francisco Bay Regional Water Quality Control Board
1515 Clay Street, Suite 1400
Oakland, CA 94612

Subject: Comments on Waste Discharge Requirements for the Upper Berryessa Creek Flood Risk Management Project

Dear Ms. Glendening:

The Santa Clara Valley Water District (District) appreciates this opportunity to comment on the tentative order for waste discharge requirements related to the Upper Berryessa Flood Risk Management Project (Project). The District urges the Regional Board NOT to adopt the tentative order for the reasons described in this letter. The tentative order would distract from the watershed-wide planning and habitat enhancements that the District is working on with many agencies, including the Regional Board. The Regional Board would also be responsible, under the California Constitution, for reimbursing the District for the millions of dollars that the District anticipates will cost to comply with the order's conditions. The tentative order is also legally unfounded for several reasons and unnecessary because the Regional Board previously issued 401 water quality certification to U.S. Army Corps of Engineers (USACE) for construction of the Project. Additionally, the tentative order includes numerous factual errors.

I. BACKGROUND

The Project is a single-purpose flood risk management project authorized by Congress through the Water Resources Development Act of 1990. The Project includes construction, and then operation and maintenance, of channel modifications and associated structures along 2.2 miles of Upper Berryessa Creek in the cities of Milpitas and San Jose, from I-680 downstream to Calaveras Boulevard, so as to meet Federal Emergency Management Administration (FEMA) certification standards. This Project provides 100-year flood protection for a new Milpitas BART station, a part of the Bay Area Rapid Transit (BART) system expansion project, to extend BART service from Fremont through Milpitas to San Jose. The BART expansion project is a \$2.3 billion (including \$900 million in federal funding) project, and the opening of the new station is expected in late 2017. Delays in this Upper Berryessa Project may result in delays and cost increases in the BART project.

The USACE is responsible for design and construction of the Project, and the District is responsible for acquiring real property rights needed for the project, making the land available to the USACE for construction, and conducting operations and maintenance (O&M) of the creek channel once the Project is constructed and the USACE transfers the Project to the District. The USACE is effectively leasing the District's property for the construction.

Construction of the Project will benefit the environment. It will result in a net increase of 3.18 acres in Waters of the United States, and will not affect jurisdictional wetlands or special status species. The biological value of the increased habitat area would also be improved over existing conditions as non-native and invasive vegetation would be removed and the area seeded with native wetland plant species. Grassland habitat, which the U.S. Fish and Wildlife Service has identified as an important habitat type in this area, would increase in area by 3 acres, and would be seeded with native grass and forbs, replacing the existing predominantly non-native vegetation cover. Finally, the Project would preserve existing upland trees and shrubs wherever possible, and would replace removed native trees and shrubs with native plantings at a 2:1 ratio.

The District is the lead agency under the California Environmental Quality Act (CEQA) for the Project, and the Regional Board is a responsible agency under CEQA. The District prepared a draft environmental impact report (EIR) for the Project. The Regional Board submitted extensive comments on the draft EIR, including on the Project's impacts to waters of the State and on sedimentation. Each of those comments was responded to, and changes were made in the final EIR. The District certified the final EIR in February 2016, finding that impacts to biological resources, soils, hydrology, and water quality (among other issues) would be less-than-significant if mitigation measures identified in the EIR were implemented. No suit or other challenge was filed to challenge the District's certification of the EIR, and the time to do so has now expired.

In 2015, the USACE, who is responsible for the design and construction of the Project, applied to the Regional Board for certification as sole permittee, under Section 401 of the federal Clean Water Act, that the Project does not violate state water quality standards. On March 14, 2016, the Regional Board, through the Executive Officer, issued to the USACE (but not to the District) a "Certification And Waste Discharge Requirements", confirming that construction of the Project, as conditioned in that order, would comply with the federal Clean Water Act and with "applicable requirements of State law." That document also confirmed that construction-related discharges would be regulated by the WDRs contained in State Water Resources Control Board Order No. 2003-0017-DWQ. Paragraph 5 of Order No. 2003-0017-DWQ provides that "[t]hese General WDRs fulfill the requirements of [the Water Code requiring WDRs for persons discharging or proposing to discharge] for proposed dredge or fill discharges to waters of the United States that are regulated under the State's CWA section 401 authority." The Regional Board's March 14, 2016 order thus had the effect of certifying that construction of the Project, as conditioned in that order, was consistent with all applicable laws and was regulated by pre-existing WDRs.

Regional Board staff are now asking the Regional Board to impose on both the USACE and the District new WDRs for construction of the Project. Those draft WDRs include an unnecessary new mitigation project (estimated to cost up to \$20 million) and new conditions that conflict with the ongoing construction of the Project. Those draft WDRs also impose new conditions related to O&M for the Project—even though the Project construction will not be completed until late 2017 at the earliest, the USACE has not yet drafted the O&M Manual for the project, and O&M activities will not occur until many months or years after project construction is completed. The District has repeatedly objected and continues to object to the Regional Board's issuance of new WDRs at this time. The District incorporates all its prior objections to the extent those objections have not been fully resolved.

II. THE PARTIES SHOULD FOCUS ON WATERSHED-WIDE PLANNING

As the Project EIR indicates and this letter further explains in Section V below, this specific Project will not impact jurisdictional wetlands and will result in a substantial increase in the quality and quantity of aquatic and upland habitat at the Project area. As a separate effort, the District is developing an integrated water resources master plan (i.e., the One Water Plan) to enable the District to develop its projects using an integrated and watershed-wide approach by considering water supply, flood protection and stream stewardship objectives. The focus will be to identify and implement multi-objective projects that, together, improve the overall health of watersheds and balance the District's aforementioned three mission components. Following development of countywide guidelines and objectives, the District will develop watershed-specific plans for each of its five major watershed areas. The countywide guidance is nearing completion and the plan for Coyote Watershed (within which the Project is located) is under development and is scheduled to be completed by June 2017.

The District is eager to work with and welcomes input from the Regional Board while the District is developing its One Water Plan. Regional Board input and review could include identification of possible metrics and targets to measure progress in improving the watersheds. The District believes that development and implementation of these plans would further the mutual goals of the District and the Regional Board to maintain and improve the quality and beneficial uses in the five watershed areas while allowing the District to fulfill its mandate to provide water supply and flood protection services to the communities and act as stewards for the region's streams. The Regional Board should defer further consideration of this project-specific tentative order, so as to focus on watershed-wide planning.

Focusing on the entire watershed, rather than just this one Project, is also required by the Water Code. Section 13263(a) requires waste discharge requirements to "take into consideration ... the provisions of Section 13241." Section 13241, in turn, requires consideration of regional issues, such as the "coordinated control of all factors which affect water quality in the area", "[e]conomic considerations", and "[t]he need for developing housing within the region". Because the tentative order considers none of these things, it does not fully comply with requirements in Sections 13263 and 13241.

III. THE TENTATIVE ORDER WOULD MAKE THE REGIONAL BOARD RESPONSIBLE FOR MILLIONS OF DOLLARS IN MITIGATION COSTS

The tentative order would impose numerous conditions related to Project construction above and beyond those contained in the Section 401 certification issued to the USACE. Many of those conditions would likely be extremely expensive. The order would require, for example, off-site "restoration" of more than 20 acres of waters or wetlands in the area. (Finding 21; Provision 16.) Such a large project in this area would cost millions of dollars.

The California Constitution requires state agencies to reimburse local governments for the costs associated with mandates imposed by those state agencies that go beyond whatever mandates federal law imposes. (Cal. Const., art. XIII B, § 6(a).) The California Supreme Court just last month broadly construed this constitutional provision to hold that a Regional Board must reimburse local water agencies for the costs associated with complying with conditions in a waste discharge

requirement order because those conditions derived from State, not federal, law. (*Department of Finance v. Commission on State Mandates* (August 29, 2016) 1 Cal.5th ___, no. S214855.)

The conditions in the tentative order that go beyond those contained in the 401 certification are based on State law, not any federal mandate. The 401 certification already found that the project, as certified in that order, would comply with federal law, so any additional requirements in the tentative order could only be derived from the supposed requirements of State law. And the tentative order imposes conditions related to supposed impacts to “waters of the State”, which is also a concept found only in State law. Because the tentative order’s new conditions go beyond what might be required under federal law, the Regional Board will be responsible for reimbursing the District for all its costs associated with those new conditions.

If, despite the other objections contained in this letter, the Regional Board nevertheless decides to adopt the tentative order, it should understand that it will ultimately be responsible for the very substantial costs of these new conditions, including all mitigation costs and the fees referred to in Provision 37 (this provision is discussed in Section V below).

IV. THE REGIONAL BOARD DOES NOT HAVE AUTHORITY TO ISSUE WDRS TO THE DISTRICT FOR CONSTRUCTION OF THE PROJECT

A. Additional Conditions On A Project The Regional Board Has Certified Complies With All Laws Are Unjustified

The Section 401 certification already found that construction of the Project, as conditioned in that order, “will comply with the applicable provisions” of federal and state law. The Project has not changed since this certification was issued. The Regional Board, having certified that construction of the project complies with all applicable laws, has no legal authority or justification for imposing additional construction-related mitigation conditions on the District or anybody else now.

Regional Board staff’s response to this argument is that the certification “explicitly directs that mitigation would be deferred to the WDRs to be considered later this year.” Although the certification referred to the *possibility* that the Regional Board might subsequently “consider[]” construction-related WDRs, the certification was not conditioned in any way on the Regional Board issuing additional construction-related WDRs. Nor could the Executive Officer, in such an order, pre-commit the Regional Board to issuing additional construction-related WDRs. Now that the Regional Board is being asked to consider additional construction-related WDRs, it should reject them for lack of legal authority.

Regional Board staff have also referred to various communications from Regional Board staff in which additional construction-related mitigation was raised. The District has repeatedly objected to additional construction-related mitigation. (See letters dated 30 March, 29 April, and 16 May.) Regional Board staff communications, over the District’s objections, do not provide legal authority or justification for additional construction-related mitigation where there otherwise is no such authority or justification.

Regional Board staff have also justified their approach by stating that the 401 certification was “incomplete”. But there is no such thing as an incomplete certification. Either a project complies with all applicable law (and is certified), or it does not. The certification here is complete.

B. The District Should Not Be Named As A Discharger For Construction Of The Project

The tentative order names both the District and the USACE as a “Discharger” relative to construction of the Project. (Findings 4 and 6.) The District is not a discharger relative to construction of the Project.

The tentative order invokes Water Code section 13263 as the source of the Regional Board’s authority to issue WDRs to the District for construction-related discharges. (Finding 21.) Section 13263 authorizes the Regional Board to issue WDRs for a “proposed discharge”. But the District is not proposing any discharges related to construction of the Project—the USACE is. Because the District is not proposing any construction-related discharges, Section 13263, on its face, does not authorize the Regional Board to name the District as a construction-related discharger.

Regional Board staff argue that the District should also be named as a construction-related discharger because the District owns the property on which the Project will be built. But Water Code section 13270 prohibits the Regional Board from issuing WDRs to one public agency for discharges on that agency’s property by another public agency.

“Section 13270 prohibits a Regional Board from requiring a report of waste discharge and from issuing requirements to any lessor public agency which leases land to another public agency...” (State Water Board Order WQ 90-3 (San Diego Unified Port District).) Here, because the District, a public agency, is effectively leasing land to the USACE, another public agency, for construction of the Project, Section 13270 prohibits the Regional Board from issuing WDRs to the District for construction of the project on the District’s property.

The Regional Board is already regulating construction of the Project via the Section 401 certification which names USACE as the sole permittee. No good reason exists to now name the District as an additional discharger for construction.

C. Issuing WDRs To The District Violates CEQA

1. CEQA Guidelines Section 15096 Prohibits The Regional Board From Second-Guessing The Environmental Analysis Of The Lead Agency

CEQA also significantly restricts the Regional Board’s authority to impose mitigation measures arising from impacts that the certified EIR found to be less-than-significant. Section 15096(e) of the CEQA Guidelines provides that, if a responsible agency thinks that a certified EIR is “not adequate for use by the responsible agency”, then it “must” either: (i) “[t]ake the issue to court within 30 days”, or (ii) prepare a subsequent EIR “if permissible under Section 15162”, or (iii) assume the lead agency role per Section 15052(a)(3). If the responsible agency does not take one of these three actions, it shall “[b]e deemed to have waived any objection to the adequacy of the EIR”. (Section 15096(e)(2).) If the responsible agency does not challenge the EIR, then “the responsible agency must consider the environmental effects of the project *as shown* in the EIR”. (Section 15096(f), emphasis added.) These provisions leave no room for a responsible agency to second-guess the EIR’s findings about less-than-significant environmental impacts beyond the three ways specified in Section 15096(e).

Regional Board staff appear to read Section 15096(g) to allow the Regional Board, when acting as a CEQA responsible agency, to find significant effects, and impose additional mitigation measures,

even if the EIR finds those effects to be less-than-significant, and without taking any of the actions listed in Section 15096(e). (See Finding 26 (quoting Section 15096(g)(2)).) But Section 15096(g) does not say this. Subsection (g)(1) begins by noting that a responsible agency's role "is more limited than a lead agency." The responsible agency's authority to review "any significant effect the project would have on the environment" can only be referring to significant effects *identified in the lead agency's EIR*, not to effects the responsible agency might think are significant but which are not identified as such in the EIR. The District's interpretation is bolstered by the fact that CEQA prescribes that, where a project is to be carried out or approved by more than one agency, "the determination of whether the project may have a significant effect on the environment shall be made by the *lead agency*." (Pub. Res. Code § 21165(a), emphasis added.) To read Section 15096(g) any other way would deprive Section 15096(e) (which deems objections to the EIR "waived" unless the other steps in that paragraph are taken) and Section 15096(f) (which requires the responsible agency to consider the environmental effects "as shown" in the EIR) of all meaning.

In short, the Regional Board may not adopt additional mitigation for the Upper Berryessa project for impacts identified in the EIR as less-than-significant without at least taking one of the three actions in Section 15096(e). Otherwise, the Regional Board is deemed to have waived any objection to the EIR's findings about less-than-significant impacts and to the adequacy of the EIR's mitigation measures, and the Regional Board cannot impose additional mitigation.

The case law on this issue squarely supports the District. The only published case to interpret Section 15096, *Ogden*, turned on whether a responsible agency could second guess the lead agency's determination that an impact was less than significant without taking the steps identified in Section 15096(e). (*Ogden Env'tl Serv. v. City of San Diego* (S.D. Cal. 1988) 687 F.Supp. 1436, 1450-1452.) *Ogden* found for the lead agency, holding that if the responsible agency believes that the lead agency's environmental review was inadequate; the responsible agency "must take the necessary steps to challenge the lead agency's findings or otherwise be deemed to have waived any objection." (*Id.* at 1451, citing Section 15096(e).) Because the Regional Board has not taken any of the necessary steps to challenge the District's findings about less-than-significant impacts on waters, the Regional Board is deemed to have waived any objection.

Another case held that a responsible agency violated CEQA by not giving adequate consideration to the lead agency's EIR. (*RiverWatch v. Olivenhain Mun. Water Dist.* (2009) 170 Cal.App.4th 1186, 1207.) To reach that result, *RiverWatch* applied the rule that a responsible agency "must consider the environmental effects of the project *as shown in the EIR*", and that, before approving the project, the responsible agency must "find either that the project's significant environmental effects *identified in the EIR* have been avoided or mitigated, or that unmitigated effects are outweighed by the project's benefits." (*Id.*, emphasis added.) *RiverWatch* does not authorize responsible agencies to second guess the findings in the EIR; rather, *RiverWatch* effectively cautions responsible agencies, such as the Regional Board, against second guessing the findings in the EIR.

Adopting the tentative order without taking any of the steps in Section 15096(e) would violate CEQA.

2. CEQA Requires The Regional Board To Conduct Environmental Review Of The Large Project Regional Board Staff Is Proposing

The certified EIR concludes that both temporary and permanent impacts on waters would be less than significant. Putting aside that the Regional Board could have but did not challenge the certified EIR, and even assuming, for the sake of argument, that the Regional Board has authority to impose additional mitigation for impacts on waters (which the District contends it does not), CEQA requires the Regional Board to conduct additional environmental review before adopting WDRs with additional mitigation. The off-site mitigation that would be required by the tentative order includes the “restoration” of more than 20 acres of “riverine wetland area.” (Finding 21; Provision 16.) Such a large off-site mitigation project is likely to have significant environmental effects; its ostensible purpose is to mitigate for other supposed significant environmental effects of the Project on waters. This is a “project” under CEQA for which the Regional Board would have to conduct environmental review before imposing. (See *Laurel Heights Improvement Assn. v. Regents of Univ. of Cal.* (1988) 47 Cal.3d 376, 401 (“mitigation measures must be discussed in an EIR”).)

The tentative order contains none of the findings required by CEQA, and gives no reason why any exemption or exclusion should apply—and the District is aware of none.

Regional Board staff have suggested that, if additional environmental review is required, it will be up to “the District to prepare CEQA documentation.” The District respectfully disagrees. The District, as the lead agency, has already approved the project as-is. If additional environmental review were required at this point because the Regional Board has identified new significant effects or proposed substantial project changes as mitigation, such review would be the Regional Board’s responsibility. (See CEQA Guidelines § 15162(c) (after project approval by lead agency, “a subsequent EIR or negative declaration shall only be prepared by the public agency which grants the next discretionary approval”).) Failure by the Regional Board to conduct additional environmental review before adopting the tentative order would violate CEQA.

V. THE WDRS ARE FLAWED

A. The Tentative Order Overestimates ‘Waters Of The State’

Finding 18 in the tentative order claims that the Project will affect 10.1 acres of waters of the State. This conflicts with the finding in the certified EIR, which found less than 5 acres of affected waters of the State. The Regional Board does not have authority to second-guess the findings in the certified EIR. (See Section IV.C.1 above.)

Included in the 10.1 acres of “waters of the State” alleged in the tentative order is a non-wetland “area of 5.92 acres from the ordinary high water mark elevation to the tops of banks”. There is no authority supporting the assertion that *non-wetland* areas above the ordinary high water mark are “waters of the State”. The Water Code defines “waters of the State” as “any surface water or groundwater”. (Water Code § 13050(e).) No regulations exist further refining this definition. The statutory phrase “surface water or groundwater” cannot reasonably be interpreted to include non-wetland areas above the ordinary high water mark. This area is not waters of the State.

What is more, the tentative order’s proposed mitigation ratios of 1.5:1 (for temporary impacts) and 2:1 (for permanent impacts) in Finding 21 and Provision 16 are arbitrary and not supported by

evidence. There is no basis for mitigation ratios greater than 1:1. Section 4.23 of the Basin Plan provides that the "Water Board will evaluate both the project and the proposed mitigation together to ensure that there will be no net loss of wetland acreage and no net loss of wetland function." As shown elsewhere in this comment letter, the Project will not impact wetlands at all, and will improve other aquatic habitat. Because there will be no net loss of wetland acreage or function, and aquatic habitat will be improved, no mitigation is appropriate. There is certainly no basis for mitigation ratios of 1.5:1 or 2:1.

B. There Needs To Be Standards For All Submissions

Numerous provisions of the tentative order require plans or communications containing, but "not limited to", certain information. (See, e.g., Provisions 15, 15.f.vii, 16, 16.b, and 19.) Another provision would require notification to the Regional Board "whenever an adverse condition occurs as a result of this discharge", and defines "adverse condition" to include, but not be "limited to", certain events. (Provision 30.) The tentative order then threatens serious penalties for violation of any provision. These kinds of penalties would be "criminal in nature". (See *Tull v. United States* (1987) 481 U.S. 412, 418-421 (discussing analogous civil penalties under federal Clean Water Act).)

Due process requires that, before imposing criminal sanctions, the offense must be defined with "sufficient definiteness that ordinary people can understand what conduct is prohibited". (*Skilling v. United States* (2010) 561 U.S. 358, 402 (quoting *Kolender v. Lawson* (1983) 461 U.S. 352, 357), internal brackets, numbers, and quotation marks omitted.) The open-ended provisions in the tentative order that include, but are "not limited to", certain requirements, do not define in advance with sufficient definiteness what must be done to comply. These provisions violate due process and are invalid.

C. The Sedimentation Analysis Is Flawed

The tentative order would find that the Project will make the system more depositional and thereby cause sedimentation problems. (Finding 16.) However, studies and observations by the District strongly suggest that the assumptions in the tentative order about current conditions are flawed in that current conditions are erosional, so making the system more depositional would bring the system closer to equilibrium. Sediment transport modeling and analysis on the Project design by Tetra Tech also show a system closer to equilibrium after the Project is completed.

Bringing the system closer to equilibrium should reduce the need for O&M in this case. The District's Hydrology, Hydraulics, and Geomorphology Unit has prepared technical memoranda (attached as Exhibits 1 and 2) explaining these sedimentation issues, and responding to Regional Board staff's analysis of this issue.

D. The Tentative Order Includes Errors, Omissions, And Problematic Conditions

The tentative order contains numerous other errors, omissions, and problematic conditions. Those are described here:

1. Finding 3

This finding incorrectly states that both the USACE and the District will be responsible for Project construction. Only the USACE will be responsible for Project construction.

2. Finding 4

This finding incorrectly states that the District is a “Discharger” collectively with the USACE. The District is not a construction-related discharger (see Section IV.B above), and is not currently proposing any discharges associated with operations and maintenance.

3. Finding 5

This finding incorrectly states that construction of the Lower Berryessa Creek and Lower Calera Creek Flood Protection Improvements Project will be completed in October 2017. The current schedule shows completion of that Project (except for revegetation planting) in October 2018.

4. Finding 6

Finding 6 incorrectly states that the mitigation and monitoring requirements are necessary for the compliance with federal and state regulations. There are no federal monitoring requirements, and no additional construction-related mitigation is appropriate.

5. Finding 6.e

This finding incorrectly states that the Project will include a third ramp, downstream of the Montague Expressway crossing. The Project will include construction of only two ramps, both located upstream of the Montague Expressway crossing.

6. Finding 6.i

Finding 6.i could be read to suggest that the Project will replace and realign all utilities within the Project right-of-way. This overstates the Project impact. Only utilities directly affected by construction will be replaced or realigned; that replacement or realignment will be performed by the USACE as part of Project construction.

7. Finding 6 Table 1

This finding incorrectly lists the area of ramps as 0.01 acre. The correct area is 0.1 acre.

8. Findings 7-9

As a general matter, since both USACE and the District are named as “dischargers”, the tentative order fails to make clear which of the two agencies would be responsible for complying with the conditions. Findings 7-9 fail to state what organization will be performing the tasks described in these sections. The USACE will be performing these tasks.

9. Findings 10-15

Finding 10 requires submission and approval by the Executive Officer of a number of plans before the beginning of construction. First, there is no legal basis for the submission of additional construction-related plans. (See Section IV above.) Second, construction is scheduled to begin before the Regional Board's consideration of the tentative order; thus, even if adopted, the submittal of these plans prior to start of construction would be infeasible.

With respect to utilities plan (see Finding 12), Regional Board staff considered, but ultimately rejected, conditioning the Section 401 certification on the submission of a utilities plan. So there is no basis to require such a plan now, when that plan was not previously included in the 401 certification.

With respect to dewatering plan, after noting that the groundwater management plan only addressed the Jones Chemical site, Finding 14 indicates that the order will require submission and implementation of "a complete Dewatering Plan that meets the minimum criteria outlined in Provision 9, acceptable to the Executive Officer." The 401 certification simply requires submission of a dewatering plan consistent with EIR Mitigation Measure WAQ-B and USACE's 90 percent specifications with no reference to acceptance by the Executive Officer. As described above, the Regional Board has no authority to require a construction-related dewatering plan, because it has already required one in the 401 certification—especially one that includes broader requirements than the one required in the 401 certification. However, the District understands that USACE will prepare a dewatering plan for the entire project area.

The District also notes several discrepancies related to these findings. For example, note Provision 9 requires dewatering plan to be submitted 30 days prior to start of dewatering activities, which is inconsistent with the due date stated in Finding 10, which requires the listed plans to be submitted before the beginning of construction. Similarly, Provision 12 requires post-construction stormwater management plan to be submitted no later than 60 days prior to construction, which is inconsistent with the "before construction" due date in Finding 10. Also, Finding 10 fails to mention that USACE submitted a project groundwater management plan to the Regional Board on or about January 26, 2016.

10. Finding 16

This finding makes incorrect statements about sedimentation. (See Section V.C above.)

This finding incorrectly states that development of the O&M Manual will be a "collaboration of the Water Board and other appropriate state agencies." The USACE alone will be developing the O&M Manual. Other statements throughout this finding about what the O&M Manual will set, include, or adapt are premature or already specified in the Section 401 certification.

This finding notes that the tentative order would authorize the District to conduct maintenance consistent with the District's existing Stream Maintenance Program. The USACE has yet to draft the O&M Manual. Depending on what the O&M Manual calls for, the District may need to approach the Regional Board for modifications to the tentative order. In addition, the statement that "... compliance with this Order will be determined by compliance with the terms of this Order" does not make logical sense.

11. Finding 17

This finding refers to submittal of an adaptive management plan to guide future maintenance activities. Note that Finding 10 requires such a plan to be submitted before construction, which is inconsistent with the requirement in Provision 15 to submit the plan no later than 6 months after the tentative order.

12. Finding 19

Finding 19 speculates that the project area “provides potential habitat for rare or endangered species.” This finding is not supported by any evidence and contradicts the Final EIR and the U.S. Fish and Wildlife Coordination Act Report (CAR). With regard to federally protected species, the CAR states “The [USACE] has determined that the project would have no effect on federally-listed threatened or endangered species, and therefore no further consultation is required with the Service or NOAA Fisheries.” With respect to state-protected species, the CAR states “The [USACE] has determined that due to the limitations in suitable habitat, the project would have no effect on State-listed species as well.” Section 3.5.5.1 of the Final EIR analyzes the potential for the proposed project to “have a substantial adverse impact on, either directly or through habitat modification, on any species identified as candidate, sensitive, or special status in local or regional plans, policies, or regulations or by the CDFW, or USFWS.” The Final EIR concludes that impacts from construction and operation of the project would be “less than significant”. Similarly, Section 5.5.3.3 of the Final EIS for the Project states that it “would not substantially modify the existing habitat or adversely affect Federal and State listed species, therefore would have a less than significant effect.” The Draft WDR improperly ignores these findings, which are based on intensive biological field investigations of the project area, and baselessly asserts that the project would affect protected species.

13. Finding 20

This finding describes construction-related impacts. The District is not responsible for construction, and the Regional Board has no authority to impose conditions on the District related to construction. (See Section IV above.)

Finding 20 states that the project will result in permanent impacts to waters of the State and waters of the United States. This assumption of permanent impact is contrary to the findings of the EIR, which found that impacts to waters would be less than significant, and to those of the USFWS CAR, which states “Based on our review, the proposed project would result in the temporary loss of habitat acreage and value for species inhabiting emergent wetland and annual grassland habitat. Wildlife species utilizing these areas would be displaced during construction activities and would likely return to the area following the completion of the project.”

This finding also incorrectly states that buried rock riprap in the creek bed will permanently impact beneficial uses of the creek. While construction disturbance of the creek will result in a temporary impact to in-stream habitat, after construction is complete the rock riprap will be covered with native soil and seeded with native hydrophilic vegetation. This will result in an improvement in habitat compared to the existing condition. As stated in the certified EIR, the project will benefit the following beneficial uses of the creek designated in the Basin Plan: warm freshwater habitat (WARM) and wildlife habitat (WILDLIFE). The Regional Board does not have authority to second-guess that finding. (See Section IV.C.1 above.)

14. Finding 21

This finding refers to a requirement for submission of a Mitigation and Monitoring Plan (MMP) prior to the start of construction; however, this is not consistent with the Plans and Reporting Requirement section of the 401 certification. The specified due date is also inconsistent with Provision 16 in the tentative order which states that the MMP shall be submitted no less than six months from the date the order is adopted. The Regional Board also has no authority to impose additional construction-related conditions now. (See Section IV above.)

Paragraph 1 of this finding cites policies for mitigation impacts to jurisdictional wetlands. But wetland delineation studies performed in 2015/2016 found no jurisdictional wetlands to be present in the project area. The results of these investigations are summarized in section 3.5.2.7 of the Final EIR for the project and the entire wetlands delineation report is reprinted as Appendix C of the Final EIR. The Section 401 certification acknowledged (Finding I) that “[n]o jurisdictional wetlands are in the Project.” No jurisdictional wetlands are present in the Project area, and none will be impacted.

Paragraph 2 of this finding fails to consider or quantify features of the Project design that will offset and mitigate impacts of Project construction to habitat included in Waters of the United States and State. For example, the project will create 16.0 acres of habitat within Waters of the U.S. and State. Section 3.5.5 of the Final EIR analyzes in detail the potential impacts of the proposed project on habitat. The proposed project would result in a net increase of 3.18 acres in Waters of the U.S. The habitat value of this increased area would also be improved over baseline conditions as non-native and invasive vegetation would be removed and the area seeded with native wetland plant species. Additionally, grassland habitat, which the USFWS identified as an important habitat type in the CAR, would increase in area by 3 acres, and would be seeded with native grass and forbs, replacing the existing predominantly non-native vegetation cover. Finally, the project would preserve existing upland trees and shrubs wherever possible, and would replace removed native trees and shrubs with native plantings at an overall ratio of 2:1. Overall, the project would result in a substantial increase in habitat acreage, and replacement of the predominantly non-native species now present within those habitats with native plantings, which will be maintained to ensure they thrive.

Paragraph 5 of this finding requires ten years of monitoring and reporting for mitigation tree/shrub plantings, which exceeds the five years of monitoring required by the Regional Board and CDFW for the Lower Berryessa Creek and Lower Calera Creek Flood Protection Improvements Project (see CIQWS Place no. 768945 (MB), SAA 1600-2013-0159-R3). Furthermore, this is inconsistent with the 5 year maintenance requirement under the condition 11 of the 401 certification.

This finding also refers to a requirement for off-site mitigation for construction-related impacts. The Regional Board does not have authority to impose these conditions on the District now. (See Section IV above.)

15. Finding 22

Finding 22 refers to requirement for monitoring and technical reports. The Regional Board has no authority to impose additional reporting conditions related to construction on the District now. (See Section IV above.) This finding also does not clarify responsibility for particular reports.

16. Finding 23

Finding 23 incorrectly asserts that the project 401 Certification states that the WDR will address “an off-site mitigation plan”. The project 401 Certification does not require or discuss off-site mitigation for project impacts. In fact, the Final EIR finds that on-site plantings will mitigate for all project impacts to habitat.

17. Finding 25

Finding 25 incorrectly lists the mitigation measures that the Project EIR has identified to mitigate the significant impacts to less-than-significant levels. This finding includes the following measure which is not contained in the EIR: pre-construction aquatic life and wildlife surveys. This measure was not included in the EIR because the environmental impact analysis concluded that the Project would not result in significant impacts on any special status aquatic or wildlife species.

18. Findings 28, 30

These findings cite the Basin Plan Wetlands Fill Policy and the California Wetlands Conservation Policy. But no jurisdictional wetlands are present in the project area and the project will not impact wetlands. These policies cannot legally be applied to the Project.

19. Provisions

The Regional Board does not have authority to impose any provisions related to construction. (See Section IV above.)

Provisions 6, 8, and 9 do not clarify that the USACE will be performing project construction and will be the sole discharger during the project construction phase.

Provision 9, 12, 15 and 16 all have submission due dates that are inconsistent with the due date specified in Finding Section 10.

Provision 8 contains requirements for a construction-related utilities plan. As described above, the Regional Board considered but ultimately did not include a requirement for a utilities plan in the 401 certification, and it does not have authority to now impose construction-related conditions. (See Section IV above.)

Provision 9 contains requirements for a construction-related dewatering plan, but dewatering was already addressed in the 401 certification, and the Regional Board does not have authority to impose construction-related conditions now. (See Section IV above.)

Provision 12 states that the post-construction stormwater monitoring plan is due 60 days prior to start of construction. This was not a requirement under the 401 certification and, to the extent it is intended to require a stormwater monitoring plan for in-channel construction work, may not be legally imposed as a construction-related condition now. (See Section IV above.) Construction is also scheduled to begin before the Regional Board’s consideration of the tentative order so, even if adopted, the condition would be infeasible.

Provision 13a requires extensive testing for contaminants for all "imported soil fill material." Planting soil or soil amendments used during Project revegetation will be obtained from commercial sources and will be free of contaminants.

Provision 13a also requires submission of the Adaptive Management Plan six months after the order would be issued, which is before the project Operations & Maintenance (O&M) Manual will be available. This condition would be infeasible because adaptive management principles need to be incorporated into the O&M Manual for this management approach to be effective. The Adaptive Management Plan and the O&M Manual must dovetail, which will require the simultaneous and integrated preparation of the two plans.

Provision 15, Part F requirements are based off the incorrect assumptions about sedimentation in Finding 16. (See Sections V above.)

- Part F, i: Part A would require surveys to be conducted and analyzed periodically, which conflicts with the thresholds here of five 2-yr events, one 10-yr event, or to evaluate whether flow events have occurred that can enable sedimentation analysis, as this would be done every time a survey is performed. Other projects, like the Lower Silver Creek capital project (Order R2-2002-0012), have required merely a downscaled geomorphology report that summarizes how the channel is behaving every few years (i.e., is the channel incising/aggrading?) with the type of data collected in Part A.
- Part F, ii: It is extremely difficult to determine sedimentation rates, both pre-project, and post-project. This requirement assumes that sedimentation will occur and sediment removal can be used as quantitative data, which will not be the case (current or in the future).
- Part F, iii and iv: These requirements for analyses on the UPRR bridges and stage-discharge relationships are unnecessary. Since cross section and profile monitoring will already be performed to determine capacity and sedimentation processes for O&M, conclusions about aggradation and degradation would already be known.

Provisions 16.a and 19 refer to an undefined mitigation project to mitigate for wetlands impacts even though the Project will not impact jurisdictional wetlands. There is no authority or justification for these provisions. The Regional Board would also need to comply with CEQA before committing to such a project. (See Section IV above.)

Provision 18 requires pre-construction surveys for aquatic life and wildlife. However, the certified EIR determined that no significant impacts would result to aquatic life or wildlife, and the Regional Board does not have authority to second-guess that EIR finding. (See comment on Finding 19, and Section IV, above.) Construction is also scheduled to begin before the Regional Board's consideration of the tentative order so, even if adopted, the condition would be infeasible.

Provision 28 requires submission of as-built drawings eight weeks after completion of construction, which is insufficient to complete these complex drawings. The Regional Board lacks authority to impose additional construction-related conditions now. (See Section IV above.)

Provision 37 requires the discharger to pay fees. There is no authority under the Water Code for requiring the District to pay fees. In any event, the Regional Board would be responsible for any fees the District might be required to pay. (See Section III above.)

20. Attachment A

Attachment A, Figures 2 and 3, use the terminology "Channel Bed rock armoring," which fails to account for the fact that the rock will be covered with native soil and vegetated. "Vegetated buried bed and bank rock" more accurately describes the proposed Project.

Attachment A, Figure 3, incorrectly shows the upstream boundary of vegetated buried bed and bank rock.

21. Attachment C

Attachment C, item b requires plantings based on the outdated 2013 U.S. Fish and Wildlife Service Coordination Act Report. The certified EIR's Mitigation Measure BIO-B for replacement plantings of native trees and shrubs already addresses this issue. The Regional Board does not have authority to second-guess the EIR. (See Section IV.C.1 above.)

Attachment C, item c requires irrigation of wetlands plantings. The Project does not include wetlands plantings and none are necessary to mitigate project impacts.

Performance standards contained in Attachment C, Table 1, Grass and aquatic hydroseed area exceed those approved by RWQCB and CDFW for Lower Berryessa Creek and Lower Calera Creek Flood Protection Improvements Project (see CIQWS Place no. 768945 (MB), SAA 1600-2013-0159-R3). It is not possible to maintain non-native vegetation to 10% in this area where abundant amounts of non-natives are growing in the urbanized areas surrounding the creek and provide continuous input of non-native seeds. The following standards were approved by CDFW and RWQCB for the Lower Berryessa Creek and Lower Calera Creek Flood Protection Improvements Project:

- Year 1: 40% cover
- Year 2: 50% cover
- Year 3: 60% cover
- Year 4: 70% cover
- Year 5: 70% cover

Maintain invasive (but not non-native) plants \leq 10%

Attachment C, Table 1 addresses riparian plantings. The Project will not impact riparian trees/shrubs and does not include riparian planting.

Attachment C, Table 1 addresses Seasonal wetland communities at the off-site mitigation area. The project will not impact jurisdictional wetlands and does not include off-site mitigation for impacts to seasonal wetland communities. The Regional Board lacks authority to require off-site mitigation. (See Section IV above.)

VI. PROCEDURAL REQUIREMENTS

The Regional Board's consideration of the tentative order is an adjudicatory proceeding. As such, certain procedures required by due process should be followed.

A. Right Of Reply

If, after receiving this comment letter, Regional Board staff intend to advance additional arguments, documents, or evidence, then the District requests that it be given a reasonable amount of time to review those additional materials and reply to them before any hearing.

B. Hearing

The District requests a hearing on the tentative order, with the right to call witnesses and to cross-examination.

C. Separation Of Functions And Ex Parte Communications

When acting in an adjudicatory proceeding, agencies must institute an internal separation of functions between prosecutors, decision-makers, and the decision-makers' advisors, and prohibit ex parte communications between them. (*Morongo Band of Mission Indians v. State Water Res. Control Bd.* (2009) 45 Cal.4th 731,737-739; *Dep't of Alcoholic Beverage Control v. Alcoholic Beverage Control Appeals Bd.* (2006) 40 Cal.4th 1, 10-15.) Although the District has previously asked, Regional Board staff have yet to explain how the Regional Board will implement these requirements here, and which people will serve each function. Those questions need to be answered.

VII. CONCLUSION

Based on the reasons stated above, the tentative order should be rejected. The District shares the Regional Board's interest in protecting water quality of the state. In lieu of issuing a costly and legally unfounded WDR, the District invites the Regional Board to participate in the watershed-wide planning underway as part of the District's One Water Program. The District believes that the watershed-wide planning approach is a comprehensive and more effective approach for the two agencies to work together collaboratively towards furthering our mutual goal of achieving water quality objectives.

If you have any questions, please contact me by phone at (408) 630-2035 or by email at mrichardson@valleywater.org.

Sincerely,



Melanie Richardson, P.E.
Interim Chief Operating Officer-Watersheds

Enclosures: Exhibit 1 – Channel Stability & Geomorphologic Characteristics
Exhibit 2 – Responses to RWQCB Memo for Project Team

cc: N. Camacho, M. Richardson, N. Nguyen, R. Callender, R. Chan, J. Valencia, J. Manidakos,
C. Hakes, File



TECHNICAL MEMORANDUM

EXHIBIT 1

PROJECT: Upper Berryessa Flood Protection Project **DATE:** July 20th, 2016
SUBJECT: Channel Stability & Geomorphologic Characteristics
PREPARED: Jack Xu, PE, CFM

1. PURPOSE

The purpose of this report is to summarize current Upper Berryessa channel geomorphology and its potential impacts to the current proposed project.

2. EXISTING CREEK MORPHOLOGY

To determine the existing geomorphology of Upper Berryessa, several analyses were performed:

- Review of existing literature.
- Field visit to characterize the current creek state.
- Historical comparison of channel geometry.

These analyses will focus in general on sedimentation and degradation issues, since any plan form movement of the creek has not been allowed in recent history due to urbanization and right of way constraints, and is also not applicable to the project.

LITERATURE REVIEW

In 2009, Colorado State University completed a geomorphic assessment¹ of Berryessa Creek. This study stopped upstream of I-680, which is just upstream of the Upper Berryessa Flood Control Project reach (Figure 1).

In the study, Jordan compared historical construction drawings from the District², as well as from the US Army Corps³, with a 2004 survey of the channel profile. The findings show a generally degradational trend for the creek from the 1960's to the mid 2000's for Berryessa Creek reaches upstream of I-680 (Figure 2).

¹ B.A. Jordan, W.K. Annable, and C.C. Watson. Colorado State University. An Urban Geomorphic Assessment of the Berryessa and Upper Penitencia Creek Watersheds in San Jose, California. April 30, 2009.

² Santa Clara County Flood Control and Water District (SCCFCWD) (1967). Report on Channel Improvements on Berryessa and Tularcitos Creeks, Zone E-1, Projects 40017 and 40040.

³ United States Army Corps of Engineers (USACE) (1993). Coyote and Berryessa Creeks, California Berryessa Creek General Design Memorandum.



Figure 1: Upper Berryessa Creek Project Location Map

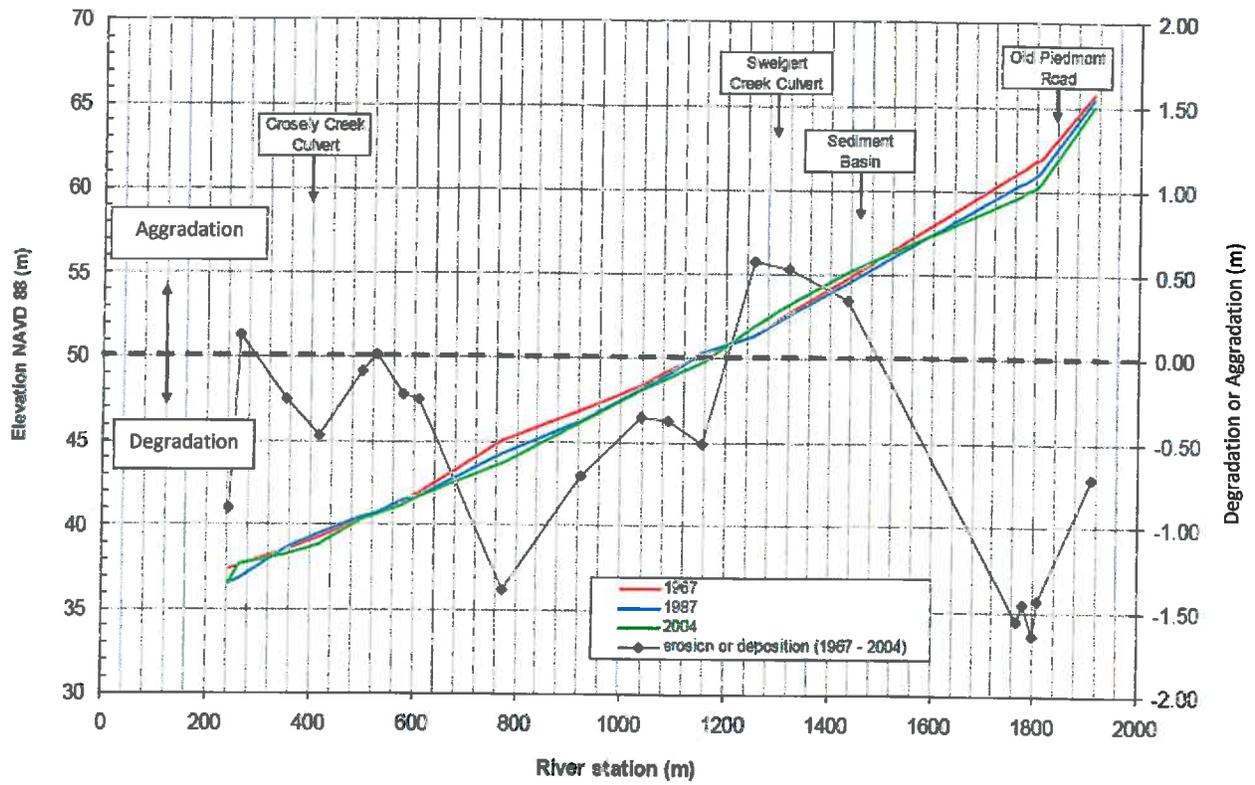


Figure 2: Berryessa Historical Longitudinal Profile (Piedmont to I-680 from Jordan 2009)

FIELD VISIT

District staff visited the Upper Berryessa project reach in the summer of 2016 to collect field observations on existing creek behavior. The following observations overwhelmingly point to a channel that has incised. Figures 3A and 3B show local erosion attributed to incision.



Figure 3A: Bank erosion upstream of Montague Expressway



Figure 3B: A deep and narrow low flow channel near Piedmont Creek

Figures 4A, 4B, and 4C are storm sewer outfalls. 4A and 4B are located upstream of Los Coches Street. The lighter sackcrete (newer) outfall seems to tie in properly with the channel, indicating at least some length of stability. The darker sackcrete (older) outfalls to a high bench and has a 3' drop where there is no sackcrete reinforcement, indicating that the channel has incised over this time. Figure 4C is upstream of Montague Expressway, and it is evident the entire outfall structure has collapsed from its original location due to the channel bed dropping.



Figures 4A, 4B, and 4C (left to right): Storm Sewer Outfalls

Figures 5A and 5B depict the end of a 90 degree bend in Berryessa Creek just upstream of Montague Expressway. This bend is a concrete trapezoid channel, which then drops into the current natural channel that has incised up to this point. The concrete bottom acts as a grade control structure, preventing the head cut from progressing upstream.



Figure 5A: 2.5' Drop upstream of Montague Expressway



Figure 5B: View of drop upstream of Montague Expressway

Figures 6A and 6B show the creek just upstream of the Los Coches Street crossing. It is evident that there is significant channel erosion and down cutting occurring in the vicinity of the bridge, around, and under the concrete apron (Figure 7A). This erosion does not appear to be caused by local obstruction, since the channel thalweg ties in well both upstream and downstream. Instead, the erosion is a product of channel incision.



Figure 6A: Erosion upstream of Los Coches Street



Figure 6B: View of erosion upstream of Los Coches Street

Further analysis of the Los Coches Street Bridge seems to indicate that the apron is an artifact of an old bridge crossing. In Figure 7A, looking upstream, it is evident that the apron is aligned with the channel geometry. The western wing wall in Figure 7B (looking downstream) was left in place, while the eastern wing wall was removed to accommodate the pier for the newer bridge. Using the apron as an approximation for the historic bed, it is evident that the creek has incised in this area, moving around the concrete obstruction (Figure 6B).



Figure 7A: Los Coches Street looking Upstream



Figure 7B: Los Coches Street looking Downstream

HISTORICAL COMPARISON

Historic data was reviewed to plot against the current existing conditions model from the Upper Berryessa Project to further ascertain the creek's behavior.

- Typical sections from a 1955 engineer's report⁴ for proposed improvements downstream of Los Coches Creek. It was determined that this design was never constructed. However, the existing typical section provides insight to the condition of the channel in 1955 and is shown on Figure 8A.
- A plan set dated in 1973 was found, but upon further review, it was also determined that this design was never actually constructed. This plan set was for the design of the 1967 design report mentioned next.
- The 1967 design report that was used by the Jordan study was utilized. The existing profile was used, but the actual design was very similar to the 1973 plans, which were not constructed. Datum was not explicitly stated in the study and may not be NGVD29, and may not be accurate. Datum was assumed by Jordan to be NGVD29.
- HEC-2 models⁵ from Flood Insurance Studies done in the late 1970's.

The comparison between all the profiles indicates a degradational trend from 1960's to the present in the upper and lower project reaches, while the middle project reach has reached relative stability. This is consistent with Jordan's findings of a mainly degradational channel (Figure 2). Figures 8A, 8B, and 8C show cross sectional change, while Figure 9 shows the channel bed change from 1988. Channel thalweg and cross sections from the 90% proposed project design were also included as reference.

⁴ Santa Clara County Flood Control and Water Conservation District. Engineer's report on the proposed improvements of Los Coches Creek and Berryessa-Los Coches Diversion Channel in the Milpitas area of zone E-1 of the Santa Clara County Flood Control and Water Conservation District.1955.

⁵ George Nolte and Associates 1988 Flood Insurance Study HEC-2 Hydraulic Model.

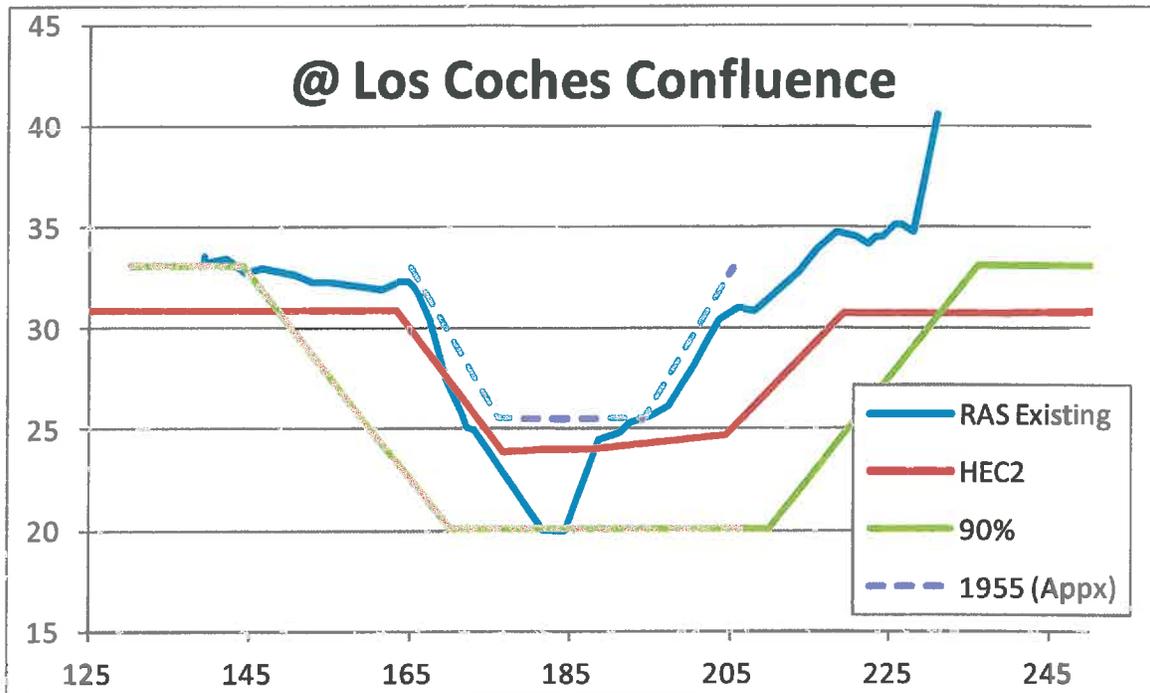


Figure 8A: Berryessa Historical Cross Section Comparison @ Los Coches Creek (Project Reach)

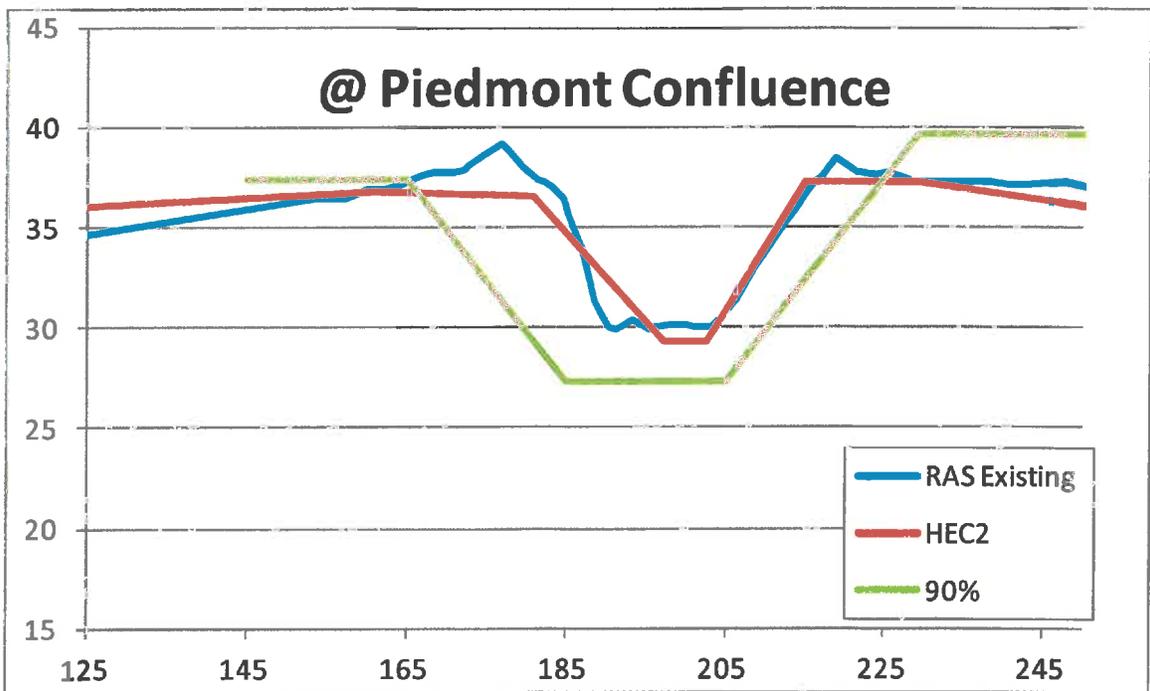


Figure 8B: Berryessa Historical Cross Section Comparison @ Piedmont Creek (Project Reach)

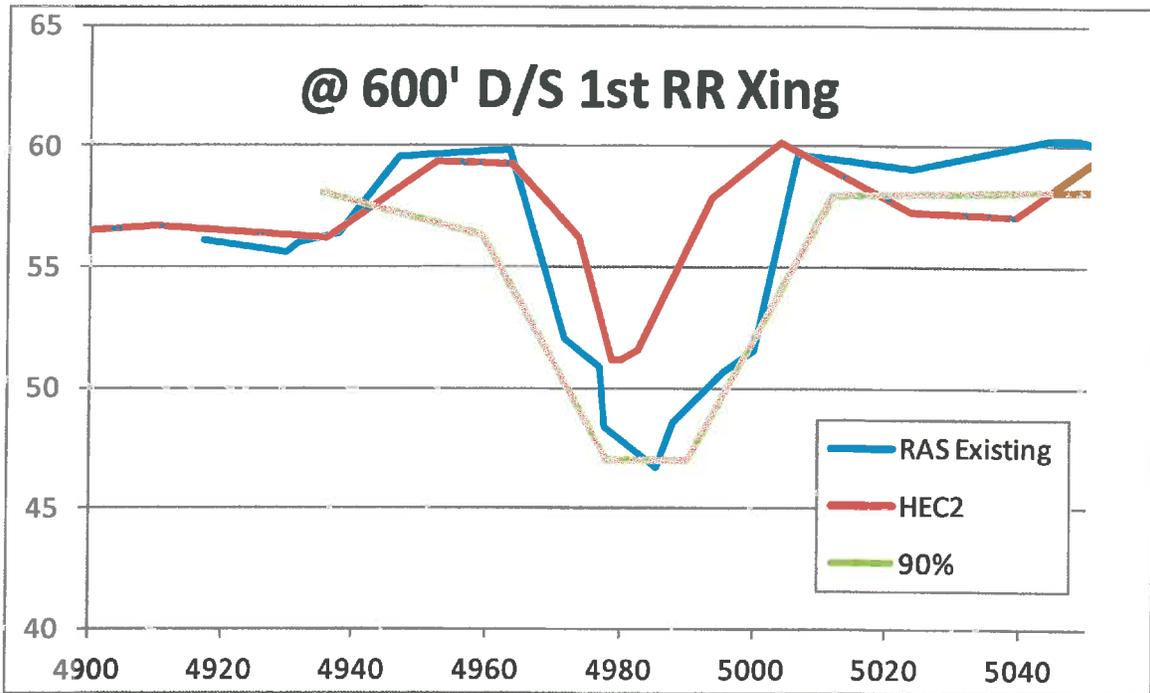


Figure 8C: Berryessa Historical Cross Section Comparison 600' Downstream of First UPRR Crossing (Project Reach)

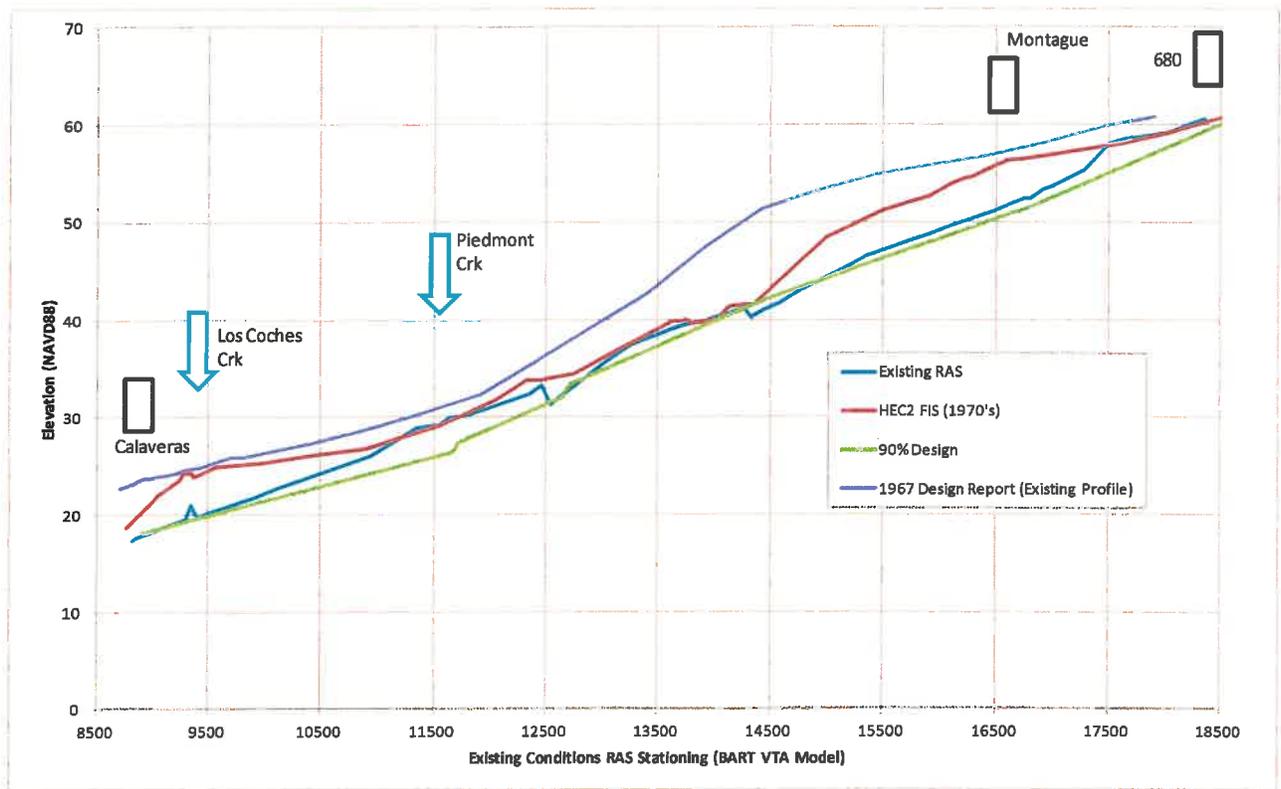


Figure 9: Berryessa Historical Longitudinal Profile (Project Reach)

3. PROPOSED PROJECT DISCUSSION

Evidence presented previously in this study show that the channel has mostly a degradational trend, with a section that appears to be in equilibrium. The proposed project will stabilize the channel banks and in most cases increase the cross sectional area of the creek (see Figures 8A, 8B, and 8C), while keeping the channel roughness and slope relatively the same. This should reduce shear stresses and move the channel away from degradation and towards equilibrium and/or possibly aggradation.

There is a section between STA 145+00 and STA 115+00 that appears to have stayed stable. This is anecdotally supported as well from the field visit, since none of the photos supporting incision were taken in this area.

A sediment transport analysis on the proposed condition was performed by Tetra Tech⁶ using the HEC-RAS sediment transport module. The study concluded that, in general, there are areas with slight depositional tendencies during a large flood event. Overall, there was not significant bed changes in large flood events for the proposed design reach.

A separate study⁷ was done by the District utilizing the same Tetra Tech model, but with a long term sediment transport analysis done on the proposed condition for over 50 years. The results indicate that over the long term, the channel will continue to be degradational.

If, in fact, portions of the channel continue to be degradational after the project, a small low flow channel would be carved out by the channel below the current invert and a bankfull channel would form, if the bed is erodible. In some locations, there is rip rap revetment on the channel bed, which would prevent any incision.

However, it is also possible that sections of the creek would be near equilibrium or even possibly aggradational after the project in some locations, given some increases in cross sectional area. In this case, the creek would form small benches at the height of bankfull depth, which can be seen at a previous project upstream of Montague Expressway at the 90-degree bend, where a widened concrete channel has sediment deposition (Figure 10). This would not be reflected in the sediment transport analysis done by both Tetra Tech and the District since the model used is in 1D.

To determine possible impacts to flood conveyance of the proposed project due to the creek depositing material to create a bankfull channel, the current bankfull geometry will be mimicked and imbued into the proposed 90% design model.

⁶ Stefanovich, Dragi. Tetra Tech. Upper Berryessa Sediment Transport Technical Memo. 7/14/15.

⁷ Xu, Jack. SCVWD Technical Memorandum. Upper Berryessa Flood Control Project, Long Term Sediment Transport Analysis for O&M.

4. UPPER BERRYESSA BANKFULL CHANNEL

Existing literature and field visits were utilized to determine the current bankfull channel for use to determine potential impacts to the proposed projects if the channel deposited sediment and creates a bankfull channel.

The 2009 Jordan report characterized the Berryessa Creek bankfull channel characteristics upstream of I-680 for three continuous years and averaged the results. The average bankfull area was between 1.5 to 2 square meters (16 to 21 square feet), with a channel slope of 0.017. In the project reach, the channel slope is closer to 0.005, and has a larger drainage area. Therefore, we would expect the bankfull cross section to be larger.

Bankfull indicators along the project reach were very difficult to determine due to the degradational nature of the urban creek. However, upstream of Montague Expressway, by the 90-degree bend, sediment deposition along the concrete trapezoidal channel was observed due to a widened cross section (Figure 10). This cross section was about 12' wide nominally, with a 10' wide bottom, and 1.5' to 2' deep, giving a cross sectional area of 18 to 24 square feet. However, this area is lined in concrete and should experience faster velocities when comparing to natural channels. In addition, sediment in this area was removed in 2009, according to the Upper Berryessa maintenance records, which means that the true bankfull channel might be slightly larger.

Both reference locations are upstream or at the upstream end of the project reach, and it is expected that the bankfull sections in the project reach, especially downstream the Los Coches and Piedmont tributaries, will be larger.



Figure 10: Bankfull Channel upstream Montague Expressway

5. IMPACTS TO PROPOSED PROJECT

MODEL SETUP

Using the previous analysis, the following bankfull cross sections were selected for use. These sections will be used as the assumption over the entire reach in the existing 90% model to determine impacts to the project for the design flow in the Design Documentation Report (DDR)⁸. This is conservatively on the smaller end for what would be the expected bankfull geometry for Berryessa Creek in this location. A smaller section would produce more sedimentation to create benches on the channel bottom.

- 24 sq ft for upstream of Piedmont Creek (STA 115+00). 2' deep, 1:1 side slopes, assuming a 14' top width and 10' bottom width that was normalized to a consistent 12'.
- 32 sq ft for downstream of Piedmont Creek. 2' deep, 1.5:1 side slopes, assuming an 18' top width and 12' bottom width that was normalized to a consistent 15'.
- Proposed cross sections with a bottom width of 12' were left as is except transition areas near bridges where bottom width exceeded 12'. This occurred at both UPRR crossings and Yosemite Drive. Ames Street did not have any transitions.

To model the bankfull cross sections, channel obstructions will be used. A typical obstructed cross sections can be seen below in Figure 11.

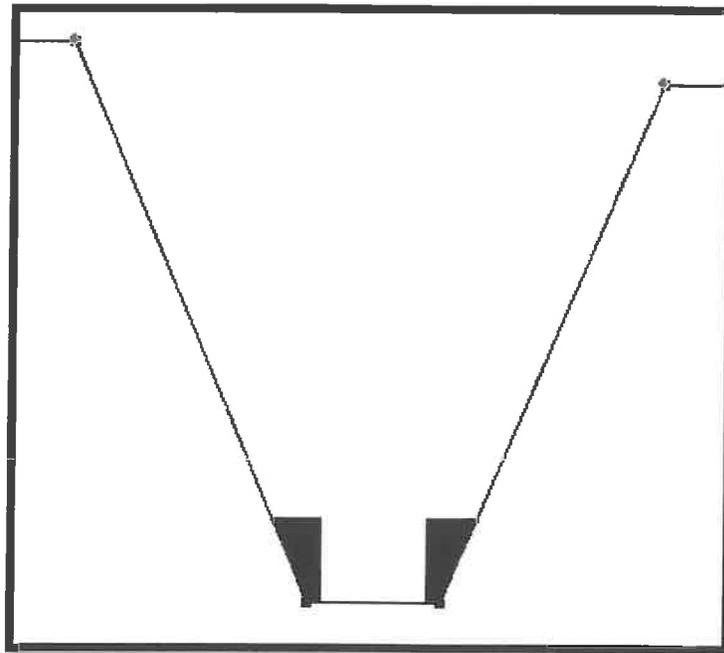


Figure 11: Typical Obstructed Cross Section

⁸ USACE, Tetra Tech, Noble Consultants. Upper Berryessa Creek Flood Risk Management Project. Milpitas, California. Design Documentation Report. 90% Final Submittal. January 2016.

Table 2 below details the model parameters for obstructions. No other parameters were changed and backwater effects from possible aggradation from the Lower Berryessa project downstream of Calaveras were not considered. A summary profile of the output is on Figure 13.

Table 2: Bankfull Accretion Table for Modeling

Stations	Bottom Width	Bankfull Width	Bankfull Area	Bankfull Depth
114+73 to 87+20	40	15	32	2
124+53 to 115+00	20	12	24	2
141+08 to 125+19	12	n/a	n/a	0
143+00 to 141+60	30 - 40	12	24	2
160+50 to 143+42	12	n/a	n/a	0
191+00 to 161+46	16	12	24	2

RESULTS

The results indicate that approximately 200' from STA 100+80 to STA 99+00 will experience overtopping. The water surface at this section will vary between 31.9' to 31.7', spilling over the right bank. The rest of the creek can handle the additional loss in cross sectional area and will not experience any overtopping.

This weak spot is documented in the 90% DDR as index point 5⁹, where there was only 0.87' of freeboard without the bankfull accretion, which did not meet the Corp's non-exceedance criteria. In the DDR, the surrounding topography was analyzed, and determined that the area subject to possible flooding was a localized depression within the UPRR spruce line tracts. The impact to this area would be negligible if flood waters entered, and the decision was to accept a lower non-exceedance probability for this location.

When additional sediment was added, it was very probable that this location would overtop. The topography in this location was analyzed under the current situation and it is determined that the overflow would be limited to this location as well, causing little to no damage to life and property. Figure 12 shows the depression footprint that is lower than 32'.

From STA 105+00 to STA 100+80, the water surface is very close to the top of right bank. The topography in this area is generally flat while sloping upwards away from the creek. If any water breaks out from this location, it would also be localized behind the large warehouse.

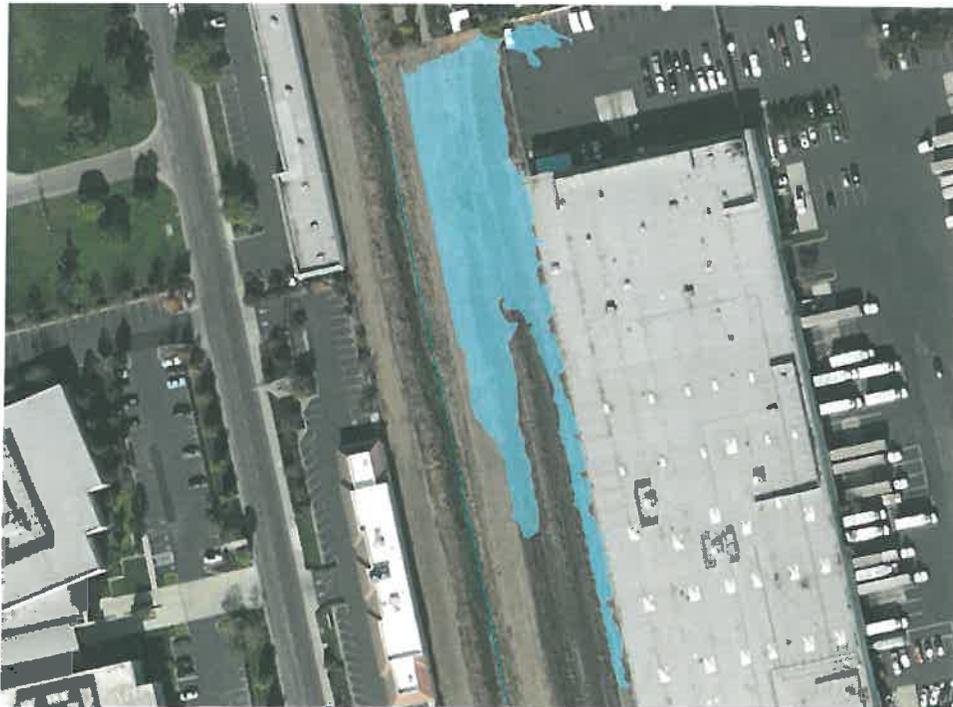


Figure 12: Potential Flood Impact near STA 100+00

⁹ Corps 90% DDR, Section 5.55, Table 5.14.

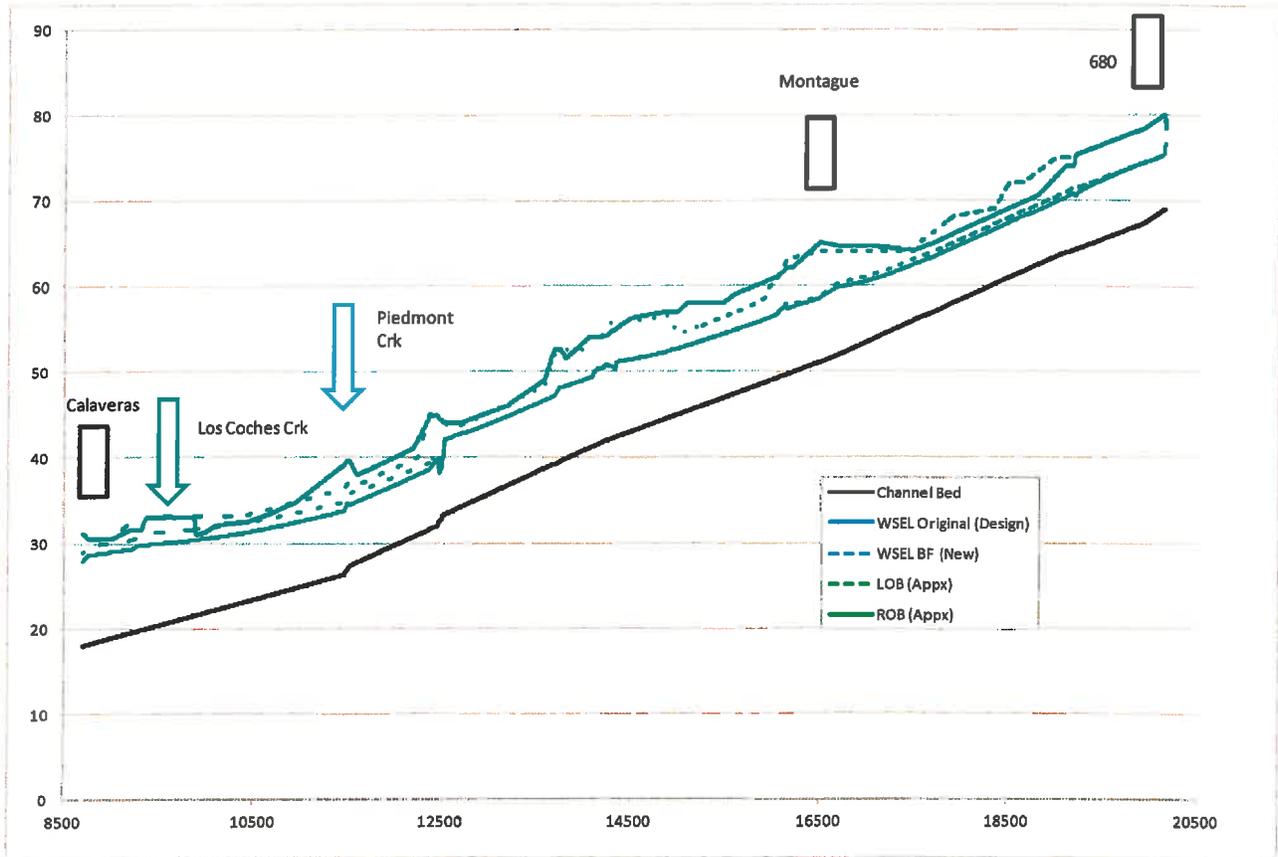


Figure 13: Modeled Results - Water Surface Profile

POSSIBLE FUTURE SEDIMENTATION ISSUES

Analysis has shown that with the bankfull benches, the design flood conveyance would be maintained without much issue. This means that any sedimentation that would be expected to occur would be left in the channel.

Most of the project reach is in a degradational state, and increasing the channel width should improve the stability of the channel. No sedimentation is expected to occur in most of the project reach, and is confirmed by sediment transport modeling.

For the stable section upstream of Piedmont Creek, there is a chance that the project will induce aggradation. The invert in the stable section identified in Figure 9 between STA 115+00 and STA 145+00 will be dropped in the new design, with the width in section from STA 115+00 to STA 125+00 will be increased (Figure 8B). The project will preserve the same channel slope throughout this reach, which should keep the stream power within the STA 125+00 to STA 145+00 the same (Figure 8C). For the wider section, there is a possibility of decreased stream power and possible aggradation. However, the sediment transport analyses by the District and Tetra Tech do not show aggradation.

Therefore, the District's conclusion is that minimal sediment removal maintenance would need to be performed on the proposed project. Possible locations where maintenance would be between STA 115+00 to 125+00, and localized maintenance around bridges and culverts. However, there the evidence is not conclusive for these locations that aggradation would occur.



TECHNICAL MEMORANDUM *EXHIBIT 2*

PROJECT: Upper Berryessa Flood Protection Project **DATE:** September 12th, 2016
SUBJECT: Responses to RWQCB Memo for Project Team
PREPARED: Jack Xu, PE, CFM

PURPOSE

The Upper Berryessa project team has asked the Hydraulics Unit to review the Regional Water Quality Control Board (RWQCB) document¹ and to provide input and responses on the RWQCB's reasoning and conclusion. This document will attempt to address the comments raised by the RWQCB one at a time.

COMMENT RESPONSES

1. *THE USACE EIS INCORRECTLY ADDRESSES HOW THE PROJECT WILL HANDLE THE SEDIMENT INPUT*

The original design by the US Army Corps (USACE) included an upstream improvement including addition of bypass from Greenbelt Area, which is no longer part of current design. The District retained Tetra Tech to perform a sediment transport analysis² with the current proposed project geometry, excluding any upstream improvements. The results of the study found that the channel had localized areas of both erosion and deposition, as expected, during storm events. However, it did not show overall aggradation over the project reach. It also indicated that thalweg was relatively insensitive to changes in incoming sediment load, selected transport function, and flow. In other words, an area that experienced erosion would experience relatively the same amount of erosion with or without the upstream improvement.

2. *THE SEDIMENT MODELING DOES NOT MODEL BANK EROSION AND THE ASSUMPTION THAT SEDIMENT LOAD WILL BE REDUCED BY STABILIZING STREAM BANKS IS NOT DEFENSIBLE*

The District Hydraulics Unit agrees that the model does not account for channel bank erosion and that the model cannot provide details on channel bank erosion supply. Recent

¹ Riley, A.L., Frucht, Setenay Bozkurt. San Francisco Bay Regional Water Quality Control Board. Geomorphic Indications for Long-Term Depositional Environment on Berryessa Creek in the Upper Berryessa Creek Flood Risk Management Project. April 12th, 2016.

² Tetra Tech. Draft Sediment Transport Technical Memo including Sensitivity Analysis. May 12th, 2015.

field observations show that the channel banks do provide a source of sediment into the system from gully erosion, but the quantity is difficult to ascertain. Upstream of the project reach, Jordan³ performed a geomorphic analysis and concluded that localized channel instability within the valley readily supplies sediment to the downstream reaches (which includes the project reach). It is quoted below:

“On Berryessa Creek, the bedload supply coefficient decreases 58% and the suspended-load supply coefficient only decreases 3% from the upstream gaging station to the downstream gaging station. This occurs in spite of the presence of a sedimentation basin between the two locations. The sediment basin traps mainly bedload, possibly explaining the larger decrease of this coefficient in comparison to the suspended-load coefficient. The lack of a decrease in the supply coefficient indicates that localized channel instability within the valley readily supplies sediment to the downstream reaches, particularly in the finer grained suspended-load fraction. This supply likely comes from failing stream banks because overland sources are minimal within the urbanized valley portion of the stream” (pg 107-108).

Further in depth analysis of local sediment input for the existing condition was not performed because the District sees the current channel condition to be degradational. The proposed project will stabilize the banks and the addition of the local bank sediment will not be an issue. It is the District Hydraulic Unit’s position that current observations seem to suggest that stabilizing the banks should reduce the sediment input load to some degree.

3. IN THE ABSENCE OF AN O&M MANUAL, USACE HAS NOT FULLY ADDRESSED SEDIMENT MAINTENANCE NEEDS IN THE PROJECT DESIGN

USACE utilized the District’s sediment transport modeling results to refine the final project design to reduce future sediment removal requirements during operation. In conformance, with the USACE project implementation process, USACE will prepare an O&M manual prior to handover of the project to the District.

4. UPPER BERRYESSA CREEK EXHIBITS DEPOSITIONAL FEATURES AND IS AGGRADATIONAL IN NATURE

From field observations, the current project reach is degradational and incising. Field visits documented in a District tech memo⁴ highlight concrete evidence for incision. For example, historically constructed storm sewer outfalls have bank protection that is higher than the channel invert, with some of the protection falling into the creek. Other examples, at bridges and concrete transitions, show man-made structures that are higher than the current creek level. Los Coches street is the most extreme example.

³ Jordan, B.A., et al. Colorado State University. An Urban Geomorphic Assessment of the Berryessa and Upper Penitencia Creek Watersheds in San Jose, California. April 30th, 2009.

^{4,5} Xu, Jack. SCVWD. Upper Berryessa Project – Channel Stability Tech Memo. July 20th, 2016.

5. COMPARISON OF UPPER BERRYESSA CREEK 1973 AS-BUILT SURVEYS SHOW THAT THE CREEK WILL BE DEPOSITIONAL IN THE FUTURE

The 1973 dataset provided to the RWQCB were not as-built surveys, but proposed design plans that were never built. Analysis of data from the 1950's, 1970's, and current surveys are documented in the tech memo⁵; that analysis shows a degradational trend, with the channel incising over time. This is backed up by field observations, where a 'bench' in the channel that corresponds well to the old channel bottom.

6. HISTORICAL SEDIMENT REMOVAL BY THE DISTRICT SHOW THAT THE CREEK IS DEPOSITIONAL

The 20,000 cubic yards of sediment removal that was performed since the early 1980's is believed to be a result of local deposition and bank failures, mentioned in the previous response, rather than attributed to channel aggradation, due to the overwhelming evidence of channel incision referenced in the other responses.

7. WIDENING THE CHANNEL REDUCES SHEAR STRESSES AND INDUCES DEPOSITION

The District agrees with this statement. However, since we see the current conditions to be degradational with an incising channel, a reduced shear stress is favorable. The sediment transport modeling performed by Tetra Tech for the District show a relatively stable profile with no deposition for the proposed project geometry, which gives the District confidence that the completed project will not be depositional in nature.

The District understands that it is possible that the bottom width of the design may be wider than the current bankfull channel. This does not imply aggradation in the channel invert, which is not expected to occur from the sediment modeling results, but merely deposits forming geomorphic features such as point bars. When comparing current bankfull cross sections near and in the project reach, there is evidence that small benches might deposit in the proposed design cross section. This phenomenon has been observed in previous District channel improvement projects where the cross section was widened. The District modeled⁶ the impacts of these small benches on flood conveyance and determined the effects to be minor. Therefore, if bankfull benches formed inside the proposed channel, the District would perform very limited to no sediment removal according to the current analysis.

⁵ Xu, Jack. SCVWD. Upper Berryessa Project – Channel Stability Tech Memo. July 20th, 2016.

