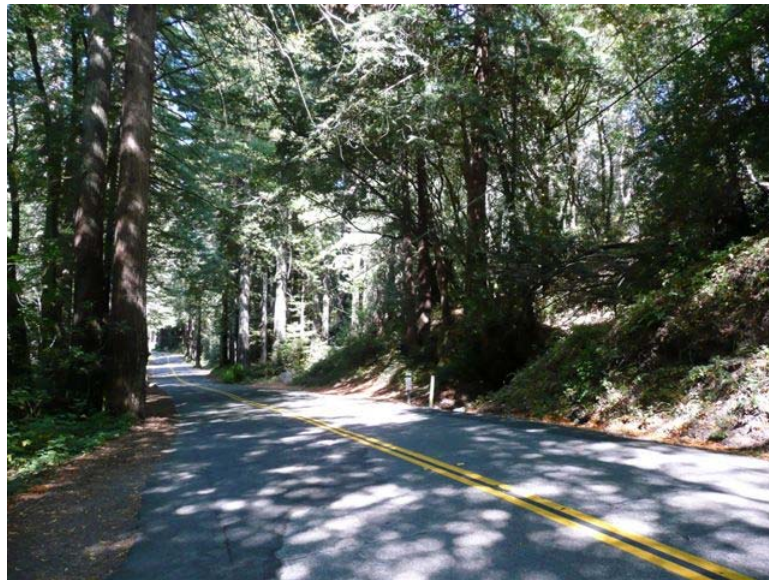


**SIR FRANCIS DRAKE BOULEVARD
REHABILITATION PROJECT
FINAL ENVIRONMENTAL IMPACT REPORT**



STATE CLEARING HOUSE NUMBER
2008112004

LSA

January 2011

**SIR FRANCIS DRAKE BOULEVARD
REHABILITATION PROJECT
FINAL ENVIRONMENTAL IMPACT REPORT
SCH # 2008112004**

Submitted to:

Marin County Department of Public Works
3501 Civic Center Drive
San Rafael, California 94903
Contact: Mr. Dave Bernardi
(415) 499-6530

Prepared by:

LSA Associates, Inc.
157 Park Place
Point Richmond, California 94801
(510) 236-6810

LSA Project No. BKF0902

LSA

January 2011

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I. RESPONSE TO COMMENTS

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RESPONSE TO COMMENTS

**SIR FRANCIS DRAKE BOULEVARD
REHABILITATION PROJECT
ENVIRONMENTAL IMPACT REPORT**



STATE CLEARINGHOUSE #2008112004

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CHAPTER 1.0 INTRODUCTION

1.1 PURPOSE OF THE RESPONSE TO COMMENTS DOCUMENT

This report has been prepared to respond to comments submitted on the May 2010 Draft Environmental Impact Report (Draft EIR) for the proposed *Sir Francis Drake Boulevard Rehabilitation Project* (proposed project). The Draft EIR identifies the likely environmental consequences associated with construction and operation of the proposed roadway improvements. The evaluation in the Draft EIR of each topical issue found that there are no significant environmental impacts that cannot be mitigated to a less-than-significant level.

This document responds to comments on the Draft EIR and makes revisions, as necessary, in response to these comments or to clarify any previous errors, omissions, or misinterpretations of material in the Draft EIR. This revised Draft EIR or Final EIR is provided in electronic format (pdf) on the disk at the back of this document.

1.2 FINAL EIR

This document, together with the revised Draft EIR, will constitute the Final EIR if Marin County (County) certifies the Final EIR as complete and adequate under the California Environmental Quality Act (CEQA).

1.3 ENVIRONMENTAL REVIEW PROCESS

According to CEQA, lead agencies are required to consult with public agencies having jurisdiction over a proposed project, and to provide the general public with an opportunity to comment on the Draft EIR.

The Draft EIR was made available for public review in hard copy form on May 7, 2010 and distributed to local and State responsible and trustee agencies. The Notice of Completion (NOC) of the Draft EIR was provided in compliance with State Law and the County's procedures. The Draft EIR was also posted on the project's website at <http://co.marin.us/eir> beginning May 7, 2010. CEQA mandates a minimum 45-day public comment period on the Draft EIR, which ended on June 25, 2010.

Copies of all written and oral comments received on the Draft EIR during the comment period are contained in this report.

The Response to Comments document, together with the Draft EIR, will constitute the Final EIR. Notice of the availability of the Final EIR will be provided in compliance with the Marin County Environmental Review Guidelines. The County's guidelines provide a period of 14 days for written comments to be submitted on the Final EIR. After the close of the 14-day comment period, a meeting will be scheduled before the Board of Supervisors to consider certification of the Final EIR. Notice of the public meeting to consider certification of the Final EIR will be provided in compliance with State law and the County's procedures.

1.4 DOCUMENT ORGANIZATION

This Response to Comments document consists of the following chapters:

- *Chapter 1.0: Introduction.* This chapter discusses the purpose and organization of this document.
- *Chapter 2.0: List of Commenting Agencies, Organizations, and Persons.* This chapter contains a list of agencies, organizations, and persons who submitted written comments or offered oral comments on the Draft EIR.
- *Chapter 3.0: Master Responses.* This chapter contains a series of Master Responses that address common concerns that were repeated in a number of the comment letters. These Master Response are referred to in the responses to the individual comment letters included in Chapter 4.0.
- *Chapter 4.0: Comments and Responses.* This chapter contains reproductions of all comment letters received on the Draft EIR, as well as oral comments received on the Draft EIR. A written response for each CEQA-related comment received during the review period is provided. Each response is keyed to its respective comment.
- *Chapter 5.0: Draft EIR Text Revisions.* Corrections to the Draft EIR necessary in light of comments received and responses provided, or necessary to clarify any minor errors, omissions or misinterpretations, are contained in this chapter.
- *Chapter 6.0: Report Preparation.* A summary of those involved in report preparation is contained in this chapter.

CHAPTER 2.0

LIST OF COMMENTING AGENCIES, ORGANIZATIONS AND PERSONS

Comments on the Draft EIR were submitted to the Marin County Department of Public Works during the public review period by those agencies, organizations, and individuals listed below. The comments are grouped by the affiliation of the commenting entity as follows: federal, State, regional, and local agencies (A), organizations (B), individuals (C), and public hearing participants (D).

2.1 FEDERAL, STATE, REGIONAL AND LOCAL AGENCIES

- A1. State of California, Department of Fish and Game; Charles Armor, Regional Manager, Bay Delta Region (June 16, 2010)
- A2. State of California, Department of Parks and Recreation; Danita Rodriguez, District Superintendent, Marin District (June 24, 2010)
- A3. State of California, Native American Heritage Commission; Katy Sanchez, Program Analyst (May 18, 2010)
- A4. United States Department of the Interior, National Park Service; Cicely A. Muldoon, Superintendent, Point Reyes National Seashore (June 24, 2010)
- A5. State of California, Regional Water Quality Control Board; Bruce H. Wolfe, Executive Office, San Francisco Bay Region (June 24, 2010)
- A6. State of California, Governor's Office of Planning and Research, State Clearinghouse; Scott Morgan, Acting Director (June 28, 2010)

2.2 ORGANIZATIONS

- B1. California Native Plant Society; Eva Buxton, Conservation Chair (June 25, 2010)
- B2. Environmental Action Committee; Frederick Smith, Executive Director (June 24, 2010)
- B3. Federated Indians of Graton Rancheria; Nick Tipon, Chairman: Sacred Sites Protection Committee (June 1, 2010)

- B4. Marin Audubon Society; Barbara Salzman and Phil Peterson, Co-Chairs: Conservation Committee (June 24, 2010)
- B5. Marin Conservation League; Nona Dennis, President (June 25, 2010)
- B6. Marin County Bicycle Coalition; Andy Peri, Advocacy and Outreach Coordinator (June 18, 2010)
- B7. Marin Horse Council; Connie Berto, Director (June 24, 2010)
- B8. San Geronimo Planning Group; Jean Berensmeier, Chairperson (June 25, 2010)
- B9. Salmon Protection and Watershed Network; Todd Steiner, SPAWN Executive Director (June 22, 2010)
- B10. Sierra Club; Gordon Bennett, Marin Group Watershed Chair (June 14, 2010)

2.3 INDIVIDUALS

- C1. Sandy Greenblat, local resident (May 19, 2010)
- C2. Cela O'Connor, local resident (June 25, 2010)
- C3. Stephen Simac, local resident (June 23, 2010)
- C4. Neal Toft, City of Larkspur (May 24, 2010)

2.4 PUBLIC HEARING

- PH. Andy Peri, Marin County Bicycle Coalition (June 15, 2010)
- PH. Roger Roberts, Marin Conservation League (June 15, 2010)
- PH. Steven Simac, Local Resident (June 15, 2010)
- PH. Leslie Ferguson, Regional Water Quality Control Board (June 15, 2010)
- PH. Jean Berensmeier, San Geronimo Planning Group (June 15, 2010)
- PH. Frank Egger, North Coast Rivers Alliance (June 15, 2010)
- PH. Paola Bouley, Salmon Protection and Watershed Network (June 15, 2010)
- PH. Susan Adams, Marin County Board of Supervisors (June 15, 2010)

CHAPTER 3.0 MASTER RESPONSES

A number of comments and letters received on the Draft EIR addressed the same topic. The most common topic for which comments were received was tree removal, including impacts associated with shading, temperature, and bank stabilization. Other recurrent concerns included impacts to special status species, especially salmonids, tree removal under Option A, the use of Rubberized Asphalt Concrete, and potential impacts to water quality. These recurrent themes are addressed in a series of Master Responses. In Chapter 4.0, individual comments that are addressed by these Master Responses are referred back to the appropriate master response (i.e., “Please see Master Response 4”).

3.1 LIST OF MASTER RESPONSES

The following Master Responses are discussed in Section 3.2:

Master Response 1 – Merits/Opinion-Based Comments

Master Response 2 – Use of Rubberized Asphalt Concrete

Master Response 3 – Culvert Replacement

Master Response 4 – Proximity to Creek

Master Response 5 – Construction Schedule

Master Response 6 – Tree Removal/Creek Impacts

Master Response 7 – Tree Roots

Master Response 8 – Cumulative Impacts of Tree Removal

Master Response 9 – Salmonids

Master Response 10 – Wetland Mitigation

Master Response 11 – Water Quality

Master Response 12 – Alternatives Analysis/Resurface Roadway Alternative

3.2 MASTER RESPONSES

3.2.1 Master Response 1 – Merits/Opinion-Based Comments

A number of comments received during the public comment period express an opinion for or against the project, a component of the project (i.e., Option A), or a project alternative, but do not pertain to

the adequacy of the Draft EIR. These comments relate to the merits of the proposed project and not to the environmental impacts and mitigation measures identified in the Draft EIR. Therefore, no response to these comments is required, per *CEQA Guidelines* Section 15132, which states that a Final EIR shall include “the responses of the Lead Agency to significant environmental points raised in the review and consultation process.”

Section 15204(a) of the CEQA Guidelines provides further guidance for reviewing environmental documents:

In reviewing draft EIRs, persons and public agencies should focus on the sufficiency of the document in identifying and analyzing the possible impacts on the environment and ways in which the significant effects of the project might be avoided or mitigated....When responding to comments, lead agencies need only respond to significant environmental issues and do not need to provide all information requested by reviewers, as long as a good faith effort at full disclosure is made in the EIR.

In accordance with Section 15024(a), the County is not required to respond to comments that express an opinion about the project, but do not relate to the environmental analyses provided in the Draft EIR. The merits of the project are topics that will be considered by the Board of Supervisors in the decision of what action to take on the proposed project. If this Final EIR is certified as adequate, the County will consider the recommendations in these comment letters as well as information presented in the EIR, when it makes its decision regarding whether to approve the project as proposed, adopt one of the project alternatives described in the Draft EIR, or agree to some combination thereof. These comments are included in the EIR to be available for consideration by the decision-makers at the merits stage of the project.

3.2.2 Master Response 2 – Use of Rubberized Asphalt Concrete

Several comments express confusion over the use of Rubberized Asphalt Concrete (RAC) and a perceived discrepancy between the proposed project and the project description outlined in the Draft EIR. Comments made at the Public Hearing indicating that RAC would not be used as part of the project were made in error. As stated in Section 3.4.1 of the Draft EIR (pg. 72), pavement rehabilitation would be achieved by creating a stable base course over which two layers of asphalt would be applied. The first (lower) of these two layers would consist of RAC; the uppermost layer would consist of a permeable friction course. No change to the project description has been made since the Draft EIR was published for public review and no changes to the Draft EIR are required because of these comments.

Several comments raise concerns regarding the use of RAC in proximity to Lagunitas Creek due to the potential for contaminants to leach into surface water and degrade water quality. As described in Section 4.6.4 in the Draft EIR, several studies have been conducted to assess the toxicity of crumb rubber (used to manufacture RAC). A study conducted by the New York State Department of Environmental Conservation showed that no organic compounds were detected in stormwater runoff

and all detected metals concentrations were below surface water quality standards.¹ Further, a study conducted by the National Cooperative Highway Research Program showed that the toxicity of asphalt rubber leachate to aquatic organisms is significantly reduced after “raw” asphalt rubber is assimilated into pavement and is completely eliminated by soil sorption. Further, the Draft EIR provides mitigation measures, including Best Management Practices (BMPs), to reduce construction- and operation-period impacts to water quality to a less than significant level. The authors of the EIR and the County believe the impact analyses included in the Draft EIR appropriately identify the level of impacts to water quality associated with the use of RAC as part of the proposed project and provide mitigation measures consistent with the intent of CEQA.

A particular concern was the potential for copper to affect salmonids and other fish species. Information on the impact of copper was provided in the comment and the argument was made that levels of copper below the Federal standard would have a significant impact on fish species. The Draft EIR assessed the potential water quality and biological impacts of the proposed project according to the *CEQA Guidelines* and the significance criteria on pages 179 and 259 of the Draft EIR. These thresholds rely on adopted standards to determine the significance of an environmental effect. There are only three (3) wet weather data points for copper concentrations in Lagunitas Creek; these data were collected by the Regional Water Quality Control Board (RWQCB) at three locations outside of the project area in 2002. The RWQCB report is referenced on page 253 of the Draft EIR. As described above, studies have shown that detectable levels of copper associated with crumb rubber fall below surface water quality standards. Therefore, water quality impacts associated with the use of RAC are considered less than significant with implementation of Mitigation Measures HYD-1a and HYD-1b. No change to the level of impact described in the Draft EIR is warranted.

3.2.3 Master Response 3 – Culvert Replacement

Several comments raised issues related to the culvert replacement proposed as part of the project. Comments ranged from questioning the need for culvert replacement to requesting that additional culverts be replaced. As described in Section 3.3.6 (page 66) of the Draft EIR, storm water currently collects on the roadway and inundates a portion of the travel lane during significant storm events. In addition, many of the existing metal culverts have corroded and need to be replaced. As part of the project, the County would remove and replace culverts in the same alignment and grade as the existing culvert structures. Culverts would be sized to accommodate a 100-year storm event in an effort to prevent water from pooling in the travel lanes during such events. To avoid additional vegetation and/or tree removal required for culvert replacement, only the section of the culvert within the project disturbance area would be replaced. The disturbance area refers to the section of roadway that will receive new asphalt pavement. While the limit of project disturbance varies throughout the alignment, the project disturbance area is located within the County’s right-of-way. Sections of culvert that extend into the surrounding forest would remain in place.

Culvert Replacement Outside the Right-of-Way. According to the Marin County Department of Public Works, the right-of-way along Sir Francis Drake Boulevard is 60 feet wide generally centered

¹ Although the water quality standards evaluated in this study are from New York, not California, Baseline Environmental Consulting, Inc. compared the New York standards to California standards to prepare the Draft EIR and all detected metals concentrations in runoff were found to be below the freshwater chronic objectives in the San Francisco Bay Plan.

along the existing roadway's alignment. As all culvert replacement would be completed within 30 feet on either side of the roadway centerline, all work would be conducted within the County's right-of-way. The County is proposing to replace culverts that are located beneath the rehabilitated roadway surface and those that exhibit deterioration. As most of the culverts are short, work does not need to extend outside of the roadway right-of-way. Culverts that extend beyond the roadway's surface and outside of the right-of-way are not proposed to be repaired, as no problems with these culverts have been reported. If necessary, these culverts could be repaired at a later date without damaging the rehabilitated roadway.

Gravel Transport. Some comments suggested that culverts be sized and/or re-designed (i.e., sloped differently) to allow for better transport of gravel/cobbles. As described above, the purpose of the proposed culvert replacement is to replace failing culverts in an effort to prevent water from pooling in the travel lanes during storm events. If gravel and cobbles were not being transported, large quantities of material would be expected at the upstream opening of the culvert. No evidence suggests that the culverts are not capable of transporting gravel. However, in locations where the culverts discharge at an elevation above the existing ground, the slope of the pipe could be increased to raise flow velocity assisting transport. Raising the flow velocity could create erosion at the outlet, which would require mitigation such as fabric and/or vegetation. This issue relates primarily to the merits of the proposed project because gravel transport is not an impact of the project, and therefore does not require mitigation under the nexus provision of CEQA.

3.2.4 Master Response 4 – Proximity to the Creek

Several comments stated that the proposed project would bring the roadway closer to Lagunitas Creek, contributing to bank instability. In response, the range of road setbacks under pre- and post-project conditions has been summarized below. The edge of existing roadway is currently within 6 inches of the top of bank in certain locations. The rehabilitated roadway would: (1) match the existing condition, (2) expand toward the creek, or (3) increase the setback from the creek. In locations where the roadway would be expanded toward the creek, the edge of pavement would never be closer than 3 feet from the top of the creek bank.

Percent of Rehabilitated Roadway

Same setback distance as current roadway:	42%
Less than 2-feet closer:	28 %
2 feet to <3 feet closer:	14%
3 feet to <4 feet closer:	7%
4 feet to <5 feet closer:	2%
5 feet to 6 feet closer:	7%

Although the edge of the rehabilitated road would be closer to the top of creek bank than the current roadway in some locations, the differences would be less than 4 feet for 91 percent of the entire rehabilitated roadway. In those locations where the setback differences would be greater than 4 feet, the existing creek bank is stable. Furthermore, in areas where the roadway would be 4 feet or closer to the creek, the distance from the creek's flow line to the edge of pavement is more than 40 feet.

Some comments also suggested that a reduction in the distance from edge of pavement to top of stream bank could increase the risk that the County would need to armor creek banks at some unknown time in the future if the stream were to meander toward or cut the stream bank thereby bringing the stream closer to the road. This comment is speculative as it requires the acceptance of the following two premises: (1) that the stream would meander closer to the road in those locations where the rehabilitated roadway would have the minimum setback of 3 feet, and (2) that the County PWD would desire to armor the stream banks in these locations, despite the minimum setback to top of bank of 3 feet. The project, as proposed, includes measures to stabilize the stream bank, where necessary, to reduce the risk of stream bank failure in the future. These measures include modifying culvert outlets to reduce existing stream bank erosion, planting new vegetation to reduce bank erosion, and repairing and stabilizing an existing stream bank that is close to failure and is undercutting the existing roadway. Given the remediation measures included in the roadway design, the County believes the risk of stream bank failure will be reduced compared to the current condition. Furthermore, CEQA Guidelines Sections 15144 and 15144 do not allow EIRs to speculate on some future, hypothetical, forecast condition. The EIR must be based in fact and factual conclusions that can be drawn from the environmental analysis.

3.2.5 Master Response 5 – Construction Schedule

Several comments raised concerns regarding the construction schedule (e.g., construction activities during the rainy season). As stated in Section 3.4.2 of the Draft EIR, construction of the proposed project is anticipated to take approximately nine months. Construction activities requiring earthwork would be completed during the dry season from May to October. The final lift of asphalt pavement and striping would be applied after October provided there is no rain and the temperature is appropriate. This timeframe has been selected to avoid construction during the rainy season and to allow for project completion before temperatures get too cold. Per the mitigation measures outlined in the Draft EIR, the construction schedule is also affected by the need to conduct appropriately timed, pre-construction surveys for various special-status plant and animal species. These include springtime special status plant surveys, pre-construction nesting surveys for special status bird species, and pre-construction surveys for special status amphibian and mammal species. In addition, appropriate protection measures (e.g., exclusion fencing for special status species) must be in place prior to the start of construction.

3.2.6 Master Response 6 – Tree Removal/Creek Impacts

Many comments relate to the impacts of tree removal associated with the project (eight trees for slope repair and nine trees under Option A). Comments stated that tree removal constitutes a significant, unavoidable impact; that the removal of individual trees would have significant creek impacts; and that compensatory mitigation included in the Draft EIR is insufficient to reduce tree removal impacts to a less-than-significant level. This response discusses these three key issues raised in the public comments.

Significant, Unavoidable Impact. Some people commented that the impact of tree removal proposed as part of the project, particularly tree removal associated with Option A, should be considered a significant, unavoidable impact that requires a Statement of Overriding Considerations under CEQA.

The County respectfully disagrees that tree removal would result in a significant and unavoidable impact. Under CEQA, the decision as to whether an environmental effect should be considered significant is reserved to the discretion of the lead agency based on substantial evidence in the record as a whole. The analysis of this EIR is based on scientific and factual data, which has been reviewed by the lead agency and reflects its independent judgment and conclusions. CEQA permits disagreements of opinion with respect to environmental issues addressed in the EIR.

The authors of the EIR and the County believe the impact analyses included in the Draft EIR appropriately identify the level of impact associated with the proposed project. The Draft EIR provides analysis of potential impacts associated with the project and proposes mitigation measures to avoid potentially significant impacts to the environment, consistent with the intent of CEQA. As stated in Section 4.3.4, *Biological Resources*, of the Draft EIR, the loss of 17 trees associated with the project (eight trees for slope repair and nine trees under Option A) would not likely result in biologically significant impacts on a watershed basis due to the large number of trees occurring along the SFDB corridor, the linear distance between the large redwood trees that would be removed, and the vastly greater number of trees occurring in the adjacent woodland and forest communities on either side of SFDB. The Draft EIR acknowledges that tree removal impacts could be locally significant and requires compensatory mitigation (Mitigation Measures BIO-5d, BIO-9a and BIO-9b). In the absence of data or evidence that the project may result in a significant, unavoidable impact related to tree removal, further response is not necessary. See Master Response 8 for a discussion regarding the cumulative impacts of tree removal.

Many comments expressed the opinion that tree removal associated with the project would be a significant, unavoidable impact and that the project should be redesigned to avoid such impacts. These comments relate to the merits of the proposed project. Please see Master Response 1.

Creek Impacts. Several comments state that the Draft EIR inadequately assesses the potential indirect impacts associated with the tree removal. These impacts include: erosion, loss of stream shade/increase in water temperature, and loss of large woody debris. The authors of the EIR and the County believe that each of these potential indirect impacts have, in fact, been adequately addressed in the EIR, as discussed in the following paragraphs:

Erosion from tree removal. As discussed in the EIR Section 3.4.1, Impact BIO-5, the tree removal work at Station #270+25 is required in order to stabilize an actively eroding bank by constructing a bank stabilizing retaining wall. Therefore, the tree removal work in this location would result in improved bank stability and a reduction in erosion. In the case of tree removal work under Option A, all the trees that would be removed are located along the roadside rather than below the top of bank. Although the affected trees are all large enough that their root systems likely extend well below the tops of banks, the removal work is not expected to generate new sources of erosion and sedimentation for three reasons. First, the remnant root systems below the tops of bank would remain in-place and should continue to serve in a bank holding capacity. Second, all but one of the trees to be removed under Option A are redwood trees. Redwoods are known to have root systems that are very resistant to decay, capable of providing continued bank stabilization support long after tree removal. Third, redwoods readily re-sprout from the cut stump and the root crown, allowing new redwood saplings to grow on the bankward sides of the cut stumps, resulting in new bank stabilizing root growth. Therefore, tree removal work under Option A is not expected to result in increased bank erosion.

Loss of stream shade/increase in water temperature. This potential impact is analyzed under Impacts BIO-5 and BIO-9 of the EIR, which states the following: Four of the trees to be removed at Station 270+25 (Trees 1, 2, 7 and 8 in Table A of the *Biological Assessment* - Appendix E) are canopy-sized trees that provide shading of Lagunitas Creek for at least part of the day. However, based on the orientation of the four trees relative to the creek, appreciable shade effects are likely to be limited to mid-late afternoon periods. Three of the trees that would be removed under Option A (Trees 7, 8 and 9 in Table B of the *Biological Assessment* - Appendix E) are canopy-sized trees that may provide shading of Lagunitas Creek for at least part of the day. However, their possible canopy shade affects on the stream are probably limited to the early-mid morning. The extent to which the loss of this limited amount of shade would affect stream temperatures is likely to be further mitigated by the presence of other extensive shade-providing tree canopy in the immediate vicinity of the 7 affected trees. Therefore, the EIR concludes that, given the limited amount of shade effects of these trees and the proximity of other large canopy trees in these locations, the shading impacts are unlikely to be significant.

Loss of large woody debris. Impact BIO-5 of the EIR states that the majority of the trees that would be removed under the proposed project and under Option A are large enough that they could occasionally be a source for the recruitment of large woody debris (LWD) into Lagunitas Creek. The EIR further states that LWD is a limiting factor for over-winter rearing of juvenile salmonids in Lagunitas Creek, and therefore recognizes the potential loss of a source of LWD from the affected trees to be a significant adverse impact to salmonids, requiring mitigation under Mitigation Measure BIO-5d.

Insufficient Mitigation. Several comments assert that the mitigation measures provided in the Draft EIR (Mitigation Measure BIO-9a and BIO-9b) are insufficient and would not reduce impacts associated with tree removal to a less than significant level. The authors of the EIR and the County believe that these mitigation measures adequately address the potential impacts from the loss of up to 17 trees under the proposed project and would reduce the impacts to a less than significant level. The mitigation measures have three components. First, between 24 and 51 native riparian trees (depending on whether Option A is implemented) would be planted and maintained at another location within the Lagunitas Creek watershed (the Peter Dam plunge pool is identified as a suitable site) to provide direct compensation for the trees to be removed, in compliance with the Marin County Tree Preservation Ordinance. Second, the project would provide financial support to MMWD *Mount Tamalpais Watershed Gateway Project*, allowing for additional riparian habitat enhancement work to occur within the watershed. Third, the project would provide tree cuttings for use as LWD and in bio-engineered structures along Lagunitas Creek as recommended under the *Memorandum of Understanding for Woody Debris Management in Riparian Areas of the Lagunitas Creek Watershed*. Together these three mitigation components would result in the establishment of new woody riparian habitat, and the enhancement of existing riparian and in-stream habitat at a level consistent with the level of potential impacts.

3.2.7 Master Response 7 – Tree Roots

Several people commented on the potential for construction activities, particularly soil compaction resulting from the proposed project, to adversely impact tree roots. Section 4.3.4 of the Draft EIR (pp.

207-210) describes the potential indirect impacts to native trees that could occur as a result of project construction, including soil compaction, soil excavation and pruning, concrete and fill placement atop root zones, and alteration of drainage patterns. As was explained in the Draft EIR, this impact is fully mitigated by Mitigation Measures BIO-10a through BIO-10i, which ensures that impacts to native tree roots would be minimized through a series of mitigation measures that are specifically designed to address the root systems of redwoods and other native trees. The authors of the EIR and the County believe implementation of this mitigation would reduce impacts to tree roots to a less-than-significant level. No alternative mitigation or additional mitigation is required. In the absence of data or evidence that the proposed mitigation is insufficient to reduce the impacts to tree roots, further response is not necessary.

3.2.8 Master Response 8 – Cumulative Impacts of Tree Removal

Citing the tree inventory provided in Appendix F of the Draft EIR, several comments state that the cumulative impact analysis presented in the Draft EIR fails to account for the removal of up to 90 additional trees that were identified as either structurally unstable or affected by Sudden Oak Death (SOD) and recommended for removal. As outlined in the Draft EIR, the project would result in the removal of up to 17 trees (eight trees for slope repair and nine trees under Option A). No other trees would be removed as part of the proposed project. Compensatory mitigation, outlined in the Draft EIR, would require replacement trees be planted at a 3:1 ratio or funds contributed to the Marin County Tree Preservation Fund, in compliance with the County tree protection ordinance. Based on the beneficial effects of the drainage improvements proposed as part of the project and the implementation of measures that fully mitigate impacts to biological resources, the Draft EIR found that the project's incremental contribution to impacts on biological resources would not be cumulatively considerable and the cumulative impact would be less than significant.

As described in Section 6.4, *Cumulative Impacts*, of the Draft EIR, Section 15130 of the *CEQA Guidelines* defines cumulative impacts as “the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects.” The Marin County Department of Public Works does not currently have a targeted program to remove trees affected with SOD or other diseases. Trees would only be removed if the tree would present a hazard or present a safety issue to the roadway. Therefore, there is no way to know when, or if, these trees would be removed. CEQA does not require analysis of the absolute worst-case condition. CEQA requires analysis of typical conditions that can be reasonably foreseen (CEQA Guidelines Sections 15144, 15145). In the absence of a Marin County program to remove diseased trees, the removal of an additional 90 trees in the project vicinity cannot be considered a reasonably foreseeable future project. Therefore, the Draft EIR conclusions regarding potential cumulative effects are appropriate. No changes to the Draft EIR are required.

3.2.9 Master Response 9 – Salmonids

Many comments related to the potential impacts to salmonids in Lagunitas Creek that could result from the proposed project. Comments asserted that post-construction roadway operation impacts on salmonid habitat have not been adequately addressed, including potential localized impacts associated with an increase in the volume of runoff near sensitive areas of the creek and an increase in toxic

runoff entering the creek from the roadway and that Mitigation Measure BIO-9 does not adequately mitigate for the loss of large woody debris that provide beneficial salmonid habitat.

Post-Construction/Roadway Operation Impacts on Salmonids. The authors of the EIR and the County believe that post-construction roadway operation impacts have, in fact, been adequately addressed in the EIR, as discussed in the following paragraphs:

Post-construction Runoff volume. As discussed in Impact BIO-5, increased impervious areas and associated runoff volumes could lead to hydromodification of Lagunitas Creek, potentially causing adverse impacts to salmonid habitat. As analyzed in Section 4.6.4 of the Draft EIR, the increased impervious surface area under post-project conditions would result in an increase in the runoff volume generated from the 2-year, 24-hour storm, from 331,000 cubic feet under the existing condition to 333,500 cubic feet for the project (an increase of 2,500 cubic feet, or 0.75 percent).²

Implementation of Mitigation Measure HYD-1b would reduce the adverse impacts associated with increased impervious area and runoff volumes to a less-than-significant level. The measure requires the installation of water quality treatment best management practices (BMPs) that would reduce the concentration of pollutants from the increased runoff volumes as well as the existing impervious area, which currently receives little or no water quality treatment. BMPs include the use of a permeable friction course over the entire surface, reestablishment of vegetated buffer strips, and installation of swales/sand filters to capture pollutants from roadway runoff. The addition of new BMPs would likely improve overall runoff water quality compared to the existing condition (see discussion below). In addition, in response to comment A5-25, Mitigation Measure HYD-1b has been revised to add a flow duration control performance standard, which would be implemented if required based on analysis conducted during the project design phase. The revision would mitigate changes in the duration of flows from the increased stormwater runoff volume resulting from the project, if needed.

As discussed in Section 4.6.4 of the Draft EIR, increases in runoff peak flow rates at creek outfalls in the project drainage area are not considered significant on a localized basis. Table 4.6.A in the Draft EIR shows that changes in peak flow rates for the 2-year storm event at individual culvert outfalls would range from -0.56 percent (i.e., a reduction in peak flow) to 0.58 percent. The changes for the 10-year storm peak flow rates range from -0.90 percent to 0.93 percent. The changes in peak flow rates are not likely to be hydrologically significant or contribute to channel hydromodification. Moreover, the project would include several design measures to reduce existing erosion problems on a localized basis (at individual culvert outfalls), as follows:

1. "Shot-gun" culverts located within 20 feet of the edge of the roadway would be retrofitted with an elbow fitting to align it with the existing slope.
2. Culverts would be extended to the base of slope where the toe of slope is within 30 feet of the edge of the road.
3. Localized erosional gullies would be backfilled with soil, erosion control fabric would be placed, and erosion control native seed mixes would be applied.

² Runoff volume analysis provided by BKF Engineers, March 2010.

4. Where existing culverts discharge on steep slopes, the use of level spreaders or similar device to limit the concentration of flow would be evaluated in the project design phase. The use of such devices would improve factors causing erosion in the existing condition.

Post-construction toxic impacts. The project would not increase traffic volumes or otherwise change roadway conditions in a manner that could cause degradation in the quality of existing roadway runoff, and is not expected to cause or contribute to in-stream toxicity. Rather, with implementation of Mitigation Measure HYD-1b, the project would likely improve runoff water quality compared to the existing condition. The primary reason for this improvement is that the existing deteriorating roadway was not constructed in accordance with modern standards and has no water quality treatment design features. Under current conditions, runoff containing pollutants typically deposited on road surfaces, such as metals, petroleum hydrocarbons, and polynuclear aromatic hydrocarbons (PAHs), discharges into Lagunitas Creek with little or no prior treatment. In addition, the existing roadbed is crumbling in many locations, which results in the discharge of particulates containing asphaltic compounds such as PAHs into the creek. Under the project, the roadbed would be upgraded to current design standards (which would abate the discharge of asphalt particulates into the creek originating from the roadbed itself), and water quality treatment BMPs including vegetated swales/sand filters, vegetated buffer strips, and a permeable friction course, would be installed to treat runoff from the existing road area, as well as the increased impervious area from paving pullouts and roadway/shoulder widening associated with the project. The primary purpose of the BMPs is to reduce the concentration of pollutants in runoff before the runoff is discharged into Lagunitas Creek.

In the absence of water quality data on existing SFDB roadbed runoff, it is not possible to reliably estimate the extent to which the project's BMPs may improve runoff water quality compared to existing conditions. However, nationwide studies suggest the potential for improvement and show that vegetated buffers and swales can effectively reduce adverse water quality impacts from road runoff to a less-than-significant level. For example, based on data from 185 studies contained in the National Stormwater Quality Database,³ freeway runoff has a median⁴ dissolved copper (a metal potentially toxic to salmonids) concentration of 10.9 micrograms per liter ($\mu\text{g/L}$). (It should be noted that runoff from SFDB would be expected to have a lower concentration because of lower traffic volumes and a narrower roadbed width compared to most freeways). Data from the International BMP Database^{5,6} show that, based on 57 studies on biofilter performance, the expected dissolved copper concentration in the discharge from biofilters is 8.4 $\mu\text{g/L}$ (a 23 percent reduction). This copper concentration is below the RWQCB Basin Plan in-stream acute (1-hour) water quality objective for dissolved copper in Lagunitas Creek (Basin Plan Table 3-4),⁷ which is 13 $\mu\text{g/L}$.

³ The National Stormwater Quality Database is a U.S. EPA-sponsored project that compiled and evaluated runoff discharge quality from different land uses throughout the U.S. using monitoring data collected from 1992-2002 under the National Pollutant Discharge Elimination System (NPDES) municipal stormwater management program requirements.

⁴ 50th percentile concentration.

⁵ The International BMP Database (www.bmpdatabase.org/) is sponsored by the Water Environment Research Foundation, U.S. EPA, the American Society of Civil Engineers, the U.S. Department of Transportation, and various other agencies. The database includes over 300 BMP studies, and is intended to provide a consistent and scientifically defensible set of data on BMP designs and related performance.

⁶ Geosyntec Consultants and Wright Water Engineers, Inc. 2008. Overview of Performance by BMP Category and Common Pollutant Type. International Stormwater Best Management Practices (BMP) Database [1999-2008]. June 2008.

⁷ The freshwater quality objective for dissolved copper is water hardness-dependent. Table 3-4 in the Basin Plan assumes a conservative in-stream hardness concentration of 100 mg/L.

Mitigation Measure BIO-9. The authors of the EIR and the County believe that Mitigation Measure BIO-9 adequately addresses the potential large woody debris impacts from the loss of up to 17 trees under the proposed project and Option A. As discussed under Master Response 6, the project would provide tree cuttings for use as LWD and in bio-engineered structures along Lagunitas Creek as recommended under the *Memorandum of Understanding for Woody Debris Management in Riparian Areas of the Lagunitas Creek Watershed*.

3.2.10 Master Response 10 – Wetland Mitigation

Proposed Mitigation Measure BIO-11b states that Marin DPW shall compensate for the loss of 0.24 acres of roadside swale seasonal wetlands by establishing new seasonal wetlands at a 2:1 on-site replacement ratio within the Lagunitas Creek watershed in the project vicinity. The measure further states that this mitigation requirement could potentially be met through the establishment of 0.48 acres of new floodplain wetland habitat along Lagunitas Creek in association with the MMWD *Lagunitas Creek Salmon Winter Habitat Enhancement Program*. This program seeks to address a possible limiting factor to the survival of juvenile coho salmon - a lack of suitable winter habitat along the creek, by establishing new side channels and backwater wetlands on selected reaches of the floodplain.

Several comments suggested that Mitigation Measure BIO-11b requires greater detail in order to ascertain if the proposed mitigation is adequate and practicable to implement. In response, the authors of the EIR and the County requested further details from the MMWD staff on the *Lagunitas Creek Salmon Winter Habitat Enhancement Program* and specifically the ability of the program to meet the proposed project's mitigation needs. MMWD provided the attached document (Appendix A - *Scope of Work – Backwater Habitat Enhancement for the Benefit of Coho Salmon in Lagunitas Creek*) which conceptually describes the proposed mitigation approach. The following is a brief summary of the proposed mitigation plan:

- **Mitigation Location.** Tocoloma Reach of Lagunitas Creek, just west of Platform Bridge Road, approximately 1,100 feet north of SFDB.
- **Mitigation Site.** An approximately 1.2-acre abandoned floodplain area adjacent to Lagunitas Creek. The site is characterized by disturbed grassland and ruderal (weedy) vegetation formerly used for cattle grazing, and contains abandoned grazing infrastructure (e.g., corrals, feeding troughs) as well as small areas of fill that would need to be removed. The site is generally flat with elevations ranging from approximately 62 – 63 feet NGVD. Soils are mapped as stratified depositions of sand, gravel, cobbles and stones with ephemeral depositions of silt and sandy loam, as is typical of floodplains along the creek ("Fluvents, channelized" under Soil Conservation Service Soil Survey maps).

The proposed mitigation site was selected by MMWD for the following reasons: (1) the site has floodplain topography and substrate conditions suitable for backwater channel creation; (2) the site is currently disturbed and does not support woody riparian habitat or wetlands; and (3) the site is publicly-owned (by the NPS) and is easily accessible to construction equipment due to its proximity to Platform Bridge Road.

- **Mitigation Approach.** The proposed plan is intended to be one element of the overall Winter Habitat Enhancement Program, which would include various winter habitat enhancement efforts along Lagunitas Creek from the Shafter Bridge downstream to Olema Creek. The overall goal of the plan is to establish an approximately 1,200-linear foot, 30-foot wide backwater channel that would establish approximately 0.8 acres of suitable over-wintering habitat for coho salmon juveniles and smolts. The channel would have upstream and downstream connections to Lagunitas Creek and would have a bottom elevation that intercepts baseflows during the winter and early spring based on historical flow records in Lagunitas Creek. Channel cross sections would be modeled after existing backwater channel habitat in Lagunitas Creek and in similar coastal streams elsewhere, and would include gentle sideslopes suitable for the establishment of emergent marsh, seasonal wetland and woody riparian vegetation encompassing at least 0.5 acres. A key design element would be to ensure that salmonids are able to swim into and out of the backwater habitat and not become stranded during lower flows. The backwater habitat enhancement design would also include refuge and cover habitat features for salmonids (e.g., woody debris structures and undercut bank sections).
- **Funding Status.** The project has received funding only for detailed topographic surveys, site assessment work and construction plan preparation. The project does not have funding for regulatory approval, construction or follow-up monitoring and management. As mitigation for the SFDB project, the DPW proposes to provide the required funding and/or in-kind services for regulatory approval, construction and follow-up monitoring and management to allow the project to be implemented.
- **Schedule.** The MMWD would be selecting an engineering contractor to conduct hydrologic modeling analysis and to prepare the construction plans, as well as to conduct the related, site specific topographic survey and site assessments. Construction plans are scheduled to be completed by July 2011. The PWD would prepare and submit the Mitigation and Monitoring Plan in accordance with Corps of Engineers, Regional Water Quality Control Board and California Department of Fish and Game requirements as part of the wetland/streambed alteration permit applications for the SFDB Rehabilitation project. Implementation of the plan would occur prior to or simultaneous with the commencement of construction work for the SFDB Rehabilitation project.

This information will be incorporated into the EIR as part of Mitigation Measure BIO-11b.

3.2.11 Master Response 11 – Water Quality

The County received several comments related to the potential water quality impacts that could result from the proposed project. Comments expressed concern that the Draft EIR does not adequately address water quality; that the mitigation measures included in the Draft EIR are insufficient to mitigate water quality impacts; and that the project description contains insufficient detail regarding the design, adequacy and maintenance of proposed bioswales. The following responds to the three key issues raised in the public comments.

Water Quality Impacts. As described in Section 4.6.4 (pp. 265-269) of the Draft EIR, construction and operation period activities associated with the proposed project could generate stormwater runoff

that could degrade the water quality of Lagunitas Creek. Construction activities could result in the discharge of sediment, metals, asphalt materials, concrete, fuels, oils, paints, solvents and other potential hazardous materials into Lagunitas Creek. In the post-construction phase, increased impervious surface area resulting from the proposed project could increase stormwater runoff volumes and result in an associated increase in roadway pollutants (i.e., sediment, metals, fuels, oil and grease) entering Lagunitas Creek. As was explained in the Draft EIR, this impact is fully mitigated by Mitigation Measures HYD-1a and HYD-1b, which ensure compliance with the Small MS4 Permit and requires additional water quality protection measures be implemented as part of the proposed project (see below). Specifically, in response to the comment herein labeled A5-25, Mitigation Measure HYD-1b has been revised to add a flow duration control performance standard, which would be implemented if required based on analysis conducted during the project design phase, to mitigate changes in the duration of flows resulting from the increased stormwater runoff volume resulting from the project.

Sir Francis Drake is an existing roadway adjacent to Lagunitas Creek. The baseline condition against which the project impacts are assessed consists of the existing roadway, currently degraded with sections of aggregate becoming dislodged and washed into the creek and a large area of slope failure. As described in the Draft EIR, the proposed project includes improvements designed to reduce erosion and siltation, such as slope repair and drainage improvements, and to improve runoff water quality through the installation of a permeable friction course and bioswales, and reestablishment of vegetated buffers, that would provide a beneficial effect on water quality conditions in the project area.

Insufficient Water Quality Mitigation. This response addresses comments about the lack of detailed design for the Best Management Practices (BMPs) that would be required as part of Mitigation Measures HYD-1a and HYD-1b. As a required element of CEQA review, mitigation measures (in this case construction and operation of BMPs) must be identified for significant impacts; these mitigation measures must be feasible and, when implemented, must reduce the potential impacts to a less-than-significant level. For the construction phase, the project must comply with the National Pollutant Discharge Elimination System (NPDES) Construction General Permit, and the site-specific practices to control pollutant discharges would be described in the Storm Water Pollution Prevention Plan, which is submitted with the Notice of Intent to obtain coverage under the permit. The project must also comply with the provisions of the NPDES municipal stormwater permit (Small MS4 Permit – see below) and adhere to the County’s Action Plan 2010. The County also participates in the FishNet 4C Program, and the Department of Public Works would implement water quality BMPs in the FishNet 4C Manual during project construction and ongoing maintenance activities.

Detailed design of BMPs, which nearly always occurs after the certification of an EIR, is not required during the environmental review process. Compliance with the performance standards included in mitigation measures and the existing NPDES regulations ensure that detailed design would reduce potential impacts of projects to water quality to a less-than-significant level. Some of the comments submitted on the Draft EIR suggest that the project would not comply with the provisions of the Small MS4 Permit or that the conditions at the site are so unusual that the project could not successfully implement a successful BMP design. The primary purpose of the County’s stormwater management program and the function of the County’s public works staff are to ensure that the provisions of the Small MS4 Permit are satisfied. Satisfying the conditions of the Small MS4 Permit

is a legal requirement that must be implemented regardless of mitigation measures included in the Draft EIR.

The authors of the EIR and the County believe implementation of Mitigation Measure HYD-1a and HYD-1b would reduce impacts to water quality to a less-than-significant level. No alternative or further mitigation is required. In the absence of data or evidence that the proposed mitigation is insufficient to reduce water quality impacts, further response is not necessary.

Bioswales. As described in Section 3.4.1 (p. 75) of the Draft EIR, in locations where the road slopes toward the hillside, runoff would discharge to vegetated swales that would be designed with underdrains to reduce ponding that currently inundates the road during significant rain events. In addition, Mitigation Measure HYD-1b requires the County to implement water quality improvement measures as part of project implementation, to include establishing vegetated buffer strips where the road slopes toward Lagunitas Creek, and installing vegetated swales in locations where the road slopes away from the creek toward the hillside (avoiding wetland areas). The project, as proposed, including the water quality improvement measures, is intended to have a 30-year design life. As described in the Draft EIR, swales and buffer strips would require periodic maintenance to maintain their long-term function. Maintenance would consist of clearing the swale/buffer strip of any materials that could prevent proper percolation and discharge, as well as intermittent replacement of the pervious material layer. The County would conduct long-term maintenance of swales and buffer strips in accordance with the municipal maintenance performance standards in the Marin County Stormwater Pollution Prevention Program stormwater management plan (Action Plan 2010) and the FishNet 4C Roads Manual. The County believes the swales, buffer strips and other water quality protection measures incorporated as part of the proposed project and included as mitigation measures in the Draft EIR would reduce potential water quality impacts associated with the proposed project to a less than significant level. No further response is necessary.

3.2.12 Master Response 12 – Alternatives Analysis/Resurface Roadway Alternative

Several comments related to the Alternatives Analysis included in the Draft EIR. Comments expressed concern that the Environmentally Superior Alternative was not correctly identified, that the Resurface Roadway Alternative should be modified to include culvert replacement and other drainage improvements, and that other alternatives should be considered. This response discusses the three key issues raised in the public comments.

Environmentally Superior Alternative. This response addresses claims that the Resurface Roadway Alternative should be designated the “environmentally superior” alternative from among the alternatives evaluated in the Draft EIR. The *CEQA Guidelines* require that an EIR “include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed project,” but do not dictate the methodology that lead agencies must use in identifying the environmentally superior alternative. Thus, lead agencies may consider both local and regional environmental impacts and benefits in their consideration of the environmentally superior alternative. The Resurface Roadway Alternative would restore the roadway using the same pavement rehabilitation techniques as the proposed project, but would not include drainage improvements such as culvert replacement and slope repair that would be conducted as part of the proposed project and the Mitigated Roadway Alternative. The Mitigated Roadway Alternative is

identified as the environmentally superior alternative in the Draft EIR for the following reasons: 1) the alternative would avoid the short-term visual impacts associated with proposed retaining walls; 2) the alternative would reduce the number of trees to be removed thereby minimizing tree impacts and reducing the need to replant mitigation trees in the watershed; 3) the alternative would achieve all of the project objectives; and 4) the alternative would retain the beneficial effects associated with culvert replacement and slope repair. The significant difference between the Mitigated Roadway Alternative and the Resurface Roadway Alternative in the context of environmental impacts is that the Mitigated Roadway Alternative would reduce the potential for erosion and siltation by replacing culverts and by repairing the failed slope. All of the alternatives, with the exception of the No Project Alternative, would result in similar impacts associated with construction (e.g., noise, air quality, traffic). Because the Mitigated Roadway Alternative achieves all of the beneficial effects (reduction in erosion and siltation) and reduces the environmental impacts (visual impacts and tree removal) of the proposed project, it was identified as the environmentally superior alternative. The County's identification of the Mitigated Roadway Alternative as the environmentally superior alternative is supported by substantial evidence in the Draft EIR. It is well within the discretion of the County to weigh the benefits versus the impacts in identifying the environmentally superior alternative.

Range of Alternatives. *CEQA Guidelines* Section 15126.6 requires the analysis of "a range of reasonable alternatives to the project, or to the location of the project, which would feasibly obtain most of the basic objectives of the project but would avoid or lessen any of the significant effects of the project." In identifying the alternatives to be analyzed in the Draft EIR, the County developed a range of alternatives that would "foster meaningful public participation and informed decision making," in compliance with CEQA. The County maintains that the alternatives presented in the Draft EIR are sufficiently different from one another so as to provide for meaningful comparison to the proposed project and to one another. As illustrated and analyzed in Chapter 5.0 of the Draft EIR, each of the alternatives presented includes a different combination of the elements included in the proposed project (i.e., roadway resurfacing, drainage improvements, slope repair).

While other alternatives may be possible (e.g., an alternative to designate the roadway as a "safe driving zone"), under CEQA, the purpose of studying project alternatives is to determine whether an alternative exists that would avoid or substantially lessen potentially significant impacts while still obtaining the basic project objectives. In performing the analysis, three factors may be used to eliminate an alternative from detailed consideration: failure to meet most of the basic project objectives, infeasibility, and inability to avoid significant environmental impacts. Pursuant to CEQA, the Draft EIR analyzed three alternatives to the proposed project that would meet most of the project objectives and avoid significant environmental impacts. As described in Section 5.3 of the Draft EIR (pp. 341-342), both the Resurface Roadway Alternative and the Mitigated Roadway Alternative would meet most or all of the project objectives. Although the No Project Alternative would not achieve the project objectives, it is included in the analysis pursuant to Section 15126.6(e) of the *CEQA Guidelines*.

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CHAPTER 4.0 COMMENTS AND RESPONSES

This chapter includes a reproduction of each letter that commented on the Draft EIR, grouped by the affiliation of the commenting entity as follows: Federal, State, regional and local agencies (A), organizations (B), individuals (C), public hearing comments on the Draft EIR (PH), and letters which cited or mentioned the Draft EIR, but which had no comments on the Draft EIR (E). The comments are numbered consecutively following the A, B, C, or PH. The letter number (for example A1, the first agency comment letter) is shown in a box in the upper right-hand corner of each page of the letter. Individual comments within the letters are numbered consecutively and are annotated in the margin of each letter.

When cross-referenced in the text, the comment is referred to as A#-# where the number following the letter refers to the letter number, and the number following the hyphen refers to the comment number within that letter. For example, comment C3-8 refers to the eighth comment within the third letter submitted by an individual.

Written letters received during the public comment period on the Draft EIR are provided in their entirety in the following pages. Oral comments delivered at the public hearing appear in the transcript of the public hearing, which is treated as one comment letter (letter PH). Each letter is immediately followed by responses keyed to the specific comments. All of those who commented on the Draft EIR are listed in Table 4.1.

Table 4.1: List of Commenters

Letter	Commenter	Date	Comment Page	Response Page
A. Federal, State, Regional and Local Agencies				
A1	California Department of Fish and Game	06/16/10	24	29
A2	California Department of Parks and Recreation	06/24/10	34	37
A3	Native American Heritage Commission	05/18/10	40	43
A4	National Park Service	06/24/10	44	48
A5	Regional Water Quality Control Board (RWQCB)	06/24/10	52	59
A6	State Clearinghouse	06/28/10	66	68
B. Organizations				
B1	California Native Plant Society	06/25/10	70	73
B2	Environmental Action Committee	06/24/10	75	78
B3	Federated Indians of Graton Rancheria	06/01/10	80	81
B4	Marin Audubon Society	06/24/10	82	87
B5	Marin Conservation League	06/25/10	94	97
B6	Marin County Bicycle Coalition	06/18/10	99	101
B7	Marin Horse Council	06/24/10	102	104
B8	San Geronimo Planning Group	06/25/10	105	110
B9	Salmon Protection and Watershed Network (SPAWN)	06/22/10	114	130
B10	Sierra Club	06/14/10	133	137
C. Individuals				
C1	Sandy Greenblat	05/19/10	140	144
C2	Cela O'Connor	06/25/10	146	147
C3	Stephen Simac	06/23/10	149	154
C4	Neal Toft	05/24/10	156	158
PH. Public Hearing				
PH	Andy Peri, Marin County Bicycle Coalition	06/15/10	183	202
PH	Roger Roberts, Marin Conservation League	06/15/10	184	202
PH	Stephen Simac	06/15/10	186	202
PH	Leslie Ferguson, RWQCB	06/15/10	188	202
PH	Jean Berensmeir, San Geronimo Planning Group	06/15/10	191	203
PH	Frank Egger, North Coast Rivers Alliance	06/15/10	193	203
PH	Paola Bouley, SPAWN	06/15/10	196	205
PH	Susan Adams, Marin County Board of Supervisors	06/15/10	199	205

4.1 FEDERAL, STATE, REGIONAL AND LOCAL AGENCIES



State of California – The Natural Resources Agency
DEPARTMENT OF FISH AND GAME
Bay Delta Region
7329 Silverado Trail
Napa, CA 94558
(707) 944-5500
www.dfg.ca.gov

ARNOLD SCHWARZENEGGER, Governor
John McCamman, Director



A1

June 16, 2010

JUN 18 2010 PM 1:21 Planning

Mr. David Bernardi, Sr. Civil Engineer
Marin County Community Development Agency
3501 Civic Center Drive, Room 308
San Rafael, CA 94903

Dear Mr. Bernardi:

Subject: Sir Francis Drake Boulevard Rehabilitation, Draft Environmental Impact Report,
SCH #2008112004, Marin County

The Department of Fish and Game (DFG) has reviewed the documents provided for the subject project, and we have the following comments.

Drainage Improvements

The draft Environmental Impact Report (EIR) specifies the replacement of corrugated metal and concrete culvert pipes.

1

Partial culvert replacement. The draft EIR states that for culvert pipes that extend ten or more feet beyond the proposed edge of the pavement, only the section within the project disturbance area would be replaced. It is unclear how this would address the issue of aging or deteriorated facilities or adverse conditions at the inlets and outlets of project culverts. Further, partial replacement of culverts would preclude the effective installation of larger diameter culvert pipes as may be warranted by site conditions.

2

Energy dissipation. Figure 3.4-1 includes a sketch of a proposed new culvert showing erosion control fabric or a rip-rap basin installed below the outlet of the culvert. If significant erosion is present at the outlets of ditch drain culverts, this may indicate that additional ditch drains should be installed to reduce the volume and energy of water from any single outlet.

3

Lake and Streambed Alteration Agreements. It is unclear if the Project includes replacement of facilities that provide drainage for a stream or otherwise involve the modification of the bed, channel, or bank of a stream. However, the draft EIR does briefly describe culvert replacement work in tributaries, bank repair along Lagunitas Creek, and vegetation within stream channels.

For any activity that will divert or obstruct the natural flow, or change the bed, channel, or bank (which may include associated riparian resources) of a river or stream, or use material from a streambed, Notification to DFG for a Lake and Streambed Alteration Agreement (LSAA) is required pursuant to Section 1600 et seq. of the Fish and Game Code. To obtain

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3 con.

information about the LSAA notification process, please access our website at <http://www.dfg.ca.gov/habcon/1600/> or to request a notification package, contact the Lake and Streambed Alteration Program at (707) 944-5520.

4

Issuance of an LSAA is subject to the California Environmental Quality Act (CEQA). As a responsible agency, DFG will consider the draft EIR in responding to an LSAA Notification. The draft EIR should provide a more detailed description of the activities to be conducted within the channel and banks of a stream. These activities, particularly tributary culvert replacements, should be clearly distinguished from those that occur outside of a stream channel and banks and do not affect riparian vegetation. The draft EIR should also describe potential impacts to the stream or riparian resources and provide adequate avoidance, mitigation, monitoring and reporting commitments.

5

Special-status plant species

Mitigation measure BIO-1 states that surveys for special-status plants shall be conducted during the flowering period of special-status plants *to the extent allowed by the construction schedule*. Surveys should be conducted at such times that the potentially occurring rare, threatened, and endangered plant species are both evident and identifiable. If they are not, then the surveys will not provide an adequate basis for determining that impacts to these species are avoided. As the draft EIR identifies two species listed under the California Endangered Species Act (CESA) with potential habitat present within the project area, completion of adequate surveys is critical for the project to demonstrate that it will not result in taking of listed species. The italicized clause above should be deleted from BIO-1.

6

Please be advised that a CESA Permit should be obtained if the project has the potential to result in take of species of plants or animals listed under CESA, either during construction or over the life of the project. Issuance of a CESA Permit is subject to CEQA; therefore, the draft EIR must specify impacts, mitigation measures, and a mitigation monitoring and reporting program. If the project will impact CESA listed species, early consultation is encouraged, as significant modification to the project and mitigation measures may be required in order to obtain a CESA Permit.

7

Northern spotted owls

Mitigation measure BIO-3a states that avoidance of impacts to northern spotted owls (*Strix occidentalis caurina*) will be achieved through review of the results of the Point Reyes Bird Observatory (PRBO) surveys conducted within the project vicinity. It is unclear whether these surveys will be conducted in a manner that will provide a sufficient basis for determining that nesting northern spotted owls are likely absent from the project area. The draft EIR should evaluate this by demonstrating that the PRBO and/or supplemental surveys will cover all suitable habitat within the project area and that the surveys will be conducted in conformance with the current U.S. Fish and Wildlife Service protocol. It would also be appropriate to include correspondence demonstrating that the PRBO understands and endorses the proposed use of their studies.

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Mitigation measure BIO-3b states that if construction work is conducted during the breeding season, surveys will be conducted to determine if nesting northern spotted owls are present and specifies additional measures to be implemented in the event an active nest is detected. However, this fails to consider the potential impacts to nest sites which may occur outside of the breeding period. Northern spotted owls frequently re-use nest sites. If the project damages a nest site outside of the breeding period, this may adversely affect breeding owls in the subsequent breeding period. As such, the surveys specified in BIO-3b should not be considered sufficient to address the issues described in the preceding paragraph.

9

Nesting Birds

BIO-4 does not address impacts to nests which may occur as a result from project activities conducted outside of the breeding season. As many bird species return to previously used nests or rely on nests built by other species, the draft EIR should address the project's potential impacts to nests of special-status bird species which may occur as a result of activities outside of the breeding period. Damage to unoccupied nests should be minimized to the extent feasible.

Salmonids

The draft EIR states that take of federally and State listed anadromous salmonids may occur if culvert replacement work is conducted in tributaries during time when flow is present. Mitigation measure 5a should include the specifications that no work shall be conducted in contact with flowing water and that no work shall be conducted in streams where coho salmon (*Oncorhynchus kisutch*) may be present.

11

We believe that with the implementation of mitigation measures described in the draft EIR – including the modification recommended in this letter, that the project will avoid take of coho salmon. Coho are listed under CESA.

Special-status amphibians

12

Mitigation measure BIO-7b describes limitation of work areas to prevent impacts to potential habitat. The draft EIR should describe nesting habitat characteristics for northwestern pond turtles and specify that known nesting habitat will be excluded from work areas and that limitation of work areas will be done based in part on avoidance of potential nesting habitat.

Bats

13

The draft EIR states that pallid bats (*Antrozous pallidus*) and Townsend's big-eared bats (*Corynorhinus townsendii*) are documented within the study area near Platform Bridge Road. However, the project's effects at this site are not analyzed. The draft EIR should

14

discuss whether or not there will be effects to this and any other known sites. Further, in its impacts analysis, the draft EIR only discusses the removal of roost trees. This fails to consider that the project may affect bats through disturbance of roosting sites.

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15

Seasonal Wetlands

Mitigation measure BIO-11 states that mitigation for loss of seasonal wetlands will be achieved through establishment of new seasonal wetlands within the Lagunitas Creek watershed at an area ratio of 2:1. The draft EIR *suggests* that this may be accomplished through funding the establishment of 0.48 acres of new floodplain wetland habitat along Lagunitas Creek. However, the draft EIR does not include any details of this proposed mitigation nor does it demonstrate the feasibility of this approach. Rather than defer details of project mitigation to a later time, the draft EIR should provide a detailed plan for feasible mitigation.

Alternatives Analysis (Option A)

"Option A" describes a suite of additional project activities which may or may not be implemented as part of the project. These activities include widening of the roadway in order to provide additional shoulder area, more uniform width and increased sight distance. This includes construction of additional low retaining walls and the removal of 9 trees, 7 of which are redwood trees with diameters in excess of 40 inches and up to 95 inches in diameter.

Large-diameter living trees are important wildlife elements for species which utilize forested habitats. Much of the habitat value of these elements is provided by dominant canopy position and the presence of structural characteristics including cavities, reiterated crowns, basal fire scars, platforms, dead tops, and particularly basal hollows. Due to both increased light availability resulting from pre-dominant or dominant canopy position and crown injuries attendant to age, older conifers may develop multiple re-sprouted trunks arising from other trunks and branches. Due to their long-life and resistance to wood-decay fungi, redwoods most often manifest benefits to wildlife as living trees. These trees may provide nesting sites, alternate nest sites, or roosting sites for the federally threatened northern spotted owl.

16

The removal of these trees should be considered a significant impact to biological resources. The significance of the removal of these important habitat elements should not be considered to be offset by the large number trees with diameters of six inches or greater which occur along the road, as asserted in the draft EIR. Nor should the significance of the effect of reduced shading of the Lagunitas Creek riparian area be considered insignificant absent a specific evaluation of the effects of the removal of these trees on stream shading.

17

The measures identified in the draft EIR for the removal of these large redwood trees, BIO-9a and BIO-9b will not reduce the effect of the removal of these trees below a level of significance. Three 15-gallon specimens will not provide the functional habitat characteristics of a 40-inch or greater redwood tree with a dominant or co-dominant canopy position within any reasonable planning period. It is unclear how a financial contribution of unspecified amount to the Marin Municipal Water District to be used for unspecified activities can be expected to offset the effects of this impact.

18

Mr. David Bernardi
June 16, 2010
Page 5

19

Because the impacts of the Proposed Project (which includes Option A activities) include remaining significant adverse effects, we agree with the draft EIR that the Mitigated Roadway Alternative should be considered the environmentally superior alternative.

20

We recommend that the Proposed Project avoid significant adverse effects by retaining these seven redwoods with diameters in excess of 40 inches.

21

Deferral of detail for mitigation measures

In many places, the draft EIR specifies that mitigation measures developed at a later time will be subject to DFG approval. Please recognize that DFG may not be able to respond rapidly to future requests for mitigation plan review. We recommend that the draft EIR describe to the greatest extent possible mitigation measures to be applied in response to foreseeable events or conditions. This will minimize the potential for project delays and better inform DFG and the public regarding the implementation of the project.

If you have any questions, please contact Mr. Richard Fitzgerald, Coastal Habitat Conservation Supervisor, at (707) 944-5568.

Sincerely,

Handwritten signature of Scott Wilson in black ink, followed by the word "FOR" in all caps.

Charles Armor
Regional Manager
Bay Delta Region

cc: State Clearinghouse

COMMENTER A1

California Department of Fish and Game; Charles Armor, Regional Manager, Bay Delta Region (June 16, 2010)

- A1-1: The project as proposed would replace culverts below the existing roadway. As described in Master Response 3, culvert replacement would be limited to the area of disturbance in order to avoid vegetation and/or tree removal, and only where the existing culvert is in disrepair. This comment relates to the merits of the proposed project and not its environmental effects. Therefore, no further response is required under CEQA. (Please see Master Response 1 and Master Response 3).
- A1-2: Many of the existing culverts were originally constructed in naturally occurring low points. These culverts generally collect runoff from the larger watershed beyond the roadway and this runoff accounts for the majority of flow through the culvert. As such, the installation of additional culverts would not substantially reduce flow at a specific location. At present, an existing culvert is located approximately every 400 feet along the roadway in the project area. Furthermore, the installation of new culverts would create the need for significant grading and the removal of vegetation.
- A1-3: The comment that a Notification to CDFG for a Lake and Streambed Alteration Requirement (LSAA) would be required for any activity that would divert or obstruct the natural flow, or change the bed, channel or bank of a river or stream or use material from a streambed is acknowledged.
- A1-4: The EIR identifies two project activities that would occur below the tops of stream channel banks, as follows:

Slope repair work at Station 270+25 would entail the placement of a retaining wall and associated riprap along a 60 to 200-foot reach (Section 3.4.1 states that approximately 200 feet of the roadway has settled. Thus, the wall could be from 60 feet to 200 feet long. The length would be determined during final design) of the upper bank of Lagunitas Creek, well above the ordinary high water (OHW), as described on Pages 75 and 76 of the DEIR and as shown in Figure 3.4.3 of the DEIR and Figure 5 and 6 of the Biological Assessment – BA (DEIR Appendix E). This work would affect approximately 1,600 square feet of eroded upper creek bank, as described under Impact BIO-10, resulting in the loss of 8 native trees growing along the bank, which would be mitigated under Mitigation Measures BIO-9 and BIO-10.

Culvert replacement work would affect 57 culverts and associated headwalls along the project alignment; temporarily affecting 2,308 linear feet of culverted stream channel (where the channel passes beneath the existing roadbed), as described under Impact BIO-11 and depicted in Figures 3 and 4 of the Biological Assessment (BA; DEIR Appendix E). The work would include the installation of culvert elbows with level spreaders at the outlets, and the placement of erosion fabric along the creek bank below the outlets at 13 culverts where discharges from existing “shotgun culverts” have resulted in bank erosion, as shown in BA

Figure 3. At two culverts, rock riprap would be required below the outlets, where substantial erosion has occurred. The BA (DEIR Appendix E) includes a table that specifies the locations and details of repair work at each culvert (Appendix D of the BA).

As stated in Impact BIO-11, the erosion fabric/rock riprap work would temporarily disturb approximately 5,500 square feet of stream bank above the OHW. The culvert replacement work would not require removal of any riparian trees, however existing herbaceous and shrubby vegetation growing at the culvert outlets would need to be trimmed and in some cases removed. Mitigation Measures BIO-11c and BIO-11d require reseeded and replanting with appropriate native riparian vegetation where such removal is required.

The DEIR's level of detail on project activities that would affect streams is sufficient to identify potential impacts and mitigation measures under CEQA. Additional specifications and details would be provided to CDFG under the Section 1602 (Lake and Streambed Alteration) permit application process, as may be required at the time of application.

- A1-5: The project has already complied with CDFG and USFWS guidelines for conducting protocol-level botanical surveys of the entire project alignment. As described in Section 2.3 of the BA (DEIR Appendix E), protocol-level botanical surveys were conducted by qualified botanists between April and June 2007 and again in February 2008. (The botanical survey report is provided as an appendix to the BA.) Mitigation Measure BIO-1 is not intended to fulfill the need for special status plant surveys, but rather is intended as a supplemental precautionary measure in the event that new populations of special-status plants were to colonize the project area and/or previously undetected populations of special-status plants were to re-appear prior to the start of construction. Mitigation Measure BIO-1 also is intended to ensure proper avoidance of three species of locally significant plants (*Romanzoffia californica*, *Mitella ovalis* and *Elymus californicus*), observed at three specific locations adjacent to the alignment work area. The timing guidelines for these supplemental surveys (January – August of the construction year, as allowed under the construction schedule) is consistent with the supplemental, precautionary nature of the surveys.
- A1-6: The comment that a California Endangered Species Act (CESA) Permit would be required if the project has the potential to result in take of species, plants or animals listed under CESA is acknowledged. Section 4.3 of the Draft EIR specifies potential impacts to such species and provides mitigation measures to reduce potential impacts to a less than significant level. A Mitigation Monitoring and Reporting Program will be prepared as part of the Final EIR to ensure mitigation measures are implemented.
- A1-7: The comment states that under Mitigation Measure BIO-3a, avoidance of impacts to northern spotted owls would be achieved through a review of the results of surveys conducted in the vicinity by the Point Reyes Bird Observatory (PRBO). This comment incorrectly portrays Mitigation Measure BIO-3a, which states that the PRBO would be contacted as an *initial step* in the project's mitigation sequence for avoiding impacts to spotted owls. The PRBO conducts monitoring of nesting spotted owls in the project vicinity and therefore could provide useful baseline information on where nesting is currently occurring during the construction year. Under the mitigation measure, the information from PRBO would be used

to help inform actual pre-construction surveys for nesting spotted owls to be performed by project biologists and also to assist with pre-construction consultation with the USFWS and CDFG, as needed. The primary means of ensuring avoidance of nesting spotted owls would occur under Mitigation Measure BIO-3b, which requires pre-construction surveys of all suitable nesting trees in the vicinity of the construction zone, consultation with the USFWS and CDFG if active nests are found, and establishment of proper buffer zones around nesting sites until juvenile owls have fledged.

- A1-8: The comment states that Mitigation Measure BIO-3a fails to take into account potential impacts to spotted owl nest sites that might occur after the breeding period as a result of damage to nest sites that could be re-used by owls in the subsequent breeding period. This comment assumes that the purpose of the mitigation measure is to avoid physically damaging spotted owl nest sites. However, this is not the case. The purpose of the measure is to avoid construction-related noise disturbance to breeding spotted owls. Once construction is completed, noise levels would return to pre-project conditions and there would be no further potential for disturbance.

The project would have the potential to physically damage the long-term viability of an owl nest site if the trunk or roots of a nesting site tree were to be inadvertently damaged during construction to the extent that the tree canopy would ultimately decline (thereby reducing the suitability of the canopy as habitat for spotted owls), or if the damage were severe enough to ultimately require tree removal (thereby eliminating a cavity nesting site.) This potential impact would be avoided with the implementation of Mitigation Measure BIO-5c, which requires that all native trees adjacent to concentrated work areas be protected with fencing during the construction period, and under Mitigation Measures BIO-10a through 10i which require various measures to avoid damage to tree root zones.

The project also has the potential to eliminate potentially suitable spotted owl nesting habitat through tree removal. Two of the eight trees to be removed for the slope repair work at Station 270+25 may be large enough to provide marginally suitable spotted owl nesting habitat. All nine trees that would be removed under Option A are large enough to provide suitable habitat. The loss of suitable nesting habitat from this tree removal is recognized as a project impact under Impact BIO-9 for which Mitigation Measures BIO-9a and 9-b are proposed.

- A1-9: Please see response to Comment A1-8. The same tree damage avoidance and mitigation measures that would be employed for northern spotted owl nest sites will also be applicable to general tree nesting sites for other bird species.
- A1-10: Please see Master Response 5.
- A1-11: The comment that with implementation of the mitigation measures included in the Draft EIR, including the modification recommended in Comment A1-10 above, the project would avoid take of coho salmon is acknowledged. No further response is required.

- A1-12: The Draft EIR recognizes the potential to impact northwestern pond turtle (*Clemmys marmorata marmorata*) and includes mitigation measures to reduce potential impacts to a less than significant level. Section 4.3.1 of the Draft EIR (see Table 4.3.B, pp. 163 and pp. 168-169) describes the habitat requirements of the northwestern pond turtle, including nesting habitat of the species, and states that appropriate foraging, breeding, nesting, basking, and wintering habitat for this species is present in Lagunitas Creek and upland habitat areas adjacent to the project site. Mitigation Measure BIO-7b requires that work areas in northwestern pond turtle habitat be fenced to prevent equipment and vehicles from straying into adjacent habitat areas. An authorized biologist shall direct installation of the fence and conduct biological surveys to move any individuals from within the fenced area to suitable habitat outside of the fence.
- A1-13: Section 4.3.4 of the Draft EIR (pp. 202-204) identifies potential impacts to roosting and maternity sites used by pallid, Townsend's big-eared and western red bats. These bat species have been documented to occur in trees near Platform Bridge Road and could roost in other trees in the project area. Tree removal associated with the proposed project could impact active roosting or maternity sites for these species throughout the project area, including the area near Platform Bridge Road.
- A1-14: Mitigation Measure 8a requires pre-construction surveys for potential roosting sites for pallid bats and Townsend's big-eared bats of all trees in the Platform Bridge vicinity. The project would not affect Platform Bridge itself or other potential non-tree roosting sites in this vicinity.
- A1-15: Please see Master Response 10.
- A1-16: Please see Master Response 6.
- A1-17: Please see Master Response 6.
- A1-18: Please see Master Response 6.
- A1-19: The comment that the Mitigated Roadway Alternative should be considered the Environmentally Superior Alternative is acknowledged. No further response is required.
- A1-20: The comment recommends that the project retain those seven redwoods with diameters in excess of 40 inches that would be removed under Option A. This comment is acknowledged. No further response is required under CEQA. Please see Master Response 1.
- A1-21: The authors of the EIR and the County disagree with the comment that the Draft EIR "defers" the development of mitigation to a later time. When preconstruction surveys for special status plant and animal species are required, the mitigation measures clearly delineate the timing and method for such surveys and the measures that shall be implemented if species are discovered in the project area. In some instances, mitigation measures require additional coordination and/or consultation with CDFG regarding approved mitigation methods, which

does not constitute “deferral” of mitigation, but rather adherence to CDFG protocols for protection of special status species.

In regard to wetland mitigation (Mitigation Measure BIO-11b), we have provided additional details on the proposed Lagunitas Creek - Tocaloma Reach backwater channel mitigation action. These details are provided in Master Response 10 (Section 3.1 above).



DEPARTMENT OF PARKS AND RECREATION

Ruth Coleman, Director

Marin District
845 Casa Grande Road
Petaluma, CA 94954

RECEIVED

June 24, 2010

JUN 28 2010

MARIN COUNTY
DEPARTMENT OF PUBLIC WORKS

Ernest Klock
Principal Engineer
Marin County Department of Public Works
3501 Civic Center Drive, Room 404
San Rafael, CA 94903

RE: Comments by the California Department of Parks and Recreation on the Draft Environmental Impact Report (DEIR) for the Sir Francis Drake Boulevard Rehabilitation Project, Marin County, California.

SCH: 2008112004

Dear Mr. Klock,

Thank you for the opportunity to provide comments on the Draft Environmental Impact Report for the Sir Francis Drake Boulevard Rehabilitation Project. The proposed project passes through Samuel P. Taylor State Park and we appreciate the opportunity to comment on the project and its possible impacts to the State Park.

1 Data was not included in the DEIR that demonstrated the Marin County Right of Way for Sir Francis Drake Boulevard through Samuel P. Taylor State Park. Documentation needs to be provided to California State Parks to demonstrate that all project components and associated impacts will occur only within the Right of Way and not within the State Park. Any work that occurs within the State Park will need further review and permitting by California State Parks.

Environmental Impacts

- 2 Bio-3: Northern spotted owl surveys should be completed prior to initiation of the project and the protocols detailed in A Revised Draft 2010 Northern Spotted Owl Survey Protocol, published by the US Fish and Wildlife Service in February 2010, should be the protocols used for this project.

3 Bio-9: According to California State Parks Genetic Integrity Policy (Department Operation Manual 0310.4.1) any plants planted within Samuel P. Taylor State Park must be propagated from plants from the nearest viable population. It is the recommendation of California State Parks that this policy be utilized in the

3 con.

- revegetation sites adjacent to the State Park in the project area in order to maintain the genetic integrity of the local native plant populations.
- Bio-11: If native plants will be used in the revegetation of disturbed areas within the State Park, those seeds or propagules must be collected from plants from the nearest viable population. It is the recommendation of State Parks that this policy be utilized in the revegetation sites adjacent to the State Park in the project area in order to maintain the genetic integrity of the local native plant populations.

Cultural Impacts

4

- The survey of SFDB, referenced in the text on page 226 **should be included in the appendix.** Although the culverts mentioned that would be impacted under Cult 2 were categorized as historically significant under CEQA, there are no photographs, information on location, etc. for the reader. It simply mentioned that a survey was done in 2007 and updated in 2009 by LSA, the authors of the DEIR.

5

- SFDB is categorized by LSA as a historical resource under CEQA and categorized the impacts as significant....i.e. demolition and installation of new culverts and other water diversions features.
 - Mitigation Measure, Cult 2a, Documentation by the survey and offering the EIR to archives, is **not** adequate mitigation for the loss of these features. The features that need to be removed must still be documented to the extent that they can be rand constructed in place using the same design and materials. New culverts placed where none had been previously, or where they had already been updated, can use a new compatible design. This alternative should be used for historically significant properties that are demolished, rather than simple documentation of the demolished features. *Since the report does not include a photograph of a historically significant culvert, or a photograph of possible replacements, this impact is impossible for the reader to assess.*

6

- No mention is made of the historic concrete railroad bridge bulkhead beyond the listing on p. 222 of recorded sites. This site is not mentioned in the list of sites that are unlikely to be impacted, so it is important to note that is will most likely **not** be affected by the project.

7

- In general, the history of the area during the past 150 years is inadequate. There is little mention of the railroad, the resort that followed the paper mill, and the establishment of Samuel Pl. Taylor State Park after World War II. Sections of the park are eligible for the California Register as a good example of post-World War II park development. *Park Rustic Buildings and Structures in the California State Park System: Survey and Evaluation.* Carol Roland, December, 2003. Prepared for Cultural Resources Division, California State Parks, Sacramento CA.

8

- Other than a phone interview with Dewey Livingston, the list of references indicates very little research into the history of the area during the past 150 years. **Most** of the text that lays out the historic context is devoted to prehistory. There should also be a history of the ranch where the project terminates.

9 Alternatives Analysis (Section 2.7) and Analysis of the Resurface Roadway Alternative, Aesthetics (Section 5.2.2)

- If the **Resurface Roadway Alternative** is the selected alternative, why wouldn't the informal pullouts be closed? At the very least, signage should be installed to prohibit parking along the roadway to address resource and safety concerns.

10 Operational Period Impacts

- On page 315, second paragraph, 8th and 9th line - Should read: "Day use recreational users of the parks and bicyclist **will** (not could) be affected by construction noise."

Again, thank you for the opportunity to comment on this document. If you have questions about this response, please don't hesitate to phone me at 707.769.5665 Ext. 224 or email me at drodriguez@parks.ca.gov

Sincerely,



Danita Rodriguez
District Superintendent
Marin District

cc: CSP Natural Resource Division Chief
File

COMMENTS A2

California Department of Parks and Recreation; Danita Rodriguez, District Superintendent, Marin District (June 24, 2010)

- A2-1: The comment that work outside of the County's right-of-way will require review and permitting by State Parks is acknowledged. Prior to project construction, the County will provide documentation of work to be completed within the County's right-of-way and will request State Parks review and approval for any work or associated impacts outside of the County's right-of-way.
- A2-2: Northern spotted owl surveys would be completed prior to the start of construction. With regard to the applicability of the USFWS revised 2010 survey protocols, please see the subsequent response to Comment A4-9. Please also see the Response to Comment A1-7.
- A2-3: The request that revegetation sites in the project area use seeds or propagules collected from plants from the nearest viable population is acknowledged. No change to the Draft EIR is warranted.
- A2-4: The survey report prepared by Pacific Legacy in 2009 documents the identification and evaluation of cultural resources in and near the project area that may be subject to impact. Some of these resources are prehistoric in nature, reflecting the material remains of Native American use and habitation. Information regarding the location and nature of prehistoric archaeological deposits, such as the Pacific Legacy reports, is commonly withheld from public review as a means to protect such resources from unauthorized disturbance or vandalism. The authority to treat specific information as confidential and not subject to public review requirements is California Government Code §6254.10 and *CEQA Guidelines* §15120(d). Should the need arise, responsible and trustee agencies such as State Parks have the authority to review the Pacific Legacy reports archived by the County of Marin.
- A2-5: The drainage features of SFDB identified by the commenter contribute to the overall significance of the roadway as a transportation structure. The drainage features are not primary, distinguishing characteristics of SFDB, but rather they are design features that are part of the overall roadway system, and are collectively associated with its significance. As minor roadway features, the potential impact of changes to their design, location, or materials is proportionate to their contribution to the overall significance of SFDB. For this reason, the documentation provided in the Pacific Legacy survey report, including the Department of Parks and Recreation 523 Series forms completed for SFDB, contain information about the location, form, materials, and design of the drainage features. The level of detail achieved by Pacific Legacy's recording is commensurate with the diminishment of the roadway's historical integrity from the proposed removal or modification of some of the drainage features. The distribution of the survey report to repositories, including the Marin History Museum Library and the Marin County Department of Public Works, ensures that a record of the engineering characteristics of the drainage features would be conveyed to organizations with interests in both the historical and technical development of SFDB. This documentation offsets the loss of some of the minor contributing features of SFDB. For these reasons, the

County disagrees with the commenter's assertion about the adequacy of this mitigation measure.

- A2-6: The cultural resource that the commenter refers to is CA-MRN-547H/P-21-000478, accurately described as a historical concrete railroad bridge bulkhead. As noted on page 222 of the Draft EIR, some of the cultural resources identified by the Pacific Legacy survey report were clearly in or adjacent to the project area and subject to potential impact; for others, based on project information and mapping, it was not as clear that the project would potentially impact them. For this reason, a conservative approach was taken with the potential impact scenario. Cultural resources whose impact by the project was not definite would be considered subject to such impacts for the purposes of the analysis. This conclusion was made to ensure that, although the type and nature of project impacts to them was not certain, they would receive an equivalent level of protective treatment during mitigation as a precaution. Therefore, the County believes that considering CA-MRN-547H/P-21-000478 as subject to potential impact is an appropriate impact assessment approach.
- A2-7: The historical overview provided in the Draft EIR was not intended, nor is required, to be exhaustive. The objective of the overview is to introduce a non-expert public audience to the general historical trends, land use themes, and cultural background in the project area that provides context for considering and understanding the potential for impacts to cultural resources. The type of detailed historic context referenced by the commenter is appropriate for property-specific investigations where the significance of a particular resource is being evaluated. The County believes that the general level of detail regarding the historical development of the area is adequate.

The Draft EIR has been revised in response to the commenter's statement regarding portions of Samuel P. Taylor Park. The revision is for a paragraph on pages 216-217 of the Draft EIR. The text has been revised as follows, with additions underlined:

By the early years of the 20th century, the industrial activity in the area along Lagunitas Creek was all but over. The notable Bay Area poet, Kenneth Rexroth, often spent time in an isolated cabin during the 1930s and 1940s in an area that was incorporated into Samuel P. Taylor State Park in 1946. Portions of the park, in fact, have significant historical associations such that they are eligible for listing in the California Register of Historical Resources. The route of the former pack trails that brought the first non-native settlers to the region is now followed by SFDB. Construction for the paved roadway began in 1926, and grading was finished the following year. The roadway was allowed to "settle" for two years before the concrete was poured. SFDB was officially opened and dedicated near the end of 1929, and has remained mostly unchanged and unimproved since that time.

- A2-8: Please refer to the first part of the response to comment A2-7.
- A2-9: The comment that signage should be installed under the Resurface Roadway Alternative is acknowledged. No further response is required. Please see Master Response 12 regarding the scope of the Alternatives Analysis included in the Draft EIR.

A2-10: The comment that construction noise would affect day use recreational users of the park is acknowledged. Section 4.10.4 (pp. 318) of the Final EIR has been changed as follows:

Day use recreational users of the parks and bicyclists ~~could~~ would likely be affected by construction noise.

NATIVE AMERICAN HERITAGE COMMISSION

915 CAPITOL MALL, ROOM 364
SACRAMENTO, CA 95814
(916) 653-4082
(916) 657-5390 - Fax



May 18, 2010

MAY 21 2010 PM 2:53 Planning

David Bernardi
Marin County Community Development Agency
3501 Civic Center Drive, Room 308
San Rafael, CA 94903

RE: SCH#2008112004 Sir Francis Drake Boulevard Rehabilitation Project Draft EIR; Marin County.

Dear Mr. Bernardi:


The Native American Heritage Commission (NAHC) has reviewed the Notice of Completion (NOC) regarding the above project. To adequately assess and mitigate project-related impacts on archaeological resources, the Commission recommends the following actions be required:

1. Contact the appropriate Information Center for a record search to determine:
 - If a part or all of the area of project effect (APE) has been previously surveyed for cultural resources.
 - If any known cultural resources have already been recorded on or adjacent to the APE.
 - If the probability is low, moderate, or high that cultural resources are located in the APE.
 - If a survey is required to determine whether previously unrecorded cultural resources are present.
2. ✓ If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.
 - The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum, and not be made available for public disclosure.
 - The final written report should be submitted within 3 months after work has been completed to the appropriate regional archaeological Information Center.
3. ✓ Contact the NAHC for a Sacred Lands File Check.
 - **Check Completed with negative results, 05/18/10**
The absence of specific site information in the Sacred Lands File does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites (see below).
4. ✓ Contact the NAHC for a list of appropriate Native American Contacts for consultation concerning the project site and to assist in the mitigation measures.
 - **Native American Contacts List attached**
The NAHC makes no recommendation or preference of a single individual, or group over another. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated, if they cannot supply information, they might recommend other with specific knowledge. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call to ensure that the project information has been received. If you receive notification of change of addresses and phone numbers from any these individuals or groups, please notify me. With your assistance we are able to assure that our lists contain current information.
5. ✓ Lack of surface evidence of archeological resources does not preclude their subsurface existence.
 - Lead agencies should include in their mitigation plan provisions for the identification and evaluation of accidentally discovered archeological resources, per California Environmental Quality Act (CEQA) §15064.5 (f). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American, with knowledge in cultural resources, should monitor all ground-disturbing activities.

5 con.

- Lead agencies should include in their mitigation plan provisions for the disposition of recovered artifacts, in consultation with culturally affiliated Native Americans.
- Lead agencies should include provisions for discovery of Native American human remains in their mitigation plan. Health and Safety Code §7050.5, CEQA §15064.5 (e), and Public Resources Code §5097.98 mandates the process to be followed in the event of an accidental discovery of any human remains in a location other than a dedicated cemetery.

Sincerely,



Katy Sanchez
Program Analyst
(916) 653-4040

CC: State Clearinghouse

Native American Contact List
Marin County
May 18, 2010

A3

The Federated Indians of Graton Rancheria
Gene Buvelot
6400 Redwood Drive, Ste Coast Miwok
Rohnert Park, CA 94928 Southern Pomo
coastmiwok@aol.com
(415) 895-1163 Home
(415) 259-7819 Cell

Ya-Ka-Ama
7465 Steve Olson Lane Pomo
Forestville , CA 95436 Coast Miwok
info@yakaama.org Wappo
(707) 887-1541

The Federated Indians of Graton Rancheria
Greg Sarris, Chairperson
6400 Redwood Drive, Ste Coast Miwok
Rohnert Park, CA 94928 Southern Pomo
coastmiwok@aol.com
707-566-2288
707-566-2291 - fax

The Federated Indians of Graton Rancheria
Frank Ross
100 Cielo Lane, Apt 102 Coast Miwok
Novato , CA 94949 Southern Pomo
miwokone@yahoo.com
(415) 269-6075

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed SCH# 2008112004 Sir Francis Drake boulevard Rehabilitation Project Draft EIR; Marin County.

COMMENTER A3

California Native American Heritage Commission; Katy Sanchez, Program Analyst (May 18, 2010)

- A3-1: The tasks recommended by the commenter have been completed. Pacific Legacy contacted the Northwest Information Center and completed the tasks recommended by the commenter. The documentation for these tasks is included in *Archaeological Survey Report for the Sir Francis Drake Boulevard Improvements Project, Marin County, California* (Pacific Legacy 2009).
- A3-2: The tasks recommended by the commenter have been completed. Pacific Legacy prepared a technical report describing the methods, results, and recommendations of their cultural resources study. This report was submitted to the proper county planning authorities, and sensitive site information was treated as confidential. The Pacific Legacy report will also be submitted to the Northwest Information Center. The documentation for these tasks is included in *Archaeological Survey Report for the Sir Francis Drake Boulevard Improvements Project, Marin County, California* (Pacific Legacy 2009).
- A3-3: The tasks recommended by the commenter have been completed. Pacific Legacy contacted the Native American Heritage Commission twice for a review of the Sacred Lands File: September 28, 2007 and August 6, 2009. The documentation for these tasks is included in *Archaeological Survey Report for the Sir Francis Drake Boulevard Improvements Project, Marin County, California* (Pacific Legacy 2009).
- A3-4: The tasks recommended by the commenter have been completed. Pacific Legacy contacted the Native American Heritage Commission twice for a contact list of Native American organizations and individuals who may have information or concerns about the project: September 28, 2007 and August 6, 2009. Pacific Legacy then contacted the organizations and individuals on the contact list to obtain their comments. The documentation for these tasks is included in *Archaeological Survey Report for the Sir Francis Drake Boulevard Improvements Project, Marin County, California* (Pacific Legacy 2009).
- A3-5: The Draft EIR contains mitigation measures that address the concerns raised by the commenter. Mitigation Measures CULT-1a, -1b, -1c, and -4 contain measures to identify, avoid, and mitigate (if necessary) impacts to archaeological deposits and human remains.



IN REPLY REFER TO:

United States Department of the Interior

NATIONAL PARK SERVICE

Point Reyes National Seashore

Point Reyes, California 94956

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MARIN COUNTY
DEPARTMENT OF PUBLIC WORKS

L7617

June 24, 2010

Ernest Klock, Principal Civil Engineer
Marin County Department of Public Works
3501 Civic Center Drive, Room 404
San Rafael, CA 94903

Subject: Sir Francis Drake Boulevard Rehabilitation Project

Dear Mr. Klock:

The National Park Service (NPS) has reviewed the Draft Environmental Impact Report (DEIR) for the Sir Francis Drake Boulevard Rehabilitation Project and is pleased to provide the following comments. This is a highly constrained site and the project is sensitive to stream and riparian resources, including endangered coho salmon, known to occur in the watershed. The proposed project will maintain the character of the current route through Samuel P. Taylor State Park while improving the overall condition of the road surface.

1

The NPS concurs with the determination that the Mitigated Roadway Alternative represents the environmentally superior alternative. It accomplishes the objectives of the rehabilitation project without removing any trees (with the exception of the slide repair). The DEIR states that the rehabilitation project will result in non-standard conditions but that roadway alignment will be improved and public safety will be enhanced. The project will not change the level of service or the types of uses that occur along this route. The Mitigated Roadway Alternative best balances the rehabilitation needs with the protection of highly sensitive resources.

Our comments are focused on the following topics.

- Intent of rehabilitation project
- Culvert replacement objectives
- Crack and seat method
 - Long-term impact to root structure of redwood trees
 - Sound protection and buffers for Northern Spotted Owl
- Construction Delays

2

Project Intent

Because of the highly constrained conditions, the proposed rehabilitation project will not change level of service, will not create bike lanes, etc. The consideration of Option A would result in the removal of nine large redwood trees along the route. While it would increase the road shoulder by 1 foot (from 0 to 1) along approximately 2500 feet of the 5 mile route, it will not change existing conditions. The additional impacts associated with Option A are not justified as they would result in minimal improvement and the road will still not meet any standard requirements.

3

If the Board of Supervisors selects Option A, trees that are removed from the road edge should be removed in a manner that allows them to be used in conjunction with ongoing woody debris stream habitat restoration efforts. This material should be made available to the Marin Municipal Water District for incorporation into their ongoing woody debris program.

4

Culvert Replacement

The Mitigated Roadway Alternative states that most culverts will be replaced in-kind as part of the project, and discusses design alterations for culverts that may cause erosion on the downslope side. Our concern is that the project does not differentiate between the types of culvert crossings that occur within the project area. There are three types of culvert crossings along the route, each which warrants different project design. Below is an approximate list of potential fish bearing and sediment supply tributaries. It should be noted that most other culverts are for road drainage, and the existing culvert size is likely adequate.

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- Fish bearing tributary
 - Devils Gulch – MP 18.05
 - Cheda Creek – MP 19.17
- Sediment supply tributary

▪ MP 15.43	MP 18.24
▪ MP 15.86	MP 18.83
▪ MP 16.09	MP 19.64
▪ MP 16.86	MP 19.80
▪ MP 17.38	MP 20.13
▪ MP 17.94	
- Road drainage culverts
 - All others

Fish bearing tributaries require specific design standards if the culverts are going to be altered. It does not appear that the project will address these crossings.

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The sediment supply tributaries, while not likely to provide habitat for fish, are important for the supply of gravel and beneficial-sized materials important to salmonid habitat. In most cases, the culverts within the sediment supply tributaries are under-sized and set at an inappropriate gradient or level for the natural conveyance through the road. The DEIR

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should include consideration for increase in capacity and alteration of invert elevation to accommodate sediment transport through the sites. Actual design standards could be developed as part of the design phase of the project. The current description does not provide this level of design flexibility.

7

Crack and Seat Method

The proposed crack and seat method will minimize how much material must be hauled off-site. It will result, however, in increased impacts potentially to the root structure of the adjacent redwood trees, and in elevated noise impacts throughout the length of the road within Samuel P. Taylor State Park.

8

As part of the project, the County should monitor long-term condition of the trees most directly impacted by the crack and seat method to determine if there are impacts to the root structure and health of these trees.

9

The project will result in noise impacts to the federally-threatened Northern Spotted Owl (SPOW). This is a long project and will result in extended periods of elevated noise levels associated with the crack and seat method. The mitigations identified in the DEIR do not appear to be consistent with existing US Fish and Wildlife Service (USFWS) protections and should be evaluated further.

The project area is proximate to four (4) known SPOW nesting sites. The DEIR states, "If such surveys indicate that spotted owls are nesting within 165 feet of the construction area, the USFWS and CDFG shall be consulted regarding additional avoidance and minimization measures." "Additional avoidance and mitigation" would likely be required anywhere inside of that buffer. The 165-foot buffer is a very minimal buffer and is not likely to result in protection of SPOW. The project sound level would benefit from a more conservative re-classification to "very high", following USFWS guidelines (2006), which would necessitate a noise buffer of at least 825 feet from any known SPOW nest.

Typically, a quarter-mile planning and protection buffer is established around SPOW nest sites. If a work area falls within this buffer, additional protections are evaluated. The Sir Francis Drake Blvd. project area falls within a ¼ mile of at least four (4) documented SPOW activity centers along the project corridor. We recommend consultation with USFWS as soon as possible in this matter and suggest that you coordinate SPOW monitoring along the project corridor well in advance of project implementation.

Prior to construction, and through the construction project, SPOW monitoring should be conducted following the "United States Fish and Wildlife Service 2010 Protocol for surveying proposed management activities that may impact northern spotted owls. Revised February 18, 2010. USFWS, Sacramento, California" guidelines along the entire project corridor. The USFWS methods will be sufficient to locate SPOW nests that may be affected by project actions and noise. Note that the new 2010 USFWS guidelines require a minimum of 6 visits for two consecutive years in order to determine that an area *is not* occupied by spotted owls. While the normal SPOW nesting season begins March 1,

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high levels of noise beginning in February may result in abandonment of sites. For the purpose of the project, the nesting season should be considered as February 1 to July 31. For successful nests, noise buffers should even remain in place after fledging until July 31. High noise levels even after young have fledged can result in impacts to the individuals.

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Project Duration and Outreach

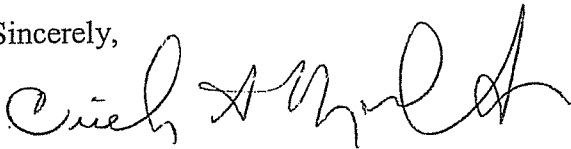
The DEIR notes that this rehabilitation project requires approximately nine months of work. Sir Francis Drake Blvd. is a very important access for the visiting public and employees of Point Reyes National Seashore. More than two million visitors per year access Point Reyes National Seashore, many through the Sir Francis Drake corridor.

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Please include Point Reyes National Seashore on the list of agencies that will review the contractor's Traffic Management Plan. There is not much detail about the work, whether lane closures will be constant, or just during construction. Information about any closures will require advance notice. It is important that the County make any road closure/delay information widely available well in advance. The County should maintain and advertise information about this project on a dedicated web site. This would allow the NPS to provide direct links to this site to assist with access. If possible, construction should accommodate open access (no lane closures) on weekends to accommodate visitor access to the area.

Thank you for the opportunity to comment on this project. As the planning moves along, we would appreciate you keeping the Seashore informed of the construction schedule for this project.

Sincerely,



Cicely A. Muldoon
Superintendent

COMMENTER A4

**National Parks Service; Cicely A. Muldoon, Superintendent, Point Reyes National Seashore
(June 24, 2010)**

- A4-1: The comment that the National Park Service (NPS) concurs with the determination that the Mitigated Roadway Alternative represents the Environmentally Superior Alternative is acknowledged. No further response is required. Please see Master Response 12.
- A4-2: The comment that the additional impacts associated with Option A are not justified as they would result in minimal improvement is acknowledged. This comment relates to the merits of the proposed project and not to the adequacy of the Draft EIR. Please see Master Response 1.
- A4-3: As described in Mitigation Measure BIO-9b of the Draft EIR (pp. 206-207), Marin DPW will make available suitable cuttings from the tree removal work for use as woody debris and bio-engineered structures along Lagunitas Creek in order to enhance salmonid habitat. No change to the Draft EIR is required.
- A4-4: The DEIR provided information to differentiate the types of culvert crossings in Appendix D of the BA (Appendix E of the DEIR) which lists the culvert location, size, storm water capacity, potential for wildlife crossing and other conditions. The DEIR provides further information on wildlife and fish passage capacity of culverts on page 154 and page 187.
- A4-5: Neither the Cheda Creek nor the Devil's Gulch culverts would be altered or otherwise affected by the project.
- A4-6: Please see Master Response 3.
- A4-7: Please see Master Response 7 regarding impacts to tree roots associated with project construction. As described in Section 4.10.4 of the Draft EIR (pp. 314-315), construction of the proposed project could create significant short-term noise impacts to noise sensitive receptors in the project area. As was explained in the Draft EIR, this impact is fully mitigated by Mitigation Measures NOI-1a through NOI-1f (p. 316), which ensure construction activities are limited to the less noise-sensitive periods of the day and contractors comply with noise-reduction measures. No changes to the Draft EIR are required.
- A4-8: The comment that the County should monitor long-term condition of the trees most directly impacted by the crack and seat method is acknowledged. Implementation of Mitigation Measures BIO-10a through BIO-10i included in the Draft EIR (pages 209-210) would reduce the potential for long-term impacts to redwoods. Moreover, Mitigation Measure BIO-10a requires that a certified arborist be present for all ground disturbing work in the vicinity (within 50 feet) of redwoods to ensure that all parts of Mitigation Measure BIO-10 would be properly conducted. With implementation of Mitigation Measures BIO-10a through BIO-10i, long-term monitoring of redwood trees in the project area would not be necessary.

- A4-9: Noise levels and spotted owls. The comment re-states the finding in the Draft EIR that the project would result in extended periods of elevated noise levels from the proposed crack and seat construction method and questions the adequacy of the recommended noise buffer for the northern spotted owl. The comment specifically takes issue with the 165-foot noise buffer, which is based on a “high” project generated sound level under USFWS guidelines, and suggests that a more conservative classification of project generated sound to “very high” should be applied, which would result in a 825-foot noise buffer requirement.

The authors of the EIR and the County respectfully disagree with this comment. As stated on pages 184 of the EIR, ambient sound levels along SFDB are estimated to average in the 58 – 61 dBA range, but are as high as 87 dBA with passing trucks (see page 314 of the EIR). Under the USFWS guidelines, ambient sound estimates should include “typical sources experienced on a daily or more frequent basis” (USFWS 2006, page 4), which would include trucks and similar large vehicles that travel along SFDB throughout the day. Consequently, the estimated ambient levels used in the EIR are highly conservative (i.e. ambient levels could legitimately be considered to range up to 87 dBA under the guidelines).

The project is expected to cause temporary increases in noise levels to generally less than 90 dBA, with a worst case scenario of 91 dBA (pages 314 – 315 of the EIR). Based on this, the EIR properly estimates that project-generated sound levels would increase to the “high” range (81 – 90 dBA), resulting in a 165-foot buffer requirement for spotted owls (USFWS 2006, page 8). However, even if the worst case scenario is applied and a project generated sound level in the “very high” range (91 – 100dBA) is assumed, then the 165-foot buffer requirement would remain valid, given the fact that ambient levels range up to 87 dBA (i.e. the project would cause an increase from “High to Very High” - USFWS 2006, page 8).

Testing results for two types of equipment used for concrete breaking and removal, including a guillotine breaker and a multiple head breaker, produce noise levels ranging from 51.6 dBA to 90.3 dBA, as measured 50 feet from the source in accordance with the USFWS guidelines (Letter Report from Christopher Piotrowski, CHA Risk Control Specialist to Antigo Construction, Inc. August 28, 2003). However, for this project, the concrete would not be removed, only cracked. In this procedure, less noise would be generated as the weight is lifted to a lower elevation and the machine operates at a lower speed resulting in typical field measurements of approximately 85 dBA. During construction, the County would monitor noise levels to assure they remain below 95 dBA measured 50 feet from the source. Mitigation Measure NOI-1a has been revised as follows to include this noise monitoring:

Mitigation Measure NOI-1a: During all construction, the project contractors shall equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers consistent with manufacturers’ standards. During construction, the County shall monitor noise levels to ensure they remain below 95 dBA measured 50 feet from the noise source.

Buffer zone planning and USFWS consultation. Mitigation Measures Bio-3a requires consultation with the USFWS if there is any evidence (from either direct observation during pre-construction surveys or from PRBO surveys in the vicinity) of spotted owl nests within

165 feet of the construction area. This consultation would include the appropriate size of buffer zones around nesting sites, as required by the USFWS.

Northern spotted owl monitoring in accordance with the draft USFWS 2010 protocols.

Monitoring in accordance with the 2010 draft protocols is not required by the USFWS, as stated on page 1 of the protocols (USFWS 2010). The draft protocols are primarily directed toward determining if northern spotted owls are present or absent from an area within which forest management activities (including timber harvesting) may occur and therefore, have limited applicability toward a road rehabilitation project. Moreover, northern spotted owls have already been verified as occurring in the vicinity of the project, as stated on 164 of the DEIR; their presence is undisputed. Therefore, the DEIR requires focused pre-construction surveys for the locations of specific nesting sites in order to avoid the potential for temporary noise disturbance during construction. The pre-construction surveys would also include all 8 trees to be removed under at the slope repair site and all 9 trees that would be removed under Option A.⁸ These survey protocols may be modified by the USFWS during pre-construction consultation.

Northern spotted owl nesting season. Mitigation Measure BIO-3b requires pre-construction surveys for nest sites to commence as early as February 15, and requires protection of active nest sites through August 30. The survey and protection period would be modified if required during consultation with the USFWS.

A4-10: The request to include the Point Reyes National Seashore on the list of agencies that would review the contractor's Traffic Management Plan is acknowledged. No further response is required.

A4-11: The Point Reyes National Seashore would be included on the list of agencies shown in Mitigation Measure TR-1. These agencies would be included in the route selection for movement of heavy equipment and truck traffic during the project construction phase. The Mitigation Measure has been revised, as follows, to include a public communications program to ensure that the public and other agencies are aware of road closure/delay information.

Mitigation Measure TR-1: For the proposed project or Option A, prior to construction, the project contractor shall submit a Traffic Management Plan (TMP) to Marin County DPW for review and approval. During construction activities, the Marin County DPW and the project contractors working on the project shall adhere to all requirements of the TMP. Implementation of a TMP would reduce potential impacts to a level of less than significant. The TMP shall include the following:

⁸ It should be noted that nesting use by northern spotted owls of any of the trees to be removed is unlikely given the trees' proximity to SFDB. Further, 4 of the 8 trees to be removed at the slope repair site are too small to provide suitable nesting sites (8 – 12 inch diameter trees).

- The route selection for movement of heavy equipment and truck traffic in the project vicinity shall be coordinated with the Marin County DPW, Marin County Sheriff's Department, and Police Department for applicable cities and unincorporated communities (Lagunitas, Forest Knolls, Woodacre, Olema, Point Reyes Station, Nicasio, San Anselmo, San Rafael, and Fairfax), State Parks, and Golden Gate National Recreation Area to minimize traffic and physical road impacts. Truck drivers shall be notified of and required to use the most direct route between the project site and US 101.
- Heavy equipment transport, material transportation, or exportation to and from the project site shall not occur during weekday commute peak traffic periods and shall be coordinated by the contractor with the Marin County DPW, Marin County Sheriff's Department, and relevant city police departments.
- Construction activities shall be coordinated with State Parks, Golden Gate National Recreation, affected cities and communities, and affected property owners to minimize disruption to local traffic.
- Construction worker parking, material storage, and construction staging areas to the extent possible shall be specified and located within the boundaries of the project site in coordination with State Parks personnel.
- Warning signs indicating frequent truck entry and exit shall be posted at the main construction points. Flaggers shall monitor and control ingress and egress of large construction vehicles to and from the site as well as lane closures.
- Debris and mud on nearby streets caused by trucks shall be monitored daily, and a roadway cleaning program shall be instituted as necessary.
- Westbound construction truck trips shall be prohibited on weekdays between the hours of 7:00 a.m. and 9:00 a.m. Eastbound construction truck trips shall be prohibited on weekdays between the hours of 4:00 p.m. and 6:00 p.m.
- A public information program shall be developed and coordinated with local agencies affected by construction activities and/or road closures. The public information program should include measures to inform the public of planned construction activities using means such as print media, radio, and/or web-based messages and information.



California Regional Water Quality Control Board

San Francisco Bay Region



Linda S. Adams
Secretary for
Environmental Protection

1515 Clay Street, Suite 1400, Oakland, California 94612
(510) 622-2300 • Fax (510) 622-2460
<http://www.waterboards.ca.gov/sanfranciscobay>

Arnold Schwarzenegger
Governor

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JUN 28 2010

MARIN COUNTY
DEPARTMENT OF PUBLIC WORKS

June 24, 2010
Site No. 02-21-C0730
CIWQS Place No. 729744

Ernest Klock
Marin County Community Development Agency
3501 Civic Center Drive, Room 404
San Rafael, CA 94903

**SUBJECT: Comments on Sir Francis Drake Boulevard Rehabilitation Project Draft
Environmental Impact Report**

Dear Mr. Klock:

Thank you for the opportunity to review and comment on the Draft Environmental Impact Report (DEIR) for the proposed Sir Francis Drake Boulevard Rehabilitation Project (Project). We previously commented on the Notice of Preparation (NOP) for the Project by letter dated November 24, 2008, and have participated in two County tours of the Project area. We also provided verbal testimony on the Project at the June 15, 2010, Board of Supervisors hearing. The comments below are consistent with our previous written and oral comments to the County.

1

We find that the DEIR does not adequately identify, evaluate and propose appropriate mitigation for several potentially significant water quality, riparian zone and in-stream habitat impacts. As detailed below, these potentially significant impacts include impacts from: tree and vegetation removal, road alignment and width changes, culvert retrofitting, drainage treatment, construction runoff and bank destabilization due to construction methods. We are particularly concerned that the Project's road re-alignment (with or without Option A) and Option A, with its proposed removal of nine trees, may have such significant impacts that our agency would find it difficult to issue the necessary approvals for this project. A Project alternative that does not include redwood tree removal to increase road and shoulder width, and does not re-align the road in locations close to the creek, would avoid numerous potentially significant impacts. Due to the impacts of the removal of large diameter redwood trees that are hundreds of years old, combined with the sensitivity of the endangered coho salmon to the potential habitat degradation of Lagunitas Creek, it is not clear that any mitigation would adequately compensate for these impacts within a reasonable timeframe. Further, if some form of mitigation were possible, we find that the mitigation as proposed in the DEIR does not adequately compensate for the potentially significant impacts.

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Lagunitas Creek provides habitat for the endangered coho salmon and the threatened steelhead. Coho populations in the Central California Coast (CCC) Environmentally Significant Unit are close to extinction, and actions to improve population viability in the freshwater phase of their life cycle are critical and urgent. Lagunitas Creek has been identified by federal resource agencies as playing a critical role in the recovery of coho in the CCC. Coho and steelhead use most of the available habitat in Lagunitas Creek for different functions at various lifestages. Therefore, it is critical that the Project not individually or cumulatively cause degradation of the creek at any of the watershed, reach or habitat unit scales. Further, Lagunitas Creek is listed as impaired under Section 303(d) of the Clean Water Act for sediment, nutrients, and pathogens. Thus, it is also essential that Project activities not cause further impairment of water quality.

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Potentially significant impacts that were not adequately addressed:

7 **1. Tree and vegetation removal:** Potentially significant impacts from tree and vegetation removal as proposed in the DEIR that affect water quality, fish habitat, and stream geomorphic function include decreased stream shade and increased air and water temperature; decreased large and small woody debris (LWD, SWD) creek input; and decreased in-stream cover, pollutant filtration, bank stability, food web dynamics, riparian zone lateral and longitudinal connectivity, and riparian zone vigor, genetics and health. As mentioned above, the impacts resulting from the removal of large diameter redwood trees may not be able to be adequately mitigated within an acceptable timeframe. For the DEIR analysis, the scale of analysis is important and should occur at the each of the watershed, reach and habitat unit scales. For the loss of large diameter redwood trees, the impacts should be evaluated for each individual tree removed, as well as the cumulative impact of their removal.

8 **a. Salmonid and stream water quality, habitat and geomorphic impacts:** The DEIR identifies three potential impacts to salmonids from post-Project changes in riparian habitat as: 1) erosion; 2) loss of stream shade; and 3) loss of LWD (Appendix E, p.62). Comments on these impacts are as follows:

- 9**
- **Erosion:** The erosion discussion focuses on erosion reduction from the slope repair at Station 270+25. There is no discussion of additional impacts. Tree and vegetation removal in other areas may lead to stream bank, stream terrace, and floodplain bench instability, and therefore lead to increased erosion and loss of habitat. This is particularly significant where redwood trees are to be removed. The DEIR should identify which trees in Option A may potentially impact bank/soil stability if removed and evaluate how this would be mitigated, if possible.
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- **Loss of stream shade:** The DEIR includes a qualitative analysis of shade and temperature impacts and finds that these impacts are less than significant. However, we did not find adequate quantitative data in the DEIR and appendices to support this finding. The analyses in the appendix do not present or reference relevant supporting materials including: the method for determining the amount and timing of shade (daily and seasonally); a discussion of the variables included in the impact analyses (i.e., water and air temperature, distance of individual trees from top of creek, existing and future canopy cover); and the method used to integrate data and make a "no impact finding". In addition to the permanent loss of trees due to road features, this analysis should include an evaluation of the loss of shade due to temporary loss of riparian canopy resulting from construction. We could not locate a discussion of the predicted magnitude or location of these impacts; they should be evaluated. Further, the DEIR should evaluate the impacts from shade loss and water temperature that may result algal blooms. Lagunitas Creek is listed as impaired for excess nutrients, and any reduction in shade may exacerbate this situation, potentially degrading water quality through increased algal blooms at the habitat unit or stream reach scale. Salmonids are very sensitive to temperature increases and decreases in oxygen levels that may result from algal bloom die-off.
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- 12**
- 13**
- **Loss of Large Woody Debris:** In the DEIR, the loss of LWD is identified as a significant adverse impact to salmonids. We concur with this finding. However, as described below, the extent of the impact and mitigation adequate to reduce the impact to less than significant have not been adequately determined. The mitigation measure proposed for this in the DEIR (Bio-9) is to provide "suitable cuttings from tree removal work for use as bioengineered structures. The signatories of the Lagunitas Creek MOU for Woody Debris Management in Lagunitas Creek will be notified of the availability of the LWD. If they do not respond within 14 days of notification, Marin DPW will dispose of the LWD in a legal manner".

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We do not find that this is an adequate mitigation, and there is no certainty that cuttings will either be used as LWD, or, if used, the cuttings will be suitable LWD. When large trees fall into a creek, they perform a unique role of locally altering creek geomorphology and typically providing beneficial salmonid habitat for many life stages. In the DEIR, there is a lack of specificity in the mitigation measure: there is no discussion of the magnitude or type of the LWD replacement (i.e., number of structures, type of structures, location), timeframe for placement, or intended functions the LWD will perform. Additionally, there is no discussion of the quality of LWD to be provided. LWD sections must be a certain length to be useful, and they provide better habitat with the rootwad attached. The removal of trees under Option A would represent a very large volume of potential LWD. Placing this LWD into the creek in bioengineered structures would be expensive and time consuming. If mitigation for this loss is possible, it must include a serious financial and contractual commitment by DPW and the agency placing the LWD. We are aware that in previous road clearing work, the County has not had adequate equipment to handle the cutting and transport of the large log sizes and rootwads that are preferential for LWD structures. This equipment can be expensive to rent and operate, and can require additional road closures. Storage sites with appropriate access may not be available. All of these considerations must be evaluated to determine the feasibility of the proposed mitigation measure.

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b. Riparian zone functions: The following riparian zone functions are not adequately considered in evaluating potential Project impacts. Impacts to these functions should be identified, evaluated and mitigated if necessary:

- Riparian trees support the stream food web through the input of SWD, detritus, and terrestrial insects falling into the stream;
- The riparian zone (including duff from redwood trees) functions to filter pollutants; and
- Large individual redwood trees function in a riparian zone to maintain soil permeability, lateral and horizontal connectivity with the stream ecosystem, and riparian zone vigor, health and genetic diversity.

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c. Mitigation measure Bio-9:

- The number and size of trees proposed for mitigation may be adequate for the small diameter bay trees; however, we do not think this mitigation ratio is adequate for the temporal losses of the redwood or large bay and should be re-evaluated;
- Slope repair tree losses: Bio 9a states that tree replacements would occur in the Lagunitas Creek watershed if possible. Further, if a suitable site cannot be located for replanting, Marin DPW may contribute financially to the Marin County Tree Preservation fund. Due to the importance of the Lagunitas Creek watershed in the role of restoring coho populations and maintaining steelhead, to appropriately mitigate impacts to less than significant, tree replacements must occur within the watershed. Further, the minimum amount of funding should be specified, and what could be accomplished with this funding should be evaluated;
- One site that is being considered for mitigation planting is the site of a Marin Municipal Water District (MMWD) retaining wall that was constructed on an emergency basis to protect MMWD's water pipeline. The appropriateness of including in the Project mitigation for impacts from a MMWD project, rather than having MMWD conduct the mitigation, should be evaluated; and
- Marin DPW will provide an unspecified financial contribution to MMWD to support its invasive exotic vegetation management and/or native plant revegetation program in the watershed. The amount of funding, and what could be accomplished with this funding should be specified.

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d. Cumulative Impacts from Tree Removal: Appendix F, Tree Inventory, identifies over 90 trees that are either structurally unstable or affected by Sudden Oak Death and should be removed. This potential future cumulative impact should be evaluated with respect to the Project's proposed removal of trees.

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2. Road alignment and width changes: The Project includes changes to the existing road's alignment and width. The DEIR does not specify how close this would bring the road and its shoulders to the creek and does not evaluate the impacts that would result from these road changes. In many locations where the road has a 100-foot or more setback from the creek, these impacts would most likely be minor, provided that tree removal is not necessary. However, in locations where the road is already close to the creek, and there is already an inadequate buffer between the road and creek, these changes would be significant impacts. In addition to the direct water quality impacts from a reduced buffer width, we are concerned about impacts associated with short and long-term bank stability, including bank instability due to long-term creek meandering. Potentially significant impacts could occur if the banks required rip-rap protection, in the short or long-term, to either protect the road or reduce bank erosion induced by the closer proximity of the road. Rip-rap frequently fills in stream habitat, eliminates riparian vegetation and degrades stream habitat quality. The DEIR should describe how the Project will avoid creating new bank instabilities, since the placement of rip-rap would constitute a significant impact to salmonid habitat and would not be acceptable as a mitigation measure.

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3. Culvert replacement: The Project will change the hydrologic function of many culverts by increasing their size to handle the projected 100-year flow. However, a few larger culverts are not being re-sized to the 100-year flow standard. The larger tributaries are most likely to present the highest risk for sediment and debris blockage. The potential impacts of not adequately resizing these culverts should therefore be identified and evaluated.

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Further, in our comments on the NOP, we stated that, "all culverts should be evaluated for restoring natural watershed processes, including sediment and debris transport." This is important because the Water Board's preliminary sediment budget for Lagunitas Creek indicates that the supply of beneficial cobbles and gravels reaching the creek is reduced from historic conditions and may impair salmonid habitat quality in the long-term. This reduction in supply of beneficial cobbles and gravels is due both to dams and to the system of culverts that cut-off the creek from the watershed's sediment supply. The DEIR should include an evaluation of how resizing the culverts, altering the slope of culverts, and/or other measures, can better promote sediment transport through the culverts, rather than relying on regular maintenance to clean sediment and debris from the culverts. We are aware that in many cases restoring the natural transport of sediment may be technically or financially infeasible. However, its feasibility should be evaluated and the impacts of culvert blockage and inadequate sediment and debris transport identified.

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Culvert erosion: In many locations, the current placement of culvert downspouts draining Sir Francis Drake Boulevard has actively caused significant erosion. The DEIR indicates that this erosion will be reduced through the use of rip-rap and other forms of energy dissipation. We concur that the erosional energy of these culverts must be dissipated. However, the potential impacts of rip-rap were neither identified nor evaluated. Further, it appears that in several instances "shot-gun" culverts will remain, with only energy dissipaters used to attempt to dispel erosional forces. Generally, shot-gun culverts are not acceptable due to their resultant high erosional energy that is very difficult to adequately dissipate. We were informed in our field tour that these culverts would not be replaced in-part due to right-of-way concerns. However, the property is owned by the State Parks, and therefore this should not preclude the installation of adequate culvert retrofits. Additionally, a number of these culverts, which are owned and operated by the County, have created large erosional gullies discharging directly to Lagunitas Creek. The DEIR does not indicate whether the proposed retrofit measures and energy dissipaters will fully arrest the incisional process in these gullies. If this is not the case, additional measures should be evaluated.

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4. Increase in Total Impervious Area (TIA): The DEIR (p.195) discusses the impact of a change in discharge volume on a stream-wide basis, but does not evaluate the potential local impacts of increased discharge volume resulting from increased TIA. These impacts include increased erosion from culvert discharges (see culvert discussion above) and localized increases in stream discharge and velocity. The Lagunitas Creek Limiting Factors analysis has indicated that the limiting factor for coho salmon freshwater lifecycle productivity in Lagunitas Creek is winter conditions. Coho and steelhead juveniles, and newly emerged fry, are particularly sensitive to high winter velocities. Increased discharges that may alter stream velocities should not occur in sensitive areas of the creek such as areas near redds or predicted winter rearing habitat. If this is unavoidable, mitigation measures such as LWD velocity breaks should be evaluated.

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5. Road pullouts: The Project as proposed would remove or close many existing pullouts and provide new paved pullouts. Our concerns related to this are the following:

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- Drainage improvements to the proposed paved pullouts: the new pullouts will be paved with permeable asphalt with a subsurface perforated drainage pipe in-part, "to limit sediment discharges from these pullouts." These drainages will be piped to the nearest culvert and add to the discharge volume of the culvert. As noted above, the DEIR (p.195) discusses the impact of a change in discharge volume on a stream-wide basis but does not evaluate the potential local impacts of increased discharge volume. An increase in discharge volume can cause erosion regardless of the energy dissipation method used, depending on the culvert location, slope, and soil type. Further, the DEIR discusses use of an orifice or weir to reduce discharge rate. The adequacy of weirs or orifices to control discharge rate during storms, while still providing adequate drainage, should be evaluated.

28

- The potential for water quality impacts from these paved pullouts' runoff should be evaluated. As proposed, the runoff will not receive any form of water quality treatment. On a site by site basis, where there is an adequate vegetated buffer strip between the pullout and the creek, sheet drainage may provide better water quality treatment for sediment and roadway contaminants than the proposed drainage system.

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- The impact to tree roots of the increased pavement should be evaluated.

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- The impact of closing existing pullouts on creek visitor usage patterns and the potential for increased impacts due to changed usage patterns is not evaluated. The Water Board has had the erosion impact of the existing "social trail" and pullout network qualitatively evaluated from Shafter Bridge to the State Park campground. Pacific Watershed Associates' (PWA) qualitative evaluation indicated that these trails and pullouts contributed relatively little sediment to the creek and was a minor erosion concern relative to other erosion problems delivering significant amounts of fine sediment to the creek (personal conversation with John Green, PWA consultant). Currently visitors spread out throughout the park on existing legal and social trails. The closing of pullouts may result in the need for new or expanded legal parking areas and trails, and the potential impacts of these new or expanded areas and trails should be evaluated.

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6. Wetland impacts and bioswales: The Project as proposed would replace the existing road drainage system, including isolated wetlands, with a series of vegetated bioswales that would contain perforated drainage pipe below a layer of permeable soil. This is expected to function like a sand filter. In many areas where there are steep hillslopes and significant sediment sloughs onto the road and the existing drainage ditch, the County's maintenance currently includes excavating the existing ditches to maintain their capacity. Due to this on-going sloughing process, the long-term ability of these swales to function due to losses in soil permeability and on-going maintenance issues should be evaluated. If these swales do not function as designed, they may reduce the road drainage system's ability to function and have unanticipated erosion and other water quality impacts. The DEIR indicates that the bioswales will function to reduce toxic metal

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leachates associated with asphalt (p.196). This is predicated on the assumption that the swales will function as unclogged, porous sand filters. Additionally, the Kleinfelder Geotechnical Investigation (Appendix H) indicates that the Project site has an inherent risk of site settlement or the occurrence of slope instability, and that it is critical that the drainage features be designed and maintained properly. The proposed mitigation measures include a maintenance and monitoring program for system performance. It is not clear what kind of maintenance and monitoring will be technically and economically feasible in light of the large amount of sloughing that occurs. Therefore, this should be analyzed as part of the DEIR process to determine the suitability of bioswale use in this setting.

32

7. Road construction materials: The DEIR proposes to use Rubberized Asphalt Concrete (RAC) as a road material. However, in the public hearing on June 15, 2010, County staff indicated that this would not be used. The materials to be used for road base must be clearly presented and any water quality impacts associated with their use identified and evaluated.

33

8. Bank stability during construction: The Kleinfelder Geotechnical Investigation in Appendix H assesses the risk of liquefaction due to construction impacts. It concludes that the "locations that pose the highest risk for liquefaction induced settlement or slope deformations are near the creek crossings and in areas where the roadway is located immediately adjacent to the creek" (p.19). It indicates that potential for this occurring is highest during earthquakes but can occur during construction activities, such as blasting or pile installation. The possibility of bank destabilization occurring due to the proposed "crack and seat" method is not discussed. This should be explicitly evaluated in areas where the road is in close proximity to the creek bank. If it is determined that there is a potential for slope instability in these locations, more advanced geotechnical reconnaissance and design work should be done as part of the DEIR process, prior to construction, to insure that the proper methods of demolition and construction are planned and proper equipment is available. Relying mainly on field inspection during construction does not adequately insure that construction impacts will not occur.

34

9. Water quality impacts from stormwater and non-stormwater construction discharges:

- **Construction timing:** We could not locate a timeline for different construction activities to determine the full range of potential impacts. Appendix E indicates that construction will take nine months. It is unclear what activities will be occurring during the rainy season and their location to the creek; potential impacts due to construction should be evaluated based on the season they are expected to occur.
- **Discharges to waters of the State:** The DEIR indicates that the County will apply for coverage under the statewide General Permit for construction stormwater discharges and a stormwater pollution prevention plan. As part of the preparation of this plan and the implementation of discharge controls, the County should recognize that the receiving water risk for the Project would be "high" under the General Permit, due to the presence of the endangered coho and other salmonids in the creek and their sensitivity to pollutant discharges.
- **Turbidity and sediment discharges from dewatering water:** As Lagunitas Creek is listed as impaired for sediment, we anticipate not permitting dewatering discharges with turbidity above background. Due to the sensitivity of salmonids to pollutants, it is unlikely that coagulants will be an acceptable treatment method, unless it can be demonstrated to have no impacts. If turbidity cannot be lowered through settling and filtration, the County should be prepared to have an alternate method for dewatering water disposal rather than allowing discharges to the creek. Alternates and their feasibility should be included in the DEIR.

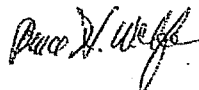
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Thank you for the opportunity to comment on the DEIR and for the site tours provided by County staff. We look forward to working with the County to resolve the environmental challenges posed by the Project. If

you have any questions on these comments, please contact Leslie Ferguson at (510) 622-2344 or via e-mail at lferguson@waterboards.ca.gov, or me at (510) 622-2314 or via email at bwolfe@waterboards.ca.gov.

Sincerely,



Bruce H. Wolfe
Executive Officer

Digitally signed
by Bruce Wolfe
Date: 2010.06.24
18:45:29 -07'00'

COMMENTER A5

Regional Water Quality Control Board; Bruce H. Wolfe, Executive Officer, San Francisco Bay Region (June 24, 2010)

- A5-1: The comment that the Draft EIR does not adequately identify, evaluate and propose appropriate mitigation measures for several significant water quality, riparian zone, and in-stream habitat modification impacts is acknowledged. This comment provides a general statement regarding the comments that follow. Please see the responses to the comments below.
- A5-2: The comment that the agency would find it difficult to issue the necessary approvals for this project is acknowledged. While permits would be necessary to implement the project, the permitting process is separate from the CEQA approval process. This comment relates to the merits of the project and not to the adequacy of the EIR. Therefore, no further response is required under CEQA. Please see Master Response 1.
- A5-3: The comment that a project alternative that does not include redwood tree removal or realignment of the road in areas close to the creek to avoid numerous potentially significant impacts is acknowledged. This comment relates to the merits of the project as proposed and not to the adequacy of the EIR. Therefore, no further response is required under CEQA. Please see Master Response 1.
- A5-4: The authors of the EIR and the County respectfully disagree with this comment. The Draft EIR clearly articulates the potential impacts associated with construction and operation of the proposed roadway rehabilitation project and provides mitigation measures to reduce these impacts to a less than significant level. With the clarifying information provided in this Response to Comments and the mitigation measures provided in the Draft EIR, potentially significant impacts resulting from the proposed project would be reduced to a level below significance.
- A5-5: The comment that Lagunitas Creek provides habitat for endangered coho salmon and the threatened steelhead is acknowledged. The Draft EIR (pp. 166-168) recognizes the importance of Lagunitas Creek as habitat for special status fish species. Potential impacts to these species are addressed on pp. 187-200 and mitigation measures are identified to reduce potential impacts to a less than significant level. Please see Master Response 9 for more information related to salmonids.
- A5-6: The comment that Lagunitas Creek is listed as impaired under Section 303(d) of the Clean Water Act is acknowledged. The Draft EIR (pp. 253) recognizes that the creek is on the 2006 CWA 303(d) list due to nutrients, pathogens, and sedimentation/siltation. Mitigation Measures HYD-1a and HYD-1b (Draft EIR pp. 265-269) include measures that would prevent the project from causing future impairment of water quality. No changes to the Draft EIR are required.
- A5-7: Please see Master Response 6.

A5-8: Please see Master Response 6.

A5-9: The authors of the EIR and the County do not expect any of the tree removal described in Option A to cause bank instability and new sources of erosion. Page 197 of the Draft EIR states: “the removal work is not expected to generate new sources of erosion and sedimentation. The remnant root systems below the tops of bank should continue to serve in a bank holding capacity for several decades as redwood roots are very resistant to decay.”

A5-10: The authors of the DEIR and the County believe that the detailed, quantitative study requested by the RWQCB far exceeds the level of analysis and data collection warranted under CEQA guidelines for the level of potential impact associated with the proposed tree removal. Rather, the qualitative analysis conducted for the DEIR provides an adequate basis for assessing possible impacts and suitable mitigation measures. As described on pages 205 - 207 of the DEIR, the tree removal was determined to have the potential to cause locally significant impacts on bird habitat, stream shading, ground shading – invasive exotic plant colonization, and large woody debris contribution to Lagunitas Creek. However, as the DEIR states on page 206: “Relative to the large number of trees occurring along the SFDB corridor (1,368 trees with diameters of 6 inches or greater were surveyed within 20 feet of the pavement) and the vastly greater number of trees occurring in the adjacent woodland and forest communities on either side of SFDB, the loss of nine trees under Option A and eight trees at Station 270+25 would not likely result in any of the above impacts being biologically significant on a watershed basis.” A more detailed quantitative analysis, as requested by the RWQCB comment would certainly provide a more precise accounting of each localized impact of each individual tree removal, but would not change the overall conclusion that impacts are locally significant, but would not be significant on a watershed basis. See also Master Response 9 with regard to the adequacy of the mitigation for the localized impacts of tree removal.

A5-11: The proposed project is not expected to cause any temporary loss of tree canopy. However, should tree trimming be required as part of construction activities, Mitigation Measure BIO-3b(d) requires that any tree trimming be conducted according to arborist guidelines to ensure tree survival. No changes to the Draft EIR are required.

A5-12: Please see the prior response to Comment A5-10.

A5-13: Under Mitigation Measure BIO-9b, the PWD would make tree removal cuttings available for use as large woody debris and in-stream bio-engineered structures in Lagunitas Creek. The MMWD would be the likely recipient of such cuttings. As part of this effort, PWD would ensure that MMWD’s specifications are met as to number, sizes and types large woody debris. The PWD would notify the MMWD as early as possible as to the potential availability of cuttings in order to coordinate the timing and delivery locations of cuttings. The RWQCB’s request for specific financial and contractual commitments for the tree cutting work is noted. Specific financial and contractual commitments would be made at the time that work is being scheduled, based on the final number of trees to actually be removed (i.e.,

- if the Option A tree removal work is implemented) and the needs of the MMWD at that time. No change to the Draft EIR is warranted.
- A5-14: The comment correctly ascribes potential biological and water quality functions generally associated with redwood trees growing along a creek corridor. Mitigation Measures BIO-9a and 9b would mitigate for the loss of redwood trees and associated functions. Please see the prior response to Comment A5-10 and Master Response 6.
- A5-15: The authors of the DEIR and the County agree that the 3:1 tree replacement ratio alone does not adequately address the temporal impacts from the loss of trees. For this reason, the DEIR includes additional mitigation measures to compensate for tree loss. Mitigation Measure BIO-9b requires project financial support to MMWD *Mount Tamalpais Watershed Gateway Project*, allowing for additional riparian habitat enhancement work to occur within the watershed. Mitigation Measure BIO-9b requires providing cuttings for use as LWD and in bio-engineered structures along Lagunitas Creek as recommended under the *Memorandum of Understanding for Woody Debris Management in Riparian Areas of the Lagunitas Creek Watershed* (2007).
- A5-16: Please see Master Response 6.
- A5-17: If an in-lieu financial contribution is made under Mitigation Measure BIO-9a to the Marin County Tree Preservation Fund, then the funding amount and ultimate direction of the funds would be made in accordance with the County's in-lieu fee requirements at that time. The comment that the funding should be directed toward replanting in the Lagunitas Creek watershed is noted.
- A5-18: This comment is incorrect in suggesting that the proposed Peters Dam tree replanting site (under Mitigation Measure BIO-9a) is actually mitigation for a separate MMWD project. The proposed planting is not required as mitigation for any MMWD project; it would serve solely as mitigation for tree removal under the SFDB Rehabilitation project.
- A5-19: Please see Master Response 6.
- A5-20: Please see Master Response 8.
- A5-21: Please see Master Response 4.
- A5-22: Please see Master Response 3.
- A5-23: Please see Master Response 3.
- A5-24: The comment expresses concern regarding erosion at the existing culverts and the potential for the proposed project to correct existing erosion problems. If a "shot-gun" culvert is located within 20 feet of the edge of the roadway, the project would add an elbow to align it with the existing slope. If the toe of slope is within 30 feet of the edge of the road, the culvert would be extended to the base. Localized erosional gullies would be backfilled with soil,

erosion control fabric would be placed, and vegetation would be planted. In certain locations, especially in locations where the culvert discharges on a slope, level spreaders or similar devices to limit the concentration of flow may be installed. The use of riprap is only proposed in two locations where culverts discharge outside the banks of Lagunitas Creek; riprap is also proposed to be placed below the retaining wall at the roadway's edge, as part of the slope repair at approximate station number 270+25. The proposed placement of riprap is consistent with County policy that discourages the placement of riprap within salmonid fish streams. Under the proposed project, the use of riprap would be limited to the maximum extent feasible (three locations) to repair existing erosion conditions and reduce sedimentation, which affect the habitat quality of Lagunitas Creek. Therefore, impacts resulting from hardening the stream channel (placement of riprap) would be considered less than significant.

A5-25: Sir Francis Drake Boulevard is located in an extremely large watershed. Much of this watershed discharges to Lagunitas Creek through 72 individual culverts along the roadway. The Draft EIR (pp. 260-262) evaluates the change in peak flow rates resulting from the project for the 2-year and 10-year storm events at each of the culverts along the roadway where the project would contribute runoff. The analysis shows that the change in peak flow rates due to the project is less than a 1 percent at each location. In addition, Impact HYD-1 (pp. 265-269) addresses increased pollutant loading resulting from increases in impervious area and stormwater runoff volumes, and proposes water quality improvement measures to mitigate adverse impacts (Mitigation Measure HYD-1b, p. 269). The water quality improvement measures would also reduce peak flow rates of runoff entering the creek. Although the total increase in runoff volume would likely have little local impact on in-stream erosion given the size of the existing contributing watershed, the text for Mitigation Measure HYD-1b has been revised. These revisions require an evaluation be conducted during the project design phase to assess the need to incorporate flow duration control measures into the water quality improvement measures in order to manage the increased runoff volume in a manner that does not increase in-stream erosion and protects in-stream habitat. Mitigation Measure HYD-1b has been revised as follows:

Mitigation Measure HYD-1b: As part of project implementation, the County shall implement the following ~~three~~ five water quality improvement measures:

1. The County shall install a permeable layer, as the top surface layer above impervious rubberized asphalt concrete on all paved road sections. Runoff exiting the permeable friction course shall be designed to sheetflow on the underlying impervious asphalt concrete and discharge into the nearest storm drain inlet, culvert, or directly over the outboard edge of the road.
2. Pullout areas shall be designed with permeable asphalt to allow stormwater to percolate through the asphalt and be collected in an under drain that would be routed to discharge at the nearest existing roadway culvert.
3. In locations where the road slopes toward Lagunitas Creek and there is adequate space, a vegetative buffer strip shall be established adjacent to the road. The buffer strip vegetation shall be indigenous to Marin County and shall also be suitable for erosion control. The buffer shall be protected from vehicle traffic and

illicit parking by placement of a barrier (e.g., guardrail, boulders) between the road and the buffer.

4. In locations where the road slopes toward the hillside and away from Lagunitas Creek, a vegetated swale with permeable backfill underneath that would function like a sand filter shall be installed, where feasible. A perforated pipe shall be installed within the permeable backfill to direct infiltrating runoff to the nearest culvert; the underdrain shall reduce the ponding of water that inundates the road during significant storm events. The bioswale vegetation shall be indigenous to Marin County and shall also be suitable for erosion control. Swales/sand filters shall not be installed in locations of freshwater emergent wetlands (to preserve the wetlands).
5. The need for the water quality improvement measures to be designed for flow duration control shall be evaluated in the project design phase. Pre- and post-project flow duration curves shall be generated using a hydrologic model that analyzes a long-term time series of precipitation data to generate the cumulative frequency of in-stream flows of a certain magnitude for the full distribution of flows up to the pre-project 10-year peak flow rate. Flow duration control shall be implemented if pre- and post-project flow duration curves deviate by more than 10 percent over the length of the flow duration curve; subsurface storage shall be provided within the water quality treatment measures, and the outlet shall be designed to discharge the increase in runoff volume resulting from the project at a rate that does not increase in-stream erosion.

A5-26: A typical proposed pullout area is approximately 0.05 acres, which would generate approximately 0.15 CFS of flow during the 10-year event. This flow rate would be an increase over the existing condition of 0.11 CFS but more importantly, would concentrate runoff at the subdrain outlet from the current condition of sheet flow. As discussed in the Project Description, the project would implement a flow control device such as an orifice to limit the discharge rate using the voids in the permeable material for stormwater storage. The effectiveness of flow control devices would be evaluated in the project design phase. The ultimate design would comply with the flow mitigation controls described in mitigation measure HYD-1b; please refer to the response to Comment A5-25, for a discussion of how the text in mitigation measure HYD-1b has been revised to incorporate a flow duration control performance standard for the water quality treatment measures.

A5-27: If a flow control device such as a weir or orifice is used, the asphalt dike as shown in the Project Description would likely not be installed. Should the storage capacity contained within permeable material be exceeded, runoff would be directed by sheet drainage from the pullout area preventing inundation. Please also refer to the responses to Comments A5-25 and A5-26.

A5-28: As shown in the EIR, the proposed pullout areas would be constructed using permeable materials allowing storm water to filter capturing pollutants prior to discharge. The use of permeable paving is an accepted best management practice used in the San Francisco Bay Area to promote storm water quality, and the benefits for removing particulate pollutants and

reducing peak flow rates would be similar to vegetated buffer strips. We agree that sheet drainage to a vegetated buffer would provide a water quality benefit simplifying installation and maintenance. During permitting, the County proposes to collaborate with the RWQCB to implement safe all weather accessible pullout areas that mitigate increases in peak flow rates and improve stormwater quality as defined in mitigation HYD-1b. Please also refer to the responses to Comments A5-26, and A5-27.

A5-29: Please see Master Response 7.

A5-30: Locations within the project area that are currently used by some motorists to pull off the roadway to allow other vehicles to pass or to park for an unspecified duration of time were not designed or intended to be used as pullouts and/or parking. In fact, at some locations parked vehicles eliminate the availability of these areas to be used as a pullout by slower traffic and parked cars sometimes occupy part of the travel lane. Vehicles pulling off the roadway at locations with poor sight distance and/or inadequate dimensions to accommodate the vehicle increase the risk of an accident while entering, leaving, and occupying the space. Likewise, vehicles parked at these locations eliminate the opportunity for slower moving traffic to pull over and allow the normal flow of traffic to pass. Vehicles parked at these locations result in an undesirable situation where vehicles behind a slow moving vehicle may attempt to pass on a narrow roadway with short sight distances.

The proposed project would construct formalized pullouts along the roadway within the project area, and would prohibit vehicle parking at these locations with posted "No Parking" signs. Formalizing pullouts and prohibiting parking is expected to improve the flow of traffic along the roadway and to significantly reduce the risk of accidents when slower moving vehicles pull over to allow the normal flow of traffic to pass. Locations along the roadway currently used by some motorists for parking were never intended or planned as parking spaces. Therefore, the design measures that would be taken to eliminate the use of these areas for parking would not increase the need for new visitor parking spaces in the State Park. Visitor parking is already provided in the park at locations that provide safe ingress and egress with easy access to hiking and bicycle trails. Individuals that have used existing informal areas to park their vehicles in the past may find the proposal to eliminate the use of these areas for vehicle parking as inconvenient, but the proposed project would not create the need to provide additional parking spaces within the park.

A5-31: Please see Master Response 11.

A5-32: Please see Master Response 2.

A5-33: As part of the Geotechnical Investigation (see Appendix H of the Draft EIR), Kleinfelder has stated that use of the crack and seat technique is feasible provided geotechnical monitoring is conducted during construction. It would be extremely difficult and costly to perform a soil investigation along the corridor in order to properly characterize subsurface conditions at sufficient detail to predict stability during the cracking operation. The project would include a provision that the cracking operation would commence at a selected location of sufficient distance from the creek's banks to evaluate vibration and soil response. If the geotechnical

engineer believes that the cracking operation could de-stabilize the bank, the contractor would be directed to saw cut the concrete roadway in rectangular shaped slabs. As required by Mitigation Measure GEO-2 (page 246 of the Draft EIR), a qualified professional shall observe soil conditions in the field during the rehabilitation process. The potential for bank destabilization resulting from the cracking operation would be assessed as part of this geotechnical monitoring.

A5-34: Please see Master Response 5.

A5-35: The comment that the receiving water risk for the proposed project would be “high” under the General Permit, due to the presence of the endangered coho and other salmonids in the creek and their sensitivity to pollutant discharges is acknowledged. This comment relates to the permitting process, which would be conducted separately from the CEQA approval process. No change to the Draft EIR is required.

A5-36: Excavation below the ground water elevation is not expected to be required. Thus, dewatering would likely not be necessary. If dewatering is required, the County would work with the Regional Water Quality Control Board (RWQCB) to ascertain if an active treatment system would be required, and whether the numeric effluent limitations for active treatment systems in the Construction General Permit (Order No. 2009-0009-DWQ) would apply to the project, or if the RWQCB has additional project-specific requirements for limiting the turbidity from dewatering operations. If an active treatment system is used, the County would conduct the residual chemical and toxicity tests using the protocols required in the Construction General Permit, to demonstrate that added coagulants would not be toxic to aquatic organisms. As an alternative, collected groundwater would be pumped into trucks, removed from the site, and disposed of in accordance with appropriate regulations.



STATE OF CALIFORNIA

GOVERNOR'S OFFICE of PLANNING AND RESEARCH

STATE CLEARINGHOUSE AND PLANNING UNIT

ARNOLD SCHWARZENEGGER
GOVERNORCYNTHIA BRYANT
DIRECTOR

June 28, 2010

RECEIVED

JUL 02 2010

MARIN COUNTY PUBLIC WORKS

David Bernardi
Marin County Community Development Agency
3501 Civic Center Drive, Room 308
San Rafael, CA 94903

Subject: Sir Francis Drake Boulevard Rehabilitation Project
SCH#: 2008112004

Dear David Bernardi:

The State Clearinghouse submitted the above named Draft EIR to selected state agencies for review. On the enclosed Document Details Report please note that the Clearinghouse has listed the state agencies that reviewed your document. The review period closed on June 25, 2010, and the comments from the responding agency (ies) is (are) enclosed. If this comment package is not in order, please notify the State Clearinghouse immediately. Please refer to the project's ten-digit State Clearinghouse number in future correspondence so that we may respond promptly.

Please note that Section 21104(c) of the California Public Resources Code states that:

"A responsible or other public agency shall only make substantive comments regarding those activities involved in a project which are within an area of expertise of the agency or which are required to be carried out or approved by the agency. Those comments shall be supported by specific documentation."

These comments are forwarded for use in preparing your final environmental document. Should you need more information or clarification of the enclosed comments, we recommend that you contact the commenting agency directly.

This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act. Please contact the State Clearinghouse at (916) 445-0613 if you have any questions regarding the environmental review process.

Sincerely,

Scott Morgan
Acting Director, State Clearinghouse

Enclosures
cc: Resources Agency

Document Details Report
State Clearinghouse Data Base

RECEIVED

A6

JUL 02 2010

MARIN COUNTY PUBLIC WORKS

SCH# 2008112004
Project Title Sir Francis Drake Boulevard Rehabilitation Project
Lead Agency Marin County

Type EIR Draft EIR
Description NOTE: Review Per Lead

A section of Sir Francis Drake Boulevard located about one mile west of the Town of Lagunitas between Shafter Bridge and Platform Bridge Road contains segments of severely deteriorated pavement that has exceeded its design life. Without major rehabilitation, the roadway's condition will likely further deteriorate as cracks in the pavement allow water to infiltrate weakening the sub grade and creating additional distress.

Lead Agency Contact

Name David Bernardi
Agency Marin County Community Development Agency
Phone (415) 499-7864
email
Address 3501 Civic Center Drive, Room 308
City San Rafael
State CA **Zip** 94903
Fax

Project Location

County Marin
City
Region
Lat / Long 38° 1' 7.07" N / 122° 43' 53.3" W
Cross Streets Shafter Bridge to Platform Bridge
Parcel No.
Township
Range
Section
Base

Proximity to:

Highways 1
Airports
Railways
Waterways
Schools
Land Use A-60, Agriculture & Conservation District, 60-acre minimum lot size; O-A State Park Land

Project Issues Aesthetic/Visual; Agricultural Land; Air Quality; Archaeologic-Historic; Biological Resources; Coastal Zone; Cumulative Effects; Drainage/Absorption; Flood Plain/Flooding; Forest Land/Fire Hazard; Geologic/Seismic; Growth Inducing; Landuse; Minerals; Noise; Population/Housing Balance; Public Services; Recreation/Parks; Schools/Universities; Sewer Capacity; Soil Erosion/Compaction/Grading; Solid Waste; Toxic/Hazardous; Traffic/Circulation; Vegetation; Water Quality; Water Supply; Wetland/Riparian; Wildlife

Reviewing Agencies Resources Agency; California Coastal Commission; Department of Fish and Game, Region 3; Office of Historic Preservation; Department of Parks and Recreation; Department of Water Resources; California Highway Patrol; Caltrans, District 4; Air Resources Board, Transportation Projects; Regional Water Quality Control Board, Region 2; Department of Toxic Substances Control; Native American Heritage Commission

Date Received 05/10/2010 **Start of Review** 05/10/2010 **End of Review** 06/25/2010

COMMENTER A6

State of California, Governor's Office of Planning and Research, State Clearinghouse; Scott Morgan, Acting Director (June 28, 2010)

A6-1: This letter acknowledges that the County of Marin has complied with the State Clearinghouse review requirements for draft environmental documents. This letter does not relate directly to the adequacy of the Draft EIR or the analysis contained therein. Therefore, no further response is necessary.

4.2 ORGANIZATIONS

California Native Plant Society

June 25, 2010

Mr. Dave Bernardi
Marin County Department of Public Works
3501 Civic Center Drive
San Rafael, California 94903

Dear Mr. Bernardi:

The following comments are submitted on behalf of the Marin Chapter of the California Native Plant Society (CNPS) regarding the Draft Environmental Impact Report (DEIR) for the *Sir Francis Drake Boulevard Rehabilitation Project*, prepared by LSA Associates, Inc. (LSA) (2010).

1

It is CNPS's opinion that the botanical sections of the DEIR, partly based on the Biological Assessment by Synthesis Environmental Consulting (2009) (Appendix E) and a rare-plant survey report by Molly Boyes Botanical Consulting (MBBC) (Proposed Road Repaving and Shoulder Expansion, Samuel P. Taylor State Park, 2009) are poorly presented with many inconsistencies and mistakes.

2

3

Plant Communities

The descriptions of plant communities occurring along the alignment are general descriptions of the communities and do not, to a large extent, refer to the project area, *i.e.*, the area that will be impacted by the project. Species observed are presented in a highly unusual and confusing manner, *i.e.*, listed without regard for groups of plants such as ferns, annuals, etc., and without noting whether the species are *native* or *non-native*. Species are listed in alphabetical order by scientific name and, if the scientific name has been used in earlier sections, interspersed alphabetically by the common name of a plant. This presentation leaves the reader with a jumble of species with no sense of sub-communities or associations, nor whether the vegetation consists of native or non-native species, or if it occurs in the area to be impacted. Under *Annual Grassland*, 46 species are listed, 20 of which (44 %) are native. The statement that "This plant community is generally composed of introduced grasses and broadleaf weedy species..." obviously does not apply to the site and should have been qualified with information applicable to the project.

4

It is CNPS's opinion that species within the area to be impacted should be listed and evaluated, not species within the general plant community which, because of the order the plants are listed, conveys no information of what grows in the impact zone.

5

Misidentification

Black sage (*Salvia mellifera*) is included among "other common species" (p.152). This open chaparral plant does not occur along the alignment, especially not as a "common" species, and is, therefore, a misidentification.



Dedicated to the preservation of California native flora



6

Rare Plants

Although no federally- or State-listed plants, nor any species on CNPS' List 1B and List 2, are known to occur along the project alignment, there are at least three species that merit some attention, none of which was discussed in the DEIR. The DEIR states that "CNPS List 3 and 4 species (which) may be included as special-status species on the *basis of local significance* or recent biological information" (p. 155). However, later the DEIR states that "No sensitive plant species or populations were detected during these botanical surveys" (p. 161).

Molly Boyes of MBBC, who did credible rare-plant surveys in 2007 and 2008 (included in Appendix E), includes Bishop's cap (*Mitella ovalis*), California bottlebrush grass (*Elymus californicus*) (CNPS List 4), and mist maidens (*Romanzoffia californica*) in her plant list. Bishop's cap occurs on a moist stream bank on the south side of the SFDB (non-creekside). This population is the only presently known occurrence in Marin County, where it reaches its southernmost extent (D. Smith pers. comm.). Miss Boyes also notes that California bottlebrush grass occurs along the road within the alignment. This plant occurs only in a narrow strip along the coast from Sonoma County to Santa Cruz County and is one of the most unusual grasses in California (Howell 2007).

Correctly, the Biological Assessment (BA), edited and amended by LSA (2009), points out under *Special-status Plants* (p.33) that there are three (3) species with limited distribution in Marin County, *i.e.*, of *local significance*:

- Mist maidens (*Romanzoffia californica*)
- Bishop's cap (*Mitella ovalis*)
- California bottlebrush grass (*Elymus californicus*) (CNPS List 4)

The BA further states that "Based on the mapped locations of the observed populations of the three species, the proposed project should avoid impacts to them." (For mapped locations, please see below.)

None of these species are considered to be of *local significance* in the DEIR; therefore, there are no recommended mitigation measures, if these species are impacted by the project, nor recommendations for avoidance. Mist maidens are listed as an "herbaceous plant(s) commonly observed" (p. 153).

7

The rare-plant report by MBBC recommends that plants in seven (7) locations along the alignment (mapped on Figure 8 of her report) be afforded special care or protection. None of these locations are discussed in the DEIR

Considering the high alpha diversity (diversity at the stand or community level) and high proportion of native plants located along the road and riparian areas of SPTSP, great care should be taken to ensure a successful vegetative response to the road resurfacing project. All locations noted should be given appropriate consideration in the planning and executing of this project (Molly Boyes Consulting 2008).

It is CNPS' opinion that the seven (7) locations should be investigated and that seeds from the native plants at these locations be collected for later dispersal. This task would coincide with Mitigation Measure BIO-12d of the DEIR which states that *CNPS would get to approve of a native seed mix used for reseeding* (p. 212) when revegetation of bare soil surfaces is required.

7 con.

The locations are as follows (see Figure 8 of MBBC report):

- **Location #1** refers to the cliffs containing native plant communities should be disturbed as little as possible.
- **Location #2** is a continuation of the same cliff, but with a very different native plant community. It should also be disturbed as little as possible.
- **At Location #3** across the road, road improvements are necessary to improve the crumbling shoulder. Great care should be taken to protect this area, which marks the eastern-most boundary of the state park. Many native species occur here that do not occur upstream. This spot marks the beginning of a healthy and unique riparian area.
- **Location #4.** The hillside spring is the southernmost home (location) of miterwort (*Mitella ovalis*). This population should be protected, along with some other species. Himalayan blackberry needs to be carefully removed from this area. *Ehrharta erecta* is across the road and in the adjacent ditch and should be removed.
- **Location #5** marks the location of a population of mist maidens (*Romanzoffia californica*) that grows on the shoulder and the embankment adjacent to the road.
- **Location #6** is the native grassland. Care should be taken during road work to avoid introducing non-native, invasive species to this area. Any materials stored in these areas should be weedfree. Anyone walking in this area should clean their footwear of seeds from other locations.
- **Location #7** is where we observed a large population of red-ribbon clarkia (*Clarkia coccinea* ssp. *coccinea*) near Jewel. Populations this size are uncommon and worthy of protection as a source population. Care should be taken not to disturb these cliffs or damage this population.

8

CNPS is confounded at the suggestion that species endemic (restricted) to serpentine substrates are included in the recommendation for additional rare-plant surveys [for ex. Tiburon paintbrush (*Castilleja affinis* ssp. *neglecta*)]. Nowhere in the appropriate geology/soils sections of the DEIR is there mention of any serpentine along the alignment.

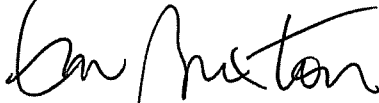
9

CNPS supports the "preferred alternative" if the above comments are incorporated and steps taken to protect sensitive plants and plant habitat during construction of the proposed project.

Thank you for the opportunity to comment on the DEIR for the Sir Francis Drake Boulevard Rehabilitation Project.

Sincerely,

The CNPS Conservation and Plant Advocacy Committee



Eva Buxton
Conservation Chair

COMMENTER B1

California Native Plant Society; Eva Buxton, Conservation Chair (June 25, 2010)

- B1-1: The comment that the botanical sections of the Draft EIR are poorly presented with many inconsistencies and mistakes is the opinion of the letter's author and the comment is acknowledged. This comment provides a general statement regarding the comments that follow. Please see the responses to the comments below.
- B1-2: The plant communities described in the DEIR are generally accurate and allows for an adequate assessment of botanical resources and potential impacts to such resources.
- B1-3: The observed species discussed in the DEIR allow for an adequate assessment of botanical resources and potential impacts to such resources.
- B1-4: The botanical report allows for an adequate assessment of "what grows" within the impact zone.
- B1-5: The comment states that the plant species, black sage (*Salvia mellifera*) is listed under "other common species" found within the project area. This error is acknowledged; however the authors of the DEIR and the County note that black sage is not a special status species under CEQA and the error does not affect the accuracy of the DEIR's assessment of project impacts and mitigation measures.
- B1-6: The DEIR provides mitigation measures for the three plant species that are locally significant (*Romanzoffia californica*, *Mitella ovalis* and *Elymus californicus*). Mitigation Measure BIO-1 requires pre-construction botanical surveys within and immediately adjacent to all areas that would be disturbed by project construction. These would include the locations where the three plant species were observed during the botanical surveys. Based on the observed locations, the project should avoid impacting these plant species; however the surveys would ascertain if the plant populations have expanded into the construction zone. Mitigation Measure BIO-1 also requires various measures that would avoid and protect the three plant species, including protective fencing installation and consultation with the California Native Plant Society (CNPS) and the California Department of Fish and Game (CDFG) as to other appropriate avoidance and mitigation measures. If the plants are found to have expanded into the construction zone, (i.e. if avoidance and protection is not feasible), the mitigation measure also requires consultation with the CNPS and CDFG as to transplantation and seed collection/reseeding of the observed plant species, and preparation of a long-term management/enhancement plan for existing off-site populations of the plant species.
- B1-7: With regard to protecting existing native plant populations in 7 locations along the SFDB alignment, location #6 is well outside the construction disturbance zone and would not be affected by the project. Mitigation Measure BIO-1 would be applicable to the remaining 6 locations. If special status plant species are observed in any of these locations, the special avoidance, protection and enhancement/management measures cited under B1-6 above would be applied. Additionally, Mitigation Measure BIO-12 would also apply with respect to

avoiding the spread of invasive exotic plant species into these areas by utilizing native seed mix.

The comment further requests that the seven locations be investigated for the collection of seeds for use in the native seed mix under Mitigation Measure BIO-12d. The authors of the DEIR and the County agree with this recommendation and the County will implement it, as feasible, at six of the seven locations. The County will not allow collection of seed at location #6, which is outside the zone of disturbance.

The comment is incorrect in stating that Mitigation Measure BIO-12d requires CNPS approval of the native seed mix to be applied under the measure. Mitigation Measure BIO-12d in fact states that approval of the seed mix is required from CDFG and that CNPS would *review* the mix.

- B1-8: The comment that special status plant species associated with serpentine substrates are unlikely to occur along the SFDB alignment is noted.
- B1-9: The comment that CNPS supports the “preferred alternative” if their comments are incorporated and steps are taken to protect sensitive plants and habitat during construction is acknowledged. This comment relates to the merits of the proposed project and no further response is required under CEQA.

Environmental Action Committee - Protecting West Marin since 1971.
Box 609, Point Reyes Station, CA 94956 tel: 415-663-9312 www.eacmarin.org

June 24, 2010

Dave Bernardi
Department of Public Works
3501 Civic Center Drive, Room 404
San Rafael, Ca 94903-4157

Re: Sir Francis Drake Boulevard Rehabilitation Project DEIR

Dear Mr. Bernardi,

I am writing on behalf of the Environmental Action Committee of West Marin, representing over 1000 members, two-thirds of whom live in Marin County. We appreciated the efforts of Supervisor Kinsey and the Community Development Agency to host public workshops prior to the development of the Sir Francis Drake Boulevard Rehabilitation Project Draft Environmental Impact Report. As a consequence, the alternatives are better informed and improved from the original drafts. Nonetheless, there is room for improvement and we hope that our comments will prove useful.

1

As a general comment, given that the roadway traverses some of the most scenic and ecologically significant areas of West Marin, we believe that the project should seek to accomplish the most modest goals by the least intrusive methods.

We have detailed three specific comments below. These comments are representative examples of our general belief that proposed project is too ambitious in scope, and that the DEIR does not adequately identify the potential impacts and ways to avoid or mitigate those impacts. Nor does it explore the potential benefits that could be realized through, for example, redesign or realignment of culverts.

Our specific comments are as follows:

Option A is unacceptable, and should be removed from consideration

2

We very strongly oppose Option A, which would slightly increase the shoulder width on 2400 linear feet of the roadway by removing nine imposing trees. The trees to be removed include eight redwoods up to 120 feet tall, and as much as 8 feet in diameter. Three of these redwoods are canopy-sized trees that provide shade to Lagunitas Creek.

The mitigation measures for habitat loss described in the DEIR include: planting, near Peters Dam, 15-gallon “replacement” trees in a 3:1 ratio; making a financial contribution to MMWD for habitat enhancement along the creek; and making the remains of the cut trees available for use as woody debris (pages 206 - 207). No evidence is cited to show that these measures would in any way compensate for the extraordinary loss of such large trees.

3

In addition, the DEIR describes the visual impact of the tree removal in this way:

The removal of the nine protected trees would have local visual effects, but would not substantially modify the existing visual characteristics of the roadway setting. Many trees will remain that contribute significantly to the canopy that encloses the roadway. Therefore, the tree removal impact of Option A is deemed less-than-significant. (Page 140)

This assertion is plainly untrue, and reflects a “seen one tree, seen them all” mentality that is wildly out place in the context of this project.

4

Finally, the DEIR asserts that the removal of these trees would occur “for the routine management and maintenance of public land” pursuant to Section 22.27.040 (k) of the Marin County Code, and so is exempt from permit requirements (page 137). The section cited is in no way applicable to this project. If this were routine maintenance, it would not require an Environmental Impact Report that is over 400 pages long.

In short, there can be no justification for the removal of these trees, and no conceivable “mitigation” could compensate for their loss. Therefore, Option A should be removed from consideration.

Damage to tree root systems from “crack and seal” work

5

Mitigation measures BIO-10a through BIO-10i (pages 209 – 210) do not appear to address potential damage to tree root systems from soil compaction caused by the “crack and seal” work on the roadway. Please clarify how such potential damage would be avoided or mitigated.

6

As part of the proposed project, 57 culverts within the project area would be replaced, but their alignment would not be changed. As such, culverts that currently discharge into Lagunitas Creek above the Ordinary High Water Line (OHWL) would continue to do so. We believe this approach will result in a lost opportunity to improve stream connectivity and habitat for terrestrial and aquatic fauna.

The Biological Assessment notes “...culverts... with inverts at or below the OHWL have the highest potential to facilitate the passage of aquatic fauna, particularly during the rainy season when intermittent and ephemeral tributaries may have flow.” (Appendix E, page 19), and that “...32 of the 72 culverts that occur within the project site may have the potential to provide significant terrestrial and/or aquatic faunal passage” (ibid). No analysis is presented as to why the other culverts that will be replaced cannot or should not be realigned so that they serve the same beneficial purpose as the 32 cited above.

7

Moreover, the proposed project involves placing riprap, erosion control fabric, and plantings on creek banks below the terminal points of culverts that discharge above the OHWL. Given the alternative of realigning the culverts, this approach appears to be inconsistent with Countywide Plan Policy EH-3.2, which discourages the use of structural stabilization, and specifically riprap, for flood control.

Thank you again for the opportunity to comment.

Respectfully,

A handwritten signature in black ink, appearing to read "Frederick Smith", written in a cursive style.

Frederick Smith
Executive Director
Environmental Action Committee of West Marin

COMMENTER B2

Environmental Action Committee; Frederick Smith, Executive Director (June 24, 2010)

- B2-1: The comment that the project should seek to accomplish the most modest goals by the least intrusive methods is acknowledged. This comment relates to the merits of the proposed project and not to the adequacy of the Draft EIR. No further response is necessary. Please see Master Response 1.
- B2-2: The authors of the EIR and the County believe the mitigation measures provided in the Draft EIR (pages 206-207) fully mitigate for the tree removal impacts associated with the proposed project. Please see Master Response 6 for more information related to tree removal and proposed mitigation.
- B2-3: The EIR authors and the County do not agree with the commenter's conclusion. The analysis of whether or not an impact is considered significant is determined by the significance criteria outlined in Appendix G of the CEQA Guidelines and Appendix N of the Marin County Environmental Impact Review Guidelines (1994). The significance criteria are listed on page 138 of the Draft EIR. The Draft EIR acknowledges that tree removal associated with the proposed project may have local visual effects; however, the removal of these 17 individual trees would not substantially alter, degrade or affect the existing visual character or quality of the project site. The landscape would still consist of dense vegetation and forest, with large trees adjacent to and at some locations encroaching on the roadway. As described on page 139 and page 146 of the Draft EIR many of the trees proposed for removal as part of Option A and the slope repair are not redwoods, are less than 18 inches in diameter and do not encroach on the roadway. Given the abundance of the surrounding forest and the remaining large trees that encroach on the roadway, the removal of trees associated with the proposed project is considered a less than significant visual impact.
- B2-4: Comment noted. The proposed project would comply with the provisions of the Marin County Tree Protection Ordinance (Section 22.27.040(k) of the County Code) for any tree loss under the proposed project, including retaining wall work at Station 270+25 and all tree removal under Option A. In compliance with the ordinance, trees of the same species as those impacted shall be replanted at a 3:1 replacement ratio.
- B2-5: The authors of the EIR and the County believe the potential damage to tree root systems associated with construction of the proposed roadway rehabilitation project are fully addressed by Mitigation Measures BIO-10a through BIO-10-i (pages 209-210). Please see Master Response 7.
- B2-6: Please see Master Response 3 for additional information on culvert replacement. The project is a roadway rehabilitation project that incorporates drainage improvements; it is not a culvert replacement project. This comment relates to the merits of the proposed project. No further response is required (Please see Master Response 1).

- B2-7: Countywide Plan Policy E.H.3.2 states: “Retain Natural Conditions. Ensure that flow capacity is maintained in stream channels and floodplains and achieve flood control using biotechnical techniques instead of storm drains, culverts, riprap, and other forms of structural stabilization. As described in Table 4.1.A of the Draft EIR (page 117), the proposed project would be consistent with Countywide Plan Policy E.H-3.2 because drainage improvements included in the proposed project would incorporate biotechnical techniques such as bioswales and sand filters in addition to culverts and other stabilization techniques.



Federated Indians of Graton Rancheria
Sacred Sites Protection Committee
6400 Redwood Drive Suite 300
Rohnert Park, CA 94928

B3

June 1, 2010

RECEIVED

JUN 03 2010

MARIN COUNTY PUBLIC WORKS

Ernest Klock
Marin Dept. of Public Works
3501 Civic Center Drive, Rm. 404
San Rafael, CA 94903

RE: Comments for Sir Francis Drake Blvd. DEIR

Dear Mr. Klock:

The Federated Indians of Graton Rancheria (FIGR), a federally recognized Tribe and sovereign government, has received the report you have provided regarding the Sir Francis Drake Blvd. rehabilitation project. We have several concerns about the impacts to our cultural resources by this project.

1 It is our understanding this project must comply with the National Historic Preservation Act, Section 106 and 36 CFR Part 800 due to the permits that must be obtained from the federal agencies of the U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service and NOAA. Please notify the representatives of these agencies that the Tribe requests official "government to government" consultation begin regarding the impacts of this project.

Respectfully,

Nick Tipon
Chairman: Sacred Sites Protection Committee

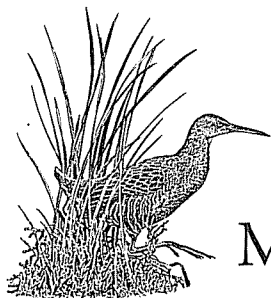
Cc: Andrew Pulcheon
Associate/Cultural Resources Manager
LSA Associates
andrew.pulcheon@lsa-assoc.com

COMMENTER B3

**Federated Indians of Graton Rancheria; Nick Tipon, Chairman: Sacred Sites Protection
Committee (June 1, 2010)**

B3-1: The commenter requests government-to-government consultation among the Federated Indians of Graton Rancheria (FIGR) and representatives of the U.S. Army Corps of Engineers, the National Atmospheric and Oceanographic Administration, and the U.S. Fish and Wildlife Service. The comment is noted. This consultation is being requested pursuant to consultative requirements of the National Historic Preservation Act of 1966 and its implementing regulations in 36 CFR §800. This comment does not bear on the adequacy of the information presented in the Draft EIR.

Prior contact and meetings with FIGR have occurred during the environmental review. On October 11, 2007, Pacific Legacy sent letters via certified mail to persons on a list of Native American contacts and organizations maintained by the Native American Heritage Commission (NAHC). The letters were sent to elicit information or concerns about potential impacts to cultural resources in the project area. FIGR, one of the recipients of a letter, was notified of the proposed project and its location. FIGR representative Nick Tipon responded affirmatively to the letter and met with County representatives on May 3, 2009, regarding the project. Mr. Tipon requested the technical report of the biological survey of the project area, which was sent to him by Pacific Legacy. In addition, Pacific Legacy wrote Mr. Tipon on May 14, 2009, inviting representatives of the Federated Indians of Graton Rancheria to conduct a field visit while Pacific Legacy crews were completing site recordation. On June 1, 2009, Pacific Legacy received a letter from the Federated Indians of Graton Rancheria indicating they would be contacting Pacific Legacy regarding a site visit.



RECEIVED

B4

JUN 28 2010

MARIN COUNTY
DEPARTMENT OF PUBLIC WORKS

Marin Audubon Society

P.O. Box 599 | MILL VALLEY, CA 94942-0599 | MARINAUDUBON.ORG

June 24, 2010

Dave Bernardi
Marin County Department of Public Works
3501 Civic Center Drive
San Rafael, CA 94903

Re: Draft Environmental Impact Report for the Sir Francis Drake Rehabilitation Project

Dear Dave,

The Marin Audubon Society appreciates your consideration of our comments on the DEIR for the Sir Francis Drake Boulevard (SFDB) Rehabilitation Project. The project would repave, widen, straighten, improve pull outs, replace drainage culverts, and construct erosion control measures including riprap and retaining walls along a 5.2 mile section of Sir Francis Drake Blvd. We find this major project troubling and unnecessary.

1

As discussed below, the DEIR fails to demonstrate the need for such a large public works project through a uniquely sensitive habitat area. The project proposes to remove ancient trees that provide both an extraordinary habitat, landscape and an aesthetic experience so that a few drivers and bicycle riders can go faster. This certainly does not reflect Marin Audubon's values and we doubt it reflects the general public's values either.

2

Lagunitas Creek has the largest population of Coho Salmon and Steelhead in any creek in the state. It is identified as critical habitat for federally listed Coho and Steelhead, a federally threatened species, along with four other special status species. Thirty-two streams, redwood forests, native oak woodland and grassland comprise this unique ecosystem. Protection of these rare resources must be the primary motivation. Implementing the proposed project would change the road and the experience of driving along it, and have the very real potential to result in significant impacts to the Lagunitas Creek and associated forest and woodland habitats. The DEIR analyses separates the project into specific individual components and fails to address potential impacts to the ecosystem. In addition, a number of the impact discussions and conclusions seem to be based on wishful thinking - that impacts are "not likely" - rather than certainty that adverse impacts would not occur under specific circumstances. This approach is far too risky and extensive in a habitat as sensitive as this one, particularly when it does not appear to be needed.

3

4

Our specific comments are:

5

1. NEED FOR THE PROJECT

The need for the project is not clearly demonstrated. Our review of the project components leads us to the following:

6

- Safety: There is no indication that the accident rate along this roadway is high. According to the discussion on page 71, the roadway pavement condition has only "exceeded the design life" in segment 1. The discussion indicates that repair will be needed in the future for the other two segments. The only overall justification for this large project is that the road does not comply with

Caltrans' current design standards. Segment 3 is even described as being in "relatively good condition."

7

- Drainage Improvements: The discussion on page 66 states that there are 68 culverts and four box culverts in the project area. (Actually there is a discrepancy as page 182 states the project has 72 culverts.) The discussion simply states "many of the metal culverts have corroded and require replacement." What is meant by "many"? Are 5, 20, 60 or more blocked or collapsed? More specific information should be provided about the condition of the culverts that require replacement, and why this major project is needed to replace them. Could replacements be installed on as needed basis, rather than use them as justification for a major construction project?

8

- Roadway pullouts: According to discussion on page 75, many of the existing unpaved pullouts are too small and provide inadequate sight distance. Paving of new pullouts is proposed to limit sediment discharge. To address safety problems, DPW could simply erect signs or barriers to close the existing unsafe pullouts. And, it seems that sediment discharge is not currently a problem. The Water Quality section states that the ground at the pull outs is compacted, so sediment discharge is not an issue.

9

- Slope Repair: The slope at 270+25 is identified as unstable. The proposed repair proposes a pier-supported cantilevered tie-back concrete retaining wall. It is difficult to understand why, in this day and age, this problem could not be corrected without removing eight native trees. The problem is not noticeable to drivers using the roadway. A slope repair design should be developed that would not destroy native trees. If this is not impossible, the EIR should discuss why. Also, couldn't an energy dissipating mechanism be added without doing this major tree destruction?

10

2. PROJECT OBJECTIVES

As stated in the DEIR, project objectives include:

- "improving the roadway alignment...to enhance safety." No information is provided to support the need for safety improvements. Discuss the safety history of the area. What is the accident rate over the last 10 years? Have there been any deaths? A case can easily be made that some of the proposed "improvements" would decrease safety for all users of the road because people drive faster when roads are smooth and straight.

11

- "Enhance pedestrian and bicycle use of the roadway." It is not clear what this means. Does the county mean to attract more people to use SFDB? Then this should be stated as "increase" pedestrian and bicycle use. If people want a faster route to West Marin there are other options. If the intent is to enhance the experience for users, this project will fail miserably. Making the road wider will diminish this experience traveling along a winding, country road. Currently using this section of SFDB is a wonderful experience through a unique creekside area wooded with redwood trees. The proposed project would diminish this experience by straightening and widening the road, removing trees, making it just like many other roads in the county.

12

- "Protect environmental resources to the greatest extent possible...." This objective conflicts with the others. Widening and straightening the road, formalizing turnouts, and removing trees and understory vegetation and other components of this plan, will not protect the environment.

13

In summary, the only project "objective" that appears to be valid is "to provide an additional 30-year design life."

14

3. BIOLOGICAL RESOURCES

Impacts judged less than significant:

Redwood Forest - This road passes through this unique habitat. Redwood forests exist only along the

14
cont.

California coast. Its rarity and value is glossed over in the DEIR. This description only states that it is restricted to coastal areas of California and provides habitat for wildlife that prefer shade.

Some of the unique characteristic of redwoods should also be noted: tolerance to decay and disease, age to which they live, species adapted to use them, etc. Another section of the DEIR identifies the redwoods as being 150 years old, already more than twice the age of the people that want to remove them. In subsequent discussions, the unique characteristics of these trees are even used to justify their removal, e.g. the fact that they are resistant to decay is used to support their roots remaining in the banks to hold the soil. Subsequent discussions (page 181) minimize the importance of the loss of these native species as by listing them as "locally common" concluding that the loss of "very small amounts" is less than significant. This is too narrow a view. Redwoods are certainly not common regionally, statewide, nationally or globally. Furthermore, the loss of native oak trees should be evaluated in light of the significant statewide losses from phytophthora.

We disagree that the loss of 17 trees, or even the reduced number of 9 trees, would not be significant. Loss of mature these redwoods and native oak trees would be a significant impact. This loss would not be mitigated by the proposed measures. It would take 150-years to mitigate the loss of a 150-year old tree.

15

Wildlife movement corridors

The discussion on page 154 focuses on the value of culverts for wildlife movement across SFDB. Widening the road, placing retaining walls and riprap will also impact the ability of wildlife to safely move along the creek banks. Removal of vegetation that currently provides cover and that may never be replaced successfully, may permanently reduce edge habitat and movement corridors along Lagunitas Creek.

16

Bioswales are proposed to be installed. Where would they be built? What is the current habitat in the areas where bioswales would be constructed? Are there additional trees that would be removed for them to be installed.

17

Impact BIO-3 Spotted owl Impacts

The proposed mitigations measures only deal with construction impacts. The permanent loss of mature trees that provide nesting and roosting sites for this endangered species should be addressed. There is not even a requirement that replacement trees be planted in a location that would replace habitat for this endangered species.

18

BIO-5 Impacts to Coho Salmon and Steelhead

The potential impacts of the work are minimized. In reality, if any one of the needed tasks (grading, culvert installation, retaining walls, resurfacing, etc.) goes wrong, the impacts on stream habitat and endangered species could be substantial. The uncertainty, and therefore the risk, is great. This discussion uses the natural characteristic of redwood (resistance to decay) to justify its removal with the observation that the roots will remain and continue to hold the banks place. Holding the creekbank in place longer and more effectively is better accomplished by leaving the entire tree in place.

19

BIO-9 Tree Removal

This discussion minimizes and dismisses the potential impact by comparing the tree removal to large number of trees along the SFDB corridor and adjacent woodland. The discussion actually states that the removal is not "likely" to result in stream impacts. This conclusion is vague and sounds like wishful thinking.

20

21

Tree replacement at 3:1 ratio with 15 gallon trees is proposed, that is unless some arborist decides otherwise. There is not even a guarantee they would be planted in the Lagunitas Creek Watershed so that they can benefit the species at the site of loss. The potential effectiveness of this mitigation is unclear. To enable the reader to evaluate the adequacy of the mitigation location, the possible location for planting should be stated in EIR. A financial contribution should not be acceptable as mitigation as there is no guarantee it would ever be spent on a project that would actually compensate for the impacts.

22

BIO-10 Impact on roots of redwoods and other native trees

Many more native trees than those listed could be impacted by the project. Others include tanbark oak, buckeye, big leaf maple, Douglas fir, white alder.

The DEIR acknowledges that project disturbance effects would not necessarily be apparent for 5 to 10 years and recommends that damage to all roots be minimized.

By that time any hope for mitigating the losses would be remote. No one would be around to enforce or even remember the mitigation.

23

None of the mitigation measures listed on page 209 really provide assurance that no damage would occur to trees that would remain. This impact is significant and unavoidable. The potential for damage to remaining trees should be avoided by changing the project.

24

BIO- 11 Loss of seasonal wetlands

Compensation is proposed for the loss of 0.24 acres of seasonal wetland at 2:1 ratio in the vicinity of project. The current acreage of seasonal wetlands should be stated and where they are located should be shown on a map. Also, the potential mitigation locations should be identified and shown on a map. They type of habitat that currently exists at these locations should be described in order to determine if additional adverse impacts would occur.

25

Concerning hydroseeding (proposed mitigation BIO-11c): hydroseed mixes usually have a binder composed of paper or other material. The binder material that would be used should be discussed.

26

BIO-12 Invasive Species

Other invasive non-native plants, such as broom, harding grass, detrichia, thistle and others, could invade the denuded slopes. There should be an ongoing program for removal that extends for at least 10 years to ensure that plants that reinvade are removed to ensure that the invasive species do not reinvade and reestablish permanently.

27

4. POTENTIAL IMPACTS NOT IDENTIFIED OR DISCUSSED

Potential impacts from construction of 2,000 linear feet of retaining walls (page 260) and pull outs, and placement of riprap need to be discussed. Retaining walls may not result in any runoff impacts, as stated in the Hydrology section, however, there would be other impacts. Constructing walls, pull outs, and placing riprap will cover and destroy any existing native vegetation and cover the ground thereby destroying existing habitat. These should be identified and evaluated as impacts and mitigation should be proposed.

28

5. HYDROLOGY AND WATER QUALITY

The discussion at (4) Stormwater page 236 asserts that the toxicity of asphalt rubber leachate is significantly reduced after "raw asphalt rubber is assimilated into pavement." We had a disturbing experience at one of our early restoration projects where tiny pieces of rubber from tiers were placed as the surface (loose) on a trail. When the rains came, the pieces washed into the marsh. On our request, DFG, which then had a lab, tested samples of the material and all of the test fish species died. While the

28
cont.

rubber material may be a different composition or the process may be different, it does give us cause for concern when the subject of reuse of rubber from tiers is being considered near waterways, particularly one as important as Lagunitas Creek.

29

6. TRAFFIC

Increasing speed and the consequent safety problems along the roadway as a result of widening and straightening SFDB should be discussed.

30

7. CUMULATIVE IMPACT ANALYSIS

We disagree that the proposed mitigation measures would fully mitigation for the loss of wetlands and impacts to special status plant and animal species and certainly not to the ecosystem. As noted above, the tree removal and other impacts are considered separately. There is no analysis of ecosystem impacts. The tree losses and other potential impacts should be considered in relation to all of the existing tree losses and potential tree losses as a result of damage from this project and any other projects reasonable foreseen for this general area. Removal of any ancient trees, should be avoided.

8. ALTERNATIVES ANALYSIS

We recommend that the following be addressed:

31

The Mitigated Roadway Alternative is identified as environmentally superior even though it would remove eight native trees include some retaining walls and other features that would impact natural resources.

32

Resurface Roadway Alternative Among the construction alternatives considered, the Resurface Roadway alternative should be identified as the most environmentally superior alternative. Under this alternative, the road would be resurfaced, and the impacts to native trees and other plants would be avoided, as would aesthetic impacts. This is clearly the Environmentally Superior Alternative. Impacts of this alternative could be further reduced by only paving the part that needs it - segment 1.

33

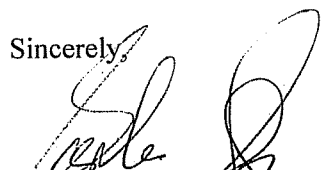
Provided it can be demonstrated that the repair of section 270-25 is necessary for public safety and environmental protection, we further recommend that the slope repair plan should be redesigned to avoid removal of the trees. So far, a convincing case has not been made for the need for such as massive reconstruction of this area.

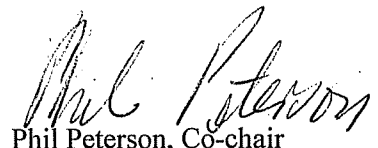
34

The need for repair of culverts should be considered individually. Culverts that are actually causing damage to the Creek should be identified and could be replaced over time.

Thank you for considering our input.

Sincerely,


Barbara Salzman, Co-chair
Conservation Committee


Phil Peterson, Co-chair
Conservation Committee

COMMENTS B4

Marin Audubon Society; Barbara Salzman and Phil Peterson, Co-Chairs: Conservation Committee (June 24, 2010)

- B4-1: The EIR, under CEQA, is not required to justify the need for the project; rather the EIR must analyze the physical environmental impacts of the proposed project. The EIR analysis found that the project as proposed is consistent with the objectives listed in Section 3.2 of the Draft EIR (page 57). The proposed pavement resurfacing and minor roadway realignment would enhance safety, as well as pedestrian and bicycle use while protecting environmental resources. This comment relates to the merits of the proposed project and not the adequacy of the Draft EIR. No further response is required. Please see Master Response 1.
- B4-2: The importance of the Lagunitas Creek ecosystem to coho salmon and steelhead is noted. The project has been designed to minimize the potential effects to natural resources in the project area to the extent possible. The Draft EIR contains evidence throughout Section 4.3, *Biological Resources*, that the riparian habitat in the project area contains sensitive habitat values that could be impacted by the proposed roadway rehabilitation. The Draft EIR (pages 180-213) addresses potential biological impacts during construction and operation of the proposed project and identifies mitigation measures to reduce potential impacts to a less than significant level.
- B4-3: The EIR authors and the County do not agree with the commenter's conclusion. The Draft EIR identifies the potential impacts of the proposed project and recommends mitigation measures to reduce those impacts to a less than significant level. The comment makes a general statement regarding the inadequacy of the Draft EIR. No further response is required. Specific issues are addressed in the responses that follow.
- B4-4: The EIR authors and the County do not agree that the impact discussions and conclusions in the Draft EIR seem to be "based on wishful thinking" rather than certainty that adverse impacts would not occur under specific circumstances. The Draft EIR, across 350 pages of text, tables, and graphics, provides a detailed presentation of potential impacts and then specifically links each potential adverse impact to mitigation measures designed to reduce those impacts to a less than significant level.
- B4-5: CEQA does not require the Draft EIR to demonstrate the need for a proposed project. The purpose of CEQA is to provide an analysis of the potential adverse *physical* impacts of a proposed project. The EIR analysis found that the project as proposed is consistent with the objectives listed in Section 3.2 on page 57 of the Draft EIR. The proposed pavement resurfacing and minor roadway realignment would enhance safety, as well as pedestrian and bicycle use while protecting environmental resources. Project need is one element, in addition to the environmental analysis included in the Draft EIR, that decision-makers would consider in evaluating the project merits and in determining whether or not to approve the project.

- B4-6: As described in the Draft EIR (pages 57 and 71), the majority of the existing roadway displays evidence of distress including cracking and dislocation of pavement. Although Segment 3 is “in relatively good condition” compared to the other two segments, all three segments exhibit some level of deterioration. Rehabilitating all three roadway segments as one project would streamline the environmental and permitting process, be cost-effective and reduce environmental impacts associated with construction activities (i.e., construction would occur once rather than multiple times in a relatively short time frame). This comment relates to the need for the proposed project. Please see Response to Comment B4-5.
- B4-7: The request for additional information regarding existing culverts and the need for repair is noted. The commenter is referred to Appendix D of the Biological Assessment (Appendix E of the Draft EIR) which provides a detailed summary table of location, size and condition of each of the 72 culverts occurring along the project alignment. Please also see Master Response 3 for additional information on culvert replacement. The project is a roadway rehabilitation project that incorporates drainage improvements; it is not a culvert replacement project. This comment relates to the merits of the proposed project. No further response is required (Please see Master Response 1).
- B4-8: Comment is incorrect. As described on page 75 of the Draft EIR, new paved pullouts are not proposed to limit sediment discharge, but to provide a safe refuge for slower traveling vehicles. The proposed project would use permeable asphalt paving in order to limit any sediment discharge resulting from the *new* pullouts. As recommended in the comment, boulders or large rocks would be placed at the location of the existing unsafe pullouts to discourage vehicles from parking or from pulling off the roadway.
- B4-9: As noted in the project description, the unstable slope at Station 270+25 is likely due to incorrect fill placement when the road was originally constructed. Drivers may not be aware of the condition as the County’s maintenance crews regularly add new asphalt to maintain a drivable roadway surface. Trees would need to be removed in order for construction equipment to access the slope and perform the necessary stabilization work. It is the intent of the County to work with the Contractor to minimize tree removal. The Draft EIR evaluates the “worst-case” scenario related to tree removal (removal of up to 17 trees) and provides mitigation measures to reduce such impacts to a less-than-significant level. See also Master Response 6.
- B4-10: The request for information to support the need for safety improvements is acknowledged. The comment relates specifically to the project objective, as stated in Section 3.2 (page 57 of the Draft EIR), to “improve the roadway alignment, where possible, to enhance safety.” The proposed project would provide a smooth uniform roadway surface, paved shoulders of varying width that blend smoothly with the travel lanes, and road alignment adjustments that improve sight distance. These improvements would enhance the safety of the roadway for both motorists, bicyclists, and pedestrians. The authors of the EIR and the County do not agree that proposed roadway improvements would increase vehicle speeds. Please see Response to Comment B4-29.

B4-11: As described above, the proposed project would provide a smooth uniform roadway surface, paved shoulders of varying width that blend smoothly with the travel lanes, and road alignment adjustments that improve sight distance. These improvements would benefit bicycle travel and pedestrian movement along the roadway compared to the existing condition. Pedestrian and bicycle movement would benefit from improvements in vehicle sight distance, reduction in parking on the roadway shoulders, and a reduction in the number of vehicle turning movements along the roadway (i.e., pullouts) that currently intrude into areas used by both bicyclists and pedestrians. There is an existing separate pedestrian and bicycle trail through the project area that provides safe access to the park's natural resources and a venue for bicycle and pedestrian movement that is not encumbered by vehicular traffic. The proposed project was never intended to provide separate improvements for all modes of transportation along the roadway alignment, but to make enhancements compared to the existing condition.

B4-12: The authors of the EIR and the County disagree with the commenter's conclusion. The proposed project has been designed to minimize, to the extent feasible, impacts to the environment. Project impacts would be reduced to less-than-significant levels with implementation of the mitigation measures identified in the Draft EIR. These measures fully mitigate for the adverse environmental effects of the proposed project.

As discussed in Section 5.4 of the Draft EIR (pages 348-349), several alternatives were originally considered, but were rejected from further consideration by the County because each would result in substantial additional environmental impacts to natural resources in the vicinity of the roadway (i.e., more tree removal, more wetland fill, more streambank alteration, and changes in topography).

Under the existing condition, deteriorated pieces of the roadway are becoming dislodged and washed into the receiving watershed. Drainage improvements proposed as part of the project would reduce the volume of sediment and pollutants entering Lagunitas Creek over the long term and have a beneficial effect on water quality and aquatic species in Lagunitas Creek.

B4-13: The EIR authors disagree with the commenter's conclusion. See responses to comments B4-10 through B4-12 above.

B4-14: The EIR authors do not agree with the commenter's conclusion. Please see Master Response 6 for further discussion of proposed tree removal.

B4-15: Biologists on the EIR preparation team reviewed the potential effects of the project on wildlife passage. Their overall conclusion is that the ability of wildlife to cross the road is and would continue to be constrained by the timing and volume of vehicular traffic, which is not expected to increase as a result of the project. The physical characteristic of the road would not be appreciably changed with the project and therefore should not cause any significant changes to wildlife passage. The extent of road widening would be very minor – overall pavement and shoulder widths would increase by a maximum of 4 feet in certain locations. However, where the roadway would be widened, the average increase in width would be about 2 feet. Retaining walls would only be placed at specific locations where existing steep

- slopes currently abut the road; the walls would be low (no more than 3 feet high) and discontinuous and therefore should not result in significant new barriers to wildlife movement. Where vegetation removal is required (other than the tree removal for slope stabilization at Station 270+25 and under Option A), the removal would be largely limited to herbaceous roadside cover that should rapidly re-establish itself following applications of a native erosion control seed mix to all areas disturbed by construction.
- B4-16: Please see Master Response 11 for more information related to bioswales.
- B4-17: Please see Maser Response A1-7 and A1-8 above.
- B4-18: The authors of the EIR agree with the commenter's conclusion that the potential impacts of the project on salmonids would be minimized. We do not agree with the part of the comment that suggests there is uncertainty in the project that would result in significant risks to stream habitat and endangered species. The mitigation measures contained in the DEIR, if properly implemented, would reduce potential impacts to these biological resources to less than significant levels.
- B4-19: Comment is incorrect. Page 197 of the Draft EIR states: "the removal work is not expected to generate new sources of erosion and sedimentation. The remnant root systems below the tops of bank should continue to serve in a bank holding capacity for several decades as redwood roots are very resistant to decay." This statement is not used to "justify" the removal of redwood trees; but rather to describe the potential impacts of the proposed project (i.e., tree removal) on salmonids. The comment further states that leaving the entire redwood tree in place would more effectively hold the creekbank in place. The authors of the EIR do not dispute this claim. (Please note that Chapter 5 of the DEIR concludes that the Mitigated Roadway Alternative, which does not include the Option A tree removal, is the environmentally superior alternative.) However, the purpose of the Draft EIR is to assess the potential adverse environmental impacts of the proposed project, including the removal of trees associated with the slope repair work at Station 270+25 and Option A. Although the trees would be removed, the tree roots would remain, thereby providing bank support to prevent erosion that would adversely affect salmonids.
- B4-20: Please see Master Response 6.
- B4-21: Please see the prior responses to Comments A5-15 through A5-18 above.
- B4-22: The authors of the EIR and the County believe the potential damage to tree root systems associated with construction of the proposed roadway rehabilitation project are fully addressed by Mitigation Measures BIO-10a through BIO-10-i (pages 209-210). Please see Master Response 7.
- B4-23: The comment indicates that the impacts to tree roots would be significant and unavoidable because proposed mitigation measures provide no assurance that no damage to remaining trees would occur. The EIR authors disagree with the commenter's conclusion. In accordance with Section 15064 of the *CEQA Guidelines* a determination of significance must stem from

information in the project's record, and to the extent feasible, on scientific and factual data. The Draft EIR was prepared by a team of environmental professionals and technical experts, including arborists, who have made the conclusions of significance and developed mitigation measures based on technical expertise and factual evidence. No additional response is required.

B4-24: The current acreage of seasonal wetlands and the locations of all impacted wetlands is provided in the wetland delineation maps, included as an appendix to the Biological Assessment (Appendix E of the DEIR). A total of 0.94 acres of potentially jurisdictional wetlands occur within the project boundaries. The Biological Assessment also includes a summary of the *Lagunitas Creek Salmon Winter Habitat Enhancement Project* which provides a suitable location for off-site wetland mitigation; Master Response 10 provides further details on the location of this site, existing habitat conditions and mitigation approach.

B4-25: The specifications for the hydroseed mix would be made in compliance with all Marin County and regulatory agency guidelines.

B4-26: As noted in the discussion under Impact BIO1-12 on page 212 of the draft EIR invasive plant species are already present in the study area adjacent to the roadway. CEQA requires that potentially significant adverse impacts resulting from the proposed project be mitigated to a less-than-significant level. The draft EIR found that construction activities associated with the proposed project could result in the spread of these invasive plants into areas currently occupied by native species and perhaps some special status species. The implementation of recommended mitigation measures BIO-12a, 12b, 12c and 12d would reduce this potential impact to a less than significant level reducing the likelihood that invasive plants would spread as a result of project construction.

The proposed project does not create the need for a 10-year invasive weed removal program. As mentioned in the Draft EIR invasive plants are already present along the roadway. While such a weed removal program has environmental merit it is not required to mitigate a potential impact of the proposed project.

B4-27: The comment states that potential impacts from construction of the retaining walls, pullouts and placement of riprap need to be discussed. The EIR authors disagree with the commenter's conclusion that the Draft EIR fails to adequately address all aspects of the proposed project. All elements of the proposed project outlined in Chapter 3.0 of the Draft EIR, including construction of retaining walls, slope repair, culvert replacement and pullout installation were considered in preparing the Draft EIR. Potential impacts have been identified based on the thresholds of significance outlined in the *CEQA Guidelines* and Appendix N of the Marin County Environmental Impact Review Guidelines (1994). Mitigation measures are recommended to reduce potential impacts to less-than-significant levels.

B4-28: The commenter's concern regarding the use of RAC near Lagunitas Creek is noted. As described in Section 4.6.4 of the Draft EIR (pages 263-264), technical studies conducted on rubber asphalt leachate indicate that no organic compounds were detected and all detected

metals concentrations were below surface water quality standards. Please see Master Response 2 for further discussion on RAC.

B4-29: The EIR authors and the County do not agree with the commenter's assumption that rehabilitation of the roadway under the proposed project would result in increased speeds along the project alignment. The traffic impact analysis (pages 285 through 291) in the Draft EIR concluded that the proposed project would not result in an increase in traffic through the project area and that proposed roadway improvements would make vehicular traffic movement easier and safer. The resulting improvements in traffic flow and the provision of properly designed formalized pullouts are expected to reduce the urge for faster moving traffic to pass slower moving traffic, thereby reducing the need for vehicles to accelerate at higher speeds to pass the vehicle in front of them. Safe roadway speed limits are posted along the roadway and all licensed drivers are required by law to comply with the posted speed limit. Some drivers may feel that an improved roadway provides an opportunity to travel at a higher speed than posted. However, this is not an impact of the proposed project, but a matter of perception by the driver of the vehicle. Furthermore, no substantial evidence was presented in the comment to support the opinion that the proposed roadway rehabilitation would result in higher vehicle speeds (CEQA Guidelines Section 15384).

B4-30: The EIR authors and the County respectfully disagree with this comment. With the mitigation measures contained in the DEIR, the project would avoid significant impacts to special status species. Mitigation Measure BIO-11b would replace marginal seasonal wetlands growing in roadside ditches with significantly higher quality wetland along the Lagunitas Creek watershed at a 2:1 replacement ratio. More specifically, if the MMWD *Lagunitas Creek Salmon Winter Habitat Enhancement Program* is implemented under Mitigation Measure BIO-11b, then the project would help fill a critical ecosystem-wide need for Lagunitas Creek – the establishment of 0.48 acres of new over-wintering habitat for coho salmon. The establishment of this new over-wintering habitat combined with the DEIR's other biological mitigation measures (i.e., woody debris contributions, replacement tree plantings, financial support for exotic vegetation removal and native plantings along the creek) are consistent with an ecosystem-wide approach to impact analysis and mitigation.

With regard to the comment on cumulative tree losses, please see Master Response 8. The comment with respect to avoiding ancient tree removal is noted.

B4-31: The authors of the EIR and the County disagree that the Mitigated Roadway Alternative is not the Environmentally Superior Alternative. As described in Section 5.5 of the Draft EIR (page 349-350), the Mitigated Roadway Alternative would reduce the number of trees to be removed by eliminating Option A and would achieve the water quality benefits associated with proposed drainage improvements, including culvert replacement and slope repair. Therefore, it is considered the Environmentally Superior Alternative. Please see Master Response 12 for further discussion of the alternatives.

B4-32: The EIR authors and the County disagree with the commenter's conclusion that the Resurface Roadway Alternative is the Environmentally Superior Alternative. See Response to Comment B4-31.

B4-33: CEQA does not require the Draft EIR to demonstrate the need for any element of the proposed project, including the proposed slope repair. The purpose of CEQA is to provide an analysis of the potential adverse *physical* impacts of a proposed project. The EIR analysis found that the project as proposed is consistent with the objectives listed in Section 3.2 on page 57 of the Draft EIR. The proposed pavement resurfacing and minor roadway realignment would enhance safety, as well as pedestrian and bicycle use while protecting environmental resources. Please see Response to Comment B4-5.

B4-34: Comment noted. Please see Master Response 3 related to proposed culvert replacement.

Ernest Klock, Principal Civil Engineer
Marin County Dept. of Public Works
3501 Civic Center Drive, Rm. 404
San Rafael, CA 94903

RECEIVED
JUN 28 2010
MARIN COUNTY
DEPARTMENT OF PUBLIC WORKS



June 25, 2010

Re: Sir Francis Drake Boulevard (SFDB) Rehabilitation Project Draft Environmental Impact Report

Dear Mr. Klock:

1 | Marin Conservation League has reviewed the subject DEIR and wishes to submit the following comments on its adequacy. In general respects, the DEIR provides sufficient information to enable the County to make an informed decision in selecting the least environmentally damaging alternative ("Environmentally Superior Alternative"). We differ with the DEIR's conclusion, however, that all significant impacts have been mitigated to a less-than-significant level. Given the unique sensitivity of the project's environment, effective mitigation will play a critical role in reducing impacts and placing conditions on the project's implementation. The FEIR must provide the necessary supporting information and be honest in its conclusions, even if significant unavoidable adverse impacts require a finding of overriding considerations.

2 | General Comment: All references in the DEIR to the use of rubberized asphalt concrete (RAC) should be replaced with the appropriate material (permeable asphalt?), as discussed in the presentation of the project before the Board of Supervisors, July 15, 2010.

Our comments on the DEIR focus on Biological Resources, Hydrology and Water Quality, certain aspects of Traffic and Circulation, and Alternatives.

Biological Resources

3 | Impact BIO-5 and associated Mitigation Measures: Maintaining the long-term health of the Lagunitas Creek habitat for federal and state listed salmonid species is of paramount importance in this project. As discussed below, under Impact HYD-1, the DEIR devotes most of its analysis to construction-related impacts. Certainly these will be the most obviously disruptive to the environment. The discussion of post-construction (ongoing operation) of the rehabilitated roadway warrants more detailed mitigation. The discussion points out that design elements should contribute to a general improvement in the quality of stormwater discharged from SFBD. It also states that "In the absence of a proper long-term maintenance program . . . the proposed project could cause a significant adverse impact to salmonids in Lagunitas Creek due to a gradual decline in runoff water quality under post project conditions" (Page 197). Measure BIO-5b is the only mitigation specific to post-construction operation that addresses this concern.

Comment: See comment below under Impact HYD-1, and our request for more detailed discussion of measures to protect against long-term water quality degradation to salmonid habitat.

PHONE: 415.485.6257
FAX: 415.485.6259

EMAIL: mcl@marinconservationleague.org
URL: WWW.marinconservationleague.org

ADDRESS: 1623-A Fifth Avenue
San Rafael, CA 94901

4

Impact BIO-9 and 10: These impact discussions concern the direct removal of “protected” trees (under County Tree Preservation Ordinance) and root damage to redwood and native trees. Impact BIO-9 is explicit in documenting the trees and species that would be removed. Impact BIO-10 is thorough in documenting the nature of root damage that can occur under various disturbance regimes. In both instances, the alternative that results in the least possible impact to trees, consistent with meeting the objectives of the project, should be selected.

5

Comment: We do not agree that the potential loss of eight trees at Station 270-25 (for installation of a retaining wall), plus nine trees under Option A, is biologically *insignificant*, even on a watershed basis (Page 206). Each individual contributes to a large, mature canopy that is rich in wildlife and helps to sustain the Lagunitas Creek riparian corridor. Mitigation Measures BIO-9a and 9b call for replanting trees of the same species at a 3:1 replacement ratio. As with similar, widely employed mitigation measures, these new specimen plantings will take many decades to reach the maturity of the specimens they replace and therefore will not mitigate the loss to a level of insignificance. The mitigation measures detailed in BIO-10a to i, designed to limit damage to redwood roots, are very detailed. Our concern, however, is with the potential long-term impacts from compaction of soil, root pruning and smothering, alteration of drainage patterns, and other damage to root zones that may not show the evidence of weakened or diseased trees for many years. Due to this uncertainty, we do not accept that the mitigation measures will reduce the level of impact on redwood trees to less than significant.

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Hydrology and Water Quality

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Impact HYD-1: This impact considers the possible contribution of stormwater runoff that could contribute to violation of water quality standards or waste discharge requirements, or substantially degrade the water quality of Lagunitas Creek and/or Tomales Bay. The mitigation measure HYD-1a provides a series of BMPs to mitigate construction-related impacts. When coupled with the discussion under Impact BIO-5 and associated mitigation measures (impacts on federal and/or state listed salmonid species) a fairly comprehensive program emerges for protecting the water quality of Lagunitas Creek habitat during construction. Mitigation Measure (MM) BIO-5b and HYD-1b, which deal with post-construction (ongoing) operation and maintenance, are less satisfactory. MM BIO-5b consists of brief reference to the long-term Storm Water Management Plan (SWMP) that will be prepared prior to start of construction. MM HYD-1b lists four water quality improvement measures, such as establishing a vegetative buffer and installing vegetated swales with permeable backfill.

Comment: Since it is the operation of the road over time that will have long-term impacts on the Lagunitas Creek water quality and hydrology, the FEIR should provide more specific information to support these generic measures, in particular concerning the effectiveness of the proposed plantings and swales: (1) specifications for permeable soil type and treatment to assure maximum absorption of pollutant runoff; (2) the amount of soil filtration needed (volume per square yard/mile of roadway) to ensure pollutant runoff is mitigated to acceptable standards; (3) what plantings are best to absorb the pollutants in the soil (“indigenous” species covers a wide variety of possibilities)? (4) What monitoring and/or long-term maintenance plan will be required to ensure continued absorption of roadway runoff pollutants? (5) If roadway swales are not normal bio-swales, and actually serve as a drainage conduit, should there be sumps where pollutants can be accumulated and removed with periodic maintenance?

Traffic and Circulation

9

Comment: The Traffic and Circulation impact analysis is based on the single premise that because the project will not increase the capacity on SFDB, the project will not result in permanent increased traffic. Therefore, only increases in traffic volume of construction-related traffic are analyzed (Page 283). This premise does not seem reasonable, in that we can expect increased use of SFDB from Butterfield Rd. to State Rte. #1 due to: 1) projected population growth in Marin, and 2) increased tourism travel to and from West Marin on this route. By what factor might traffic increase due to these conditions, and in what periods of time? Further, it seems reasonable to expect that the improvement to SFDB may in itself attract users, most likely at higher speeds. Can we use an increase in Vehicle Miles Traveled (VMT) of 25-26 per cent for the County as a whole as a proxy for increased traffic on this roadway segment? Additional traffic impact analysis in this regard would be useful.

10

Alternatives

11

Comment: The "Resurface Alternative" is presented with minimal other improvements, such as culvert replacement and other repairs that are environmentally beneficial and are included only in the "environmentally superior alternative." Given the extent of the work needed for just resurfacing, it appears counterintuitive that defective culverts would not be replaced. In addition, bank repair and other slides could be included in this alternative as reasonable although minimal improvements. There appears to be a deliberate attempt in the DEIR to reduce the environmental benefits of this alternative in comparison to the Mitigated Alternative.

Thank you for this opportunity to comment.

Nona Dennis
President

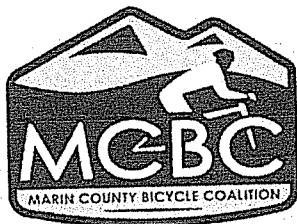
COMMENTER B5

Marin Conservation League; Nona Denis, President (June 24, 2010)

- B5-1: The authors of the EIR and the County do not agree with the conclusion of this comment. The Draft EIR, across 350 pages of text, tables, and graphics, provides a detailed presentation of potential impacts and then specifically links each potential adverse impact to mitigation measures designed to reduce those impacts to a less than significant level. The comment states the opinion that the Draft EIR does not present the necessary supporting information to support the findings of the Draft EIR. Although this statement questions the adequacy of the Draft EIR, it does not provide specific examples. No changes to the Draft EIR are required.
- B5-2: As stated in Section 3.4.1 of the Draft EIR (pg. 72), pavement rehabilitation would be achieved by creating a stable base course over which two layers of asphalt would be applied. The first of these two layers would consist of RAC; the uppermost layer would consist of a permeable friction course. Please see Master Response 2.
- B5-3: The request for more detailed discussion of measures to protect against long-term water quality degradation to salmonid habitat is noted. Please see Master Response 9 for a discussion of salmonids.
- B5-4: The assertion that the Draft EIR is explicit in documenting the potential tree removal and root damage associated with the project is noted. The comment also states that the alternative that results in the least possible impact to trees, consistent with meeting the objectives of the project, should be selected. The authors of the EIR and the County agree. For this reason, Section 5.5 of the Draft EIR (pages 349-350) identifies the Mitigated Roadway Alternative as the Environmentally Superior Alternative because it would achieve all of the basic objectives of the project objectives as the proposed project, but would reduce the number of trees to be removed and avoid visual impacts associated with the installation of retaining walls.
- B5-5: The EIR authors and the County do not agree with the commenter's conclusion that tree removal associated with the proposed project is biologically significant, even on a watershed basis. Please see Master Response 6 related to tree removal.
- B5-6: The EIR authors and the County do not agree with the commenter's conclusion that Mitigation Measure BIO-9a and BIO-9b would not reduce tree removal impacts to a less-than-significant level. Please see Master Response 6.
- B5-7: The EIR authors and the County do not agree with the commenter's conclusion that Mitigation Measures BIO-10a through BIO-10i would not reduce potential impacts to tree roots to a less-than-significant level. Please see Master Response 7 related to tree roots.
- B5-8: Please see Master Response 11.
- B5-9: The comment correctly states that because the project would not increase the capacity of SFDB, the Traffic and Circulation section does not presume any increase in traffic volume as

a result of the project. The comment also notes that growth in traffic could be expected due to projected population growth in Marin and increased tourism travel to and from West Marin. The purpose of the DEIR is to analyze the effects of the proposed project, which in this case includes rehabilitation of and safety improvements to the existing roadway. Ambient population growth and/or growth in tourism traffic would generally be caused by additional development in urbanized areas or expansion of tourist facilities, which would be projects subject to a separate evaluation. As rightly noted in the DEIR, rehabilitation and safety improvements to SFDB would not generate additional vehicle trips in and of itself.

- B5-10: The comment asserts that rehabilitation and safety improvements to SFDB would likely attract additional traffic to the facility. In certain situations, improvements to a roadway can attract additional vehicle trips. For example, if there are two parallel routes (Route A and Route B) and Route B is improved to add additional lane capacity, it is likely that some drivers who previously used Route A would now choose Route B because of the reduced congestion and resulting decrease in travel time. It is unlikely that this phenomenon would be experienced along SFDB because of the lack of equivalent parallel routes, and because the project would not increase the capacity of the roadway. There is no basis for assuming an increase in the number of vehicles choosing to travel on SFDB or a resulting increase in vehicle miles traveled as a result of the proposed project.
- B5-11: The EIR authors and the County do not agree with the commenter's conclusion. The alternatives presented in Section 5.0 of the Draft EIR (pages 341-350) are sufficiently different from one another so as to provide for meaningful comparison to the proposed project and to one another. Please see Master Response 12.



www.marinbike.org

V 415 456 3469

F 415 456 9344

733 Center Blvd.

Fairfax, CA 94930

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JUN 23 2010

MARIN COUNTY
 DEPARTMENT OF PUBLIC WORKS

June 18, 2010

Mr. Dave Bernardi
 Marin County Department of Public Works
 3501 Civic Center Drive- Room 404
 San Rafael, CA 94903

Re: Sir Francis Drake Boulevard Rehabilitation DEIR Comments

Dear Mr. Bernardi:

The Marin County Bicycle Coalition is pleased to submit comments regarding the Sir Francis Drake Boulevard Rehabilitation Project Draft Environmental Impact Report. The Marin County Bicycle Coalition wishes to maximize safety throughout this corridor for bicyclists and all other users, while minimizing adverse impacts to the ecological environment including trees, riparian vegetation, water quality, aquatic and terrestrial species, etc.

Since 1999, there have been four bicyclists killed in West Marin – making West Marin the most dangerous place to bicycle in all of Marin County. This stretch of Sir Francis Drake Boulevard through Samuel P. Taylor State Park has many hazards that the Rehabilitation Project seeks to remedy; we hope that roadway improvements can be made while minimizing ecological damage to the ecosystem.

As such, the Marin County Bicycle Coalition supports the Mitigated Roadway Alternative proposed by the County of Marin in the DEIR. This alternative improves safety by improving roadway surface conditions and widening shoulders where possible.

The Marin County Bicycle Coalition additionally prefers the Mitigated Roadway Alternative because it eliminates Option A. While Option A creates wider shoulders for 2400 feet of the 5.2 mile project area, we believe that this widening will result in increased speeds of motorists and could actually make the roadway more dangerous for bicyclists. As noted in Figure 6 of the October 17, 2008 *Sir Francis Drake Boulevard*

Rehabilitation Project report by the County of Marin and TAM, the majority of crashes in the Project Area are associated in areas where the roadway has fewer trees and fewer sharp curves and where vehicles are traveling at higher speeds (at the west end of the Project Area). Because higher speeds produce increased dangers, we support efforts that provide traffic calming.

1

The Marin County Bicycle Coalition requests that 10.5-foot automobile lanes be further evaluated in the EIR, which would provide a higher degree of traffic calming while creating additional shoulder width for bicyclists and pedestrians. In general, MCBC requests that the project provide maximum possible shoulder widths throughout the project area, even if the width varies throughout the 5.2-mile project length.


2

3

The Marin County Bicycle Coalition additionally requests that the County ensure that the interface between the rehabilitated roadway and turnouts be smooth and consistent. A ridge or lip between the roadway surface and the turnouts would create a hazard for bicyclists.

We appreciate the opportunity to comment on this EIR and look forward to working with the County and other stakeholders to protect the safety of all users in this corridor while ensuring minimum negative impacts to the ecological environment.

Sincerely,



Andy Peri, Advocacy & Outreach Coordinator
Marin County Bicycle Coalition

COMMENTS B6

Marin County Bicycle Coalition; Andy Peri, Advocacy and Outreach Coordinator (June 18, 2010)

B6-1: The request to consider a narrow travel lane and maximum shoulder widths is a project merits issue. Sir Francis Drake Boulevard (SFDB) is the major east-west connector between rural communities in West Marin and the more urbanized portions of eastern Marin County and the San Francisco Bay Area. As such SFDB is the main corridor for transporting goods and materials to West Marin. The roadway carries a significant number of large commercial trucks as well as recreational vehicles and trucks with horse trailers. A typical travel lane that carries all types of vehicles and trucks is normally 12 feet in paved width. The proposed project due to the sensitivity of environmental resources in the area is designed with 11-foot paved widths. A small portion of the roadway has a proposed 10 foot lane width due to the steepness of the adjacent up-slope and the proximity of the Lagunitas Stream bank.

The Department of Public Works does not support the reduction of the paved lane width to 10.5 feet because of the types of vehicles served by the roadway.

B6-2: The request that the project provide maximum possible shoulder widths throughout the project area is noted. In developing the proposed project, the County has attempted to balance the need for a rehabilitated roadway, including widening in selected areas with the desire to protect the natural resources in the project area. To the extent feasible, wider shoulders have been accommodated as part of the proposed project. This comment related to the merits of the proposed project and not to the adequacy of the Draft EIR; therefore no further response is required. Please see Master Response 1.

B6-3: The request for the County to ensure that the interface between the rehabilitated roadway and pullouts be smooth and consistent is noted. The comment relates specifically to the proposed project and does not identify errors or improper analysis contained in the Draft EIR; therefore, no further response is necessary. Please see Master Response 1.

From: David Bernardi <dbernardi61@gmail.com>
Date: June 25, 2010 8:22:28 AM PDT
To: John Roberto <jraplan@sbcglobal.net>
Subject: Fwd: Sir Francis Drake Boulevard Rehabilitation Project Draft EIR

----- Forwarded message -----

From: **Connie Berto** <cberto3@sonic.net>
Date: Thu, Jun 24, 2010 at 11:01 PM
Subject: Fwd: Sir Francis Drake Boulevard Rehabilitation Project Draft EIR
To: dbernardi61@gmail.com

Dave, copy sent to Supervisors and Horse Council directors also.
Regards, Connie B.

----- Original Message ----- **From:** Connie Berto cberto3@sonic.net **To:** eklock@co.marin.ca.us **Sent:** Thu 24/06/10 10:48 PM **Subject:** Fwd: Sir Francis Drake Boulevard Rehabilitation Project Draft EIR

Dear Mr. Klock:

The Marin Horse Council, Inc. (MHC) is a California non-profit based in Marin County, founded in 1981 to unite equestrians and to maintain the horse as part of the landscape and lifestyle of Marin County. On behalf of the MHC, I am pleased to comment on the issue of Traffic and Circulation as part of the subject project through S.P. Taylor State Park. Renovation is badly overdue on this major arterial.

Each week there are many vehicles pulling horse trailers along this route. Such a rig is pictured on p. 133, Fig. 4.2-1 of the Draft EIR. Point Reyes National Seashore attracts dozens of such rigs every week, often 15 per day at Bear Valley Center. The Stewart Horse Camp south of Olema accommodates about 2,000 horse campers each season. Almost all of these rigs come through Taylor Park enroute to or from West Marin.

1

Equestrian rigs and slow-moving vehicles need better pullouts to allow faster traffic to overtake and pass safely. By law, one must pull over to the side when five vehicles are being delayed. Currently, there are few places (i.e., driveways) in the Park where rigs can safely move aside. Horsemen will not drive off the road when there is a high dislocation from the roadbed to the shoulder because we don't want the horses to be thrown around by the dropoff and/or potholed shoulder. Figure 3.4-2, p. 77, shows that three eastbound pullouts and two westbound pullouts (at the far eastern end) will be retained post-renovation.

2

3

Drivers need pullouts that are long enough for rigs to stop gradually and safely and to get back on the road safely. While the length and style of the "typical pullout" (p. 77) depicted is good, we feel that the two planned westbound pullouts are too close together. We prefer at least three westbound pullouts spaced more evenly along this section. Similarly, we would like the three eastbound pullouts to be spaced more evenly through the Park.

4

It is regretful that a minimum of cherished trees must be cut down to improve the roadbed for the safety of vehicles and bicycles. We feel, however, that the resultant "gaps" will be short-lived visual effects and the lush greenery of the remaining trees will maintain the beauty of this area. No one knows how many scores of trees had to be removed when the original railroad bed was laid and the roadway built. Safety of road users should be a major consideration.

Thank you for the opportunity to comment. We look forward to traversing the "new, improved, and safer" Sir Francis Drake Boulevard in the future.

Sincerely, Connie Berto, Director, Marin Horse Council Inc.; 70 Crane Drive, San Anselmo, CA 94960. Phone: 415-454-2923.

COMMENTER B7

Marin Horse Council; Connie Berto, Director (June 24, 2010)

- B7-1: The statement that equestrian rigs and slow-moving vehicles need better pullouts to allow faster traffic to pass safely is noted. The proposed project would provide new paved pullouts in appropriate locations and of adequate size and configuration to accommodate vehicles traveling along the roadway. The comment relates specifically to the proposed project and does not identify errors or improper analysis contained in the Draft EIR; therefore, no further response is necessary. Please see Master Response 1.
- B7-2: The comment that horsemen would not drive off the road when there is high dislocation from the roadbed to the shoulder is acknowledged. The comment relates to the merits of the proposed project and not the adequacy of the Draft EIR. No further response is required. Please see Master Response 1.
- B7-3: The request for three evenly spaced westbound pullouts and three evenly spaced eastbound pullouts is noted. The comment relates to the merits of the proposed project and not to the adequacy of the Draft EIR. No further response is required. Please see Master Response 1.
- B7-4: The comment states that safety of road users should be a major consideration, even if trees must be cut down to improve the safety of vehicles and bicycles. As described in Response to Comment B6-2, the County has attempted to minimize the environmental impacts of the proposed project, while still meeting the objectives for the roadway, including increased safety for motorists and bicyclists. This comment relates to the merits of the proposed project and not to the adequacy of the Draft EIR; therefore no further response is required. Please see Master Response 1.

JUN 28 2010

SAN GERONIMO VALLEY PLANNING GROUPMARIN COUNTY
DEPARTMENT OF PUBLIC WORKS

June 25, 2010

To: County of Marin, Dept. of Public Works
Attn: Ernest Klock, Principal Civil Engineer
3501 Civic Center Drive, Room 404
San Rafael, CA 94903
From: San Geronimo Valley Planning Group
Re: Comments on the DEIR for the SF Drake Blvd. Rehabilitation Project

Dear Mr. Klock,

Prior to becoming chairperson of the SGV Planning Group, I was included on the bus tours beginning in February 2007 that allowed naturalists, regional representatives, environmental activists and community representatives to weigh in with questions, comments, suggestions and, more recently, an update. The tone was indelibly set on the first tour by Supervisor Kinsey's introductory comment, "This is a fish project with a road on it." That statement describes the Planning Group's bias and priorities in our review of the document.

I spoke at the public scoping session in Woodacre, submitted a letter in November 2008 and, as chair of the Planning Group, provided verbal testimony at the June 15, 2010 hearing before the Board of Supervisors.

INTRODUCTION

Samuel P. Taylor State Park is a unique visual, aesthetic, cultural and natural resource protecting native plants and wild life including stately redwoods and a spawning ground for endangered and threatened salmonid species. It was preserved due to the efforts of the Marin Conservation League and honored by them with a special tour of the area during the League's 75th anniversary celebration last year.

Heading west, the Park is the gateway to the recreational and agricultural resources of West Marin and the "road home" to the estuary and ocean for anadromous species. It is of inestimable value to the statewide community. Heading east, the terminus for this project is the Inkwells, where Lagunitas Creek meets San Geronimo Creek. The legendary stepped pools of the Inkwells when filled to overflowing, are the eastern "road home" to natal streams in the San Geronimo Valley (SGV) for endangered coho salmon and threatened steelhead trout.

The SGV is listed as one of the top critical areas for conservation in the CCC Coho Recovery Plan. The Assoc. of Bay Area Governments designated the SGV as a Priority Conservation Area and the SGV Community Plan stresses and details the importance of this resource and how to protect it. MMWD has been working for over 10 years improving creek conditions with woody debris projects and fish studies and the Planning

Group has partnered with the County on a project to implement the Salmon Enhancement Plan. Consequently, the SGV Planning Group is committed to protecting Taylor Park for current and future generations so they can experience these redwoods and the migration and spawning of salmon into the headwaters of the SGV.

Unfortunately, road construction standards and culvert placement during the 1900's did not take into consideration environmental impacts. Regrettably, coho salmon in the SG Lagunitas watershed are close to extinction. And so today we are trying to resolve man made problems with man made solutions and address recreational access by cars and bicyclists. Given this history and current needs the Planning Group submits the following comments and suggestions to protect and preserve Taylor Park, Lagunitas Creek, salmonids and also accommodate the needs of motorists and bicyclists.

Thank you for the opportunity to review and comment on the DEIR for the proposed SF Drake Blvd. Rehabilitation Project. The comments below reflect the goals and objectives of the SGV Community Plan and Salmon Enhancement Plan.

TRANSPORTATION/CIRCULATION

PULLOUTS – Existing pullouts have been created over time to accommodate vehicular traffic without regard to environmental impacts. Not surprisingly, their existence has created excessive damage to the riparian habitat; created erosion and increased sediment to Lagunitas Creek harming spawning grounds of endangered coho salmon and threatened steelhead trout.

The EIR includes alternatives that describe removing most pullouts. This is a significant benefit that will facilitate in the restoration of riparian habitat, elimination of social trails to the creek and limit erosion and resulting sediment issues.

The EIR needs to clarify:

- 1 a. The composition of the permeable concrete and any toxins that could impact riparian habitat and water quality during construction and after completion.
- 2 b. We have some concern about the amount of water that will be discharged when the water hits the impermeable layer and is directed to nearby culverts. The EIR should consider mitigating this impact through sheet drainage in appropriate areas.
- 3 c. Clarify that where the road pavement joins the pullout pavement there is no change that could impact the safety of a cyclist.

Having written that we have a suggestion:

4 Alternatives in the EIR should consider designating the area as a "Safe Driving Zone in a State Park" and limit the speed limit to 30 miles per hour as well as dramatically increase penalties for speeding. This would eliminate the need for pullouts and increase safety for road bicyclists. This is not an unreasonable suggestion given that this 5.4 mile stretch is through a beautiful redwood forest and can be driven in 10 minutes. (Using the current speed designations of 30 and 40mph the 5.4 miles stretch can be driven in 8.5 minutes.)

5 **ROAD WIDENING** - Alternatives are included that propose road widening to increase sight lines in order to improve safety. On the contrary, it will decrease safety. Road

- 5 con. | widening invites drivers to speed up and "cut corners" increasing danger to motorists and bicyclists. The EIR should include historical information that shows that the accidents and dangerous areas are not in the narrow 9' – 10' wide lanes at the east end of this project but at the western end where the lanes are up to 12' wide with up to 4' shoulder and longer sight lines. Clearly, the wider the road the heavier the foot on the gas pedal. The EIR should include information that road safety issues in Golden Gate Park in SF were resolved by narrowing the roads, not widening them. This leads to
- 6 | another suggestion in the alternatives -- a "Safe Driving Zone" at 30 miles per hour might qualify for a 10' lane (instead of 11') that would be consistent through this area and would allow an extra 1' shoulder. Road cyclists are highly skilled and fast moving. Bicycles are vehicles and riders are subject to the Vehicle Code. As such they must share the road with motorists and can do this more safely with the narrower road and increased shoulder that we propose, reduced speed zones and strict enforcement of enhanced speeding penalties.
- 7 | The disadvantage of narrow lanes, that the EIR needs to address, is 3 axle trucks that currently go over the double line in some areas.
- 8 | The existing road alignment is not a consistent distance from the creek. The EIR should specify how the proposed road/shoulder/pullout changes (resulting in some realignment) would impact the creek where the changes are within 100' of the creek and there is no buffer. Will this result in further bank instability? How will the proposed changes be impacted by the natural meandering process of the creek and flood season?

DRAINAGE AND SLOPES -

9 | Drainage and slopes: While we want to preserve the redwoods we will consider an exception in the area near Shafter bridge where the drainage and slope issue is causing sediment and other damage to the creek worse than the removal of a redwood and some other trees. While this is a hard choice to make, it may nevertheless be the best balancing act. Given the location of this problem and the steepness of the EIR should address the additional impact of construction and tree removal on adjacent areas of the upper bank and the creek bank.

10 | ROAD SHOULDERS – Saving the redwoods will cause the shoulders to "meander in width from 0' to 4' for this 5.4 miles stretch. It is erroneous to consider a meandering shoulder as a route for primary travel for fast moving road cyclists. Weaving in and out would be exceedingly dangerous. Road shoulders are not bike lanes. But bikers will move into the shoulder for their own safety and when riding in groups to accommodate special circumstances as is commonly done in other areas. It is important to note that this project is not to fund a bike lane but to make road improvements for vehicles (autos and bicycles). One alternative suggests removing a redwood to gain one foot of shoulder width. This is not acceptable. The removal of a mature redwood creates an irreparable harm that may be justified to protect the riparian habitat but not to accommodate a desire for speed or to promote sport.

- 11 | The EIR needs to address shoulder maintenance.

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- a. Either the County or Parks administration need to regularly maintain the removal of redwood sprouts that take up significant space at the base of redwoods next to the road.
- b. The EIR should include some discussion regarding maintenance of road shoulders being kept free of branches, leaves, etc. for safety purposes.

HAZARDOUS AND HAZARDOUS MATERIAL

12

Pavement rehab: The alternatives in the EIR must include information about the construction materials and chemicals being proposed for use on the road, proposed pullouts and retaining walls. We support a "zero tolerance". These materials must not

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be toxic, create damage to roots, leach into the soil or water nor create pollution in the short or long term. If some of the materials used need a period of stabilization the impacts need to be clearly delineated and mitigation spelled out. Alternatives in the EIR should also address impacts as a result of this project on habitat and salmonids between the edge of the project and the creek. Much of this project is in the Stream Conservation Area so pollutants from any construction or changes in the roadway are of concern.

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Clarify whether rubberized asphalt or another material will be used.

16

CULVERTS

The original placement, size and angle has been a serious ongoing problem most notable during the rainy season. The alternatives refer to better placement and sizing of some culverts. But others have been excluded because the question of right-of-way and ownership responsibilities came up. The EIR should at least discuss the impacts of leaving some of these culverts as they are.

17

WATER QUALITY

The EIR needs to include information regarding the impact of the loss of shade due to the removal of trees. It is our understanding that Lagunitas Creek has excess nutrients and the loss of creek cool shade could result in further degradation of water quality. The die off process of increased algal blooms can affect oxygen levels impacting the salmonids sensitive requirements.

18

BIOLOGICAL RESOURCES

Redwood tree removal will not only impact the park experience but have serious impacts on riparian habitat, fish habitat and water quality. Recent information indicates that SOD will soon return with a vengeance. Already the appendix indicates that there are over 90 trees that are unstable or affected by SOD. How will the projected loss of trees due to this disease added to the loss of redwood and other trees proposed to be removed impact these alternatives? What will be the cumulative impact?

19

The EIR needs to clarify how to mitigate the increase in both water and air temperature due to the proposed removal of redwoods, other trees and the expected loss of trees due to SOD.

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The EIR needs more information about mitigating the loss of trees that would be large woody debris if left to the natural renewal cycle as well as information regarding the

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source and quality of the woody debris proposed as replacement and its implementation schedule.

21

GLOBAL CLIMATE CHANGE

The EIR needs to include a more detailed timeline in order to assess impacts during the rainy and dry seasons.

22

NOISE

EIR alternatives need to address noise impacts that removing trees would cause to park visitors, campgrounds and campsites adjacent to the creek near SF Drake Blvd.

23

AESTHETICS AND VISUAL RESOURCES

EIR alternatives need to address light and glare impacts that removing trees would cause to park visitors, campgrounds and campsites adjacent to the creek near SF Drake Blvd.

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OPTION A – Option A is 100% anti-environment. Based on site visits and information provided, the removal of redwood and other trees would harm riparian and creek habitat as well as have serious cumulative consequences to salmonids. As stated earlier, Option A's purpose is to create wider lanes under the mistaken belief that longer sight lines and wider roads improve vehicular (auto and bike) safety. Given that the acquisition of Taylor Park was to recognize, preserve and protect the redwoods and salmon habitat for current and future generations Option A is not a reasonable alternative and should be removed from any consideration.

Sincerely,

Jean Berensmeier 

Chairperson

San Geronimo Valley Planning Group

415-488-9034

PO Box 57

Forest Knolls, CA 94933

COMMENTER B8

San Geronimo Planning Group; Jean Berensmeier, Chairperson (June 25, 2010)

- B8-1: The project proposes to use a permeable friction course, which is open graded asphalt concrete. A permeable friction course essentially has the same composition as the existing asphalt concrete, except the material has porosity to allow stormwater to filter through the medium at a rate that promotes settling of particulates and pollutants associated with particulates. The composition of the permeable friction course would comply with the California Department of Transportation Standard Specifications Section 39 (Asphalt Concrete). Therefore, use of the permeable friction course would not generate additional toxins. The control of pollutants associated with project construction activities that could potentially be discharged into Lagunitas Creek without implementing proper controls, would be addressed by Mitigation Measure HDYD-1a, which requires implementation of a Stormwater Pollution Prevention Plan (SWPPP). The SWPPP must be submitted to the Regional Water Quality Control Board with the application to obtain coverage under the Construction General Permit (Order No. 2009-0009-DWQ). For the project operational phase, the permeable friction course would provide better removal of particulate pollutants compared to traditional asphalt concrete. A field study sponsored by the Texas Department of Transportation reported 35 to 91 percent reductions in the concentrations of total suspended solids, total metals (copper, lead, and zinc), and total phosphorous in runoff from a permeable friction course compared to runoff from conventional asphalt.⁹
- B8-2: The proposed project would not change the cross slope of the roadway. Therefore, drainage patterns in the project area would remain the same.
- B8-3: The pullout and roadway pavement would be constructed with permeable asphalt pavement creating a joint free transition. Therefore, no change would occur where the road pavement joins the pullout pavement that could impact the safety of a cyclist.
- B8-4: The comment requests that the Draft EIR consider an alternative that designates the area as a "Safe Driving Zone" with a speed limit of 30 miles per hour and increases speeding penalties. While this may be a feasible alternative for improving the safety of motorists and bicyclists along the project alignment, it does not address the need to rehabilitate the roadway pavement. The authors of the EIR and the County believe that the alternatives presented in Section 5.0 of the Draft EIR (pages 341-350) are sufficiently different from one another so as to provide for meaningful comparison to the proposed project and to one another. Please see Master Response 12 and Master Response 1 related to the merits of the proposed project.
- B8-5: The request for historical information showing that accident rates are higher at the west end of the project alignment where the roadway is wider than the east end where the roadway is more narrow is acknowledged. A critical difference between the west and east sides of the project area is the alignment of the roadway. The western section has fewer curves and more

⁹ Barrett, M. E. and C. B. Shaw, Center for Research in Water Resources, University of Texas, Austin, 2006, *Stormwater Quality Benefits of a Porous Asphalt Overlay*, July 27, 2006.

straight sections than the eastern section allowing vehicles to travel at higher speeds. The higher speeds may result in an increase in the rate of accidents, although the actual causes of accidents may differ. As the proposed project does not significantly change the alignment of the roadway, the average vehicle speed should not increase.

- B8-6: The comment suggests that the “Safe Driving Zone” alternative described in Comment B8-4, above, include 10-foot travel lanes to encourage drivers to drive slowly through the project area. Please see Master Response 12.
- B8-7: The EIR authors and the County disagree with this comment. The purpose of the Draft EIR is to identify the adverse environmental impacts of the project as proposed, and recommend mitigation measures for identified impacts. The proposed project does not propose to narrow the existing travel lanes; therefore, the Draft EIR need not address the potential impacts associated with three-axle trucks crossing over the double yellow line with a narrower road.
- B8-8: Comment noted. Please see Master Response 4 for clarification on the distance of the roadway to the creek and the potential for the project to create bank instability.
- B8-9: The Draft EIR (pages 205-210 and 247-248) addresses the potential construction and tree removal impacts associated with the proposed project, including the area of the proposed slope repair at Station 27-+25. No changes to the Draft EIR are required.
- B8-10: The comment states that mature redwood trees should not be removed to accommodate a wider shoulder. This comment relates to the merits of the proposed project and not to the adequacy of the Draft EIR; therefore, no further response is required. Please see Master Response 1.
- B8-11: The request for information on shoulder maintenance is acknowledged. The County provides road shoulder maintenance on an as-needed basis and would do so for the proposed project alignment.
- B8-12: Section 4.5.4 of the Draft EIR (pages 263-264 and 265-269) addresses potential water quality impacts resulting from construction and operation of the proposed project. As described on page 265, hazardous materials including sediment, asphalt materials, concrete, fuels, oils, paints, solvents, and other potentially hazardous materials could enter Lagunitas Creek. Mitigation Measures HYD-1a and HYD-1b fully mitigate the potential water quality impacts associated with the proposed project. Please see Master Response 11 for further clarification regarding water quality impacts and proposed mitigation.
- B8-13: Cement treated backfill and asphalt pavement are the only proposed materials that must cure after application. As these materials would not be allowed to be placed prior to or during a rain event, there would be no impact on water resources.
- B8-14: Section 4.3.4 of the Draft EIR (pages 187-200) addresses the potential impacts to salmonids resulting from construction and operation of the proposed roadway rehabilitation project. Please see Master Response 9 for further clarification regarding salmonids.

B8-15: As stated in Section 3.4.1 of the Draft EIR (pg. 72), pavement rehabilitation would be achieved by creating a stable base course over which two layers of asphalt would be applied. The first of these two layers would consist of RAC; the uppermost layer would consist of a permeable friction course. Please see Master Response 2.

B8-16: The request for additional discussion regarding the culverts that would remain is noted. CEQA requires the Draft EIR to assess the potential physical environmental impacts associated with the proposed project as compared to the baseline conditions, the environmental conditions in the vicinity of the project as they exist at the time the Draft EIR is prepared. The culverts that would not be replaced would continue to operate as they currently do. Therefore, the Draft EIR need not assess the potential impacts of leaving these culverts in place. The proposed project is a roadway rehabilitation project, not a drainage improvements project or a culvert replacement project, although the proposed roadway rehabilitation project would also include such improvements. No further response is required.

B8-17: Comment noted. Please see Master Response 6 for further discussion of potential impacts associated with proposed tree removal, including loss of shade.

B8-18: Please see Master Response 8 for a discussion of the cumulative impacts of tree removal.

B8-19: Please see Master Response 7 regarding tree removal impacts and mitigation.

B8-20: Please see Master Response 7 regarding large woody debris.

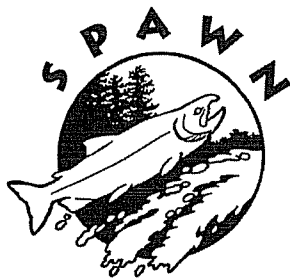
B8-21: Please see Master Response 5 regarding the proposed construction schedule.

B8-22: It is unclear whether this comment would like the Draft EIR to address noise impacts associated with the loss of trees (i.e., loss of potential noise screening for park visitors from passing vehicles) or construction noise associated with tree removal (i.e., chainsaws).

The noise impacts associated with construction activities, including tree removal are addressed in Section 4.10.4 of the Draft EIR (pages 314-316) and mitigation measures (Mitigation Measures NOI-1a through NOI-1f) are provided to reduce potential construction noise impacts to a less than significant level.

The potential removal of up to 17 trees with the proposed project may expose recreational areas that are currently shielded from traffic noise from SFDB. However, as described in Section 4.10.4 of the Draft EIR (page 314), the proposed project would replace the existing deteriorated asphalt concrete with RAC, which has the beneficial effect of reducing vehicle noise on roadways by up to 4 dbA. The reduction in vehicle noise associated with rehabilitating the proposed roadway would outweigh any potential increase in noise resulting from the removal of trees proposed as part of the project. Therefore, this impact is considered less than significant.

- B8-23: Section 4.2.4 of the Draft EIR (page 147) acknowledges that the loss of trees under Option A could open up views toward the road from nearby trails and campgrounds thereby potentially increasing vehicle light and glare impacts on trail users and campers. Mitigation Measure AES-1, which requires the County to identify those trees proposed for removal that currently shield campgrounds or trails and to include plantings or other methods to reduce potential light and glare impacts associated with tree removal, would reduce this impact to a less than significant level. No changes to the Draft EIR are required.
- B8-24: The comment that Option A is not a reasonable alternative and should be removed from consideration is acknowledged. This comment relates to the merits of the proposed project and not to the adequacy of the Draft EIR; therefore, no further response is required. Please see Master Response 1.



Salmon Protection And Watershed Network

PO Box 370 • Forest Knolls, CA 94933

Ph. 415.663.8590 • Fax 415.663.9534

RECEIVED

JUN 28 2010

MARIN COUNTY
DEPARTMENT OF PUBLIC WORKS

June 22, 2010

Marin County Department of Public Works (DPW)

Attn: Dave Bernardi, Senior Civil Engineer

3501 Civic Center Drive, Room 404 San Rafael, CA 94903

Re: Comments on the Sir Francis Drake Boulevard Rehabilitation Project
(SFDB Project) Draft EIR

Dear Mr Bernardi:

We appreciate the opportunity to comment on Marin County Department of Public Work's draft Environmental Impact Report for the Sir Francis Drake Boulevard Rehabilitation Project.

After review of the draft EIR, we remain deeply concerned about the scale of DPW's proposal to implement heavy construction to widen and repave Sir Francis Drake Boulevard along Lagunitas Creek, an ecosystem of state- and region-wide ecological significance.

As presented in our comments dated November 23, 2008, and strongly supported by local groups and residents, **we strongly recommend that an option to just repave the road without excessive disturbance – not widen the road- as well as implement an effective driver education program (signage and speed bumps encouraging slow speeds and sharing the road, enforcement for speeding) be considered as a viable, less costly and environmentally preferred option** to address rehabilitation of Sir Francis Drake Boulevard.

It is our opinion that the "Resurface Roadway Alternative" and "Mitigated Roadway Alternative" project as presented is inappropriate and that the draft EIR does not adequately analyze and present for public review the negative environmental impacts this project may have on Lagunitas Creek and federally listed Endangered coho salmon, California freshwater shrimp, threatened California red-legged frogs, steelhead trout and other species of special concern that occur in this highly sensitive area. Option A, to

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remove 9 large, redwood trees along Lagunitas Creek in the County's Stream Conservation Area, is completely unacceptable. This stretch of roadway is in federally listed critical habitat for these species and is a very important migratory corridor for listed salmonid species and this Project has the possibility for impacting this species both upstream and downstream of the area proposed to be modified.

The entire length of Lagunitas Creek within the project area (and an adjacent 300' riparian zone) is designated as critical habitat for both the Central California Coast steelhead trout (Federal Register / Vol. 70, No. 170 / September 2, 2005); and Central California Coast coho salmon (Federal Register / Vol. 64, No. 86/May 5, 1999). The National Marine Fisheries Service and CA Department of Fish and Game just declared that CCC ESU Coho are **on the verge of extinction and that Lagunitas Creek is key to recovery of the entire ESU.**

Lagunitas Creek is also habitat for endangered California Freshwater Shrimp (*Syncaris pacifica*) and Red-Legged Frog (*Rana aurora draytonii*) as well as "at risk" species such as the Western Pond Turtle (*Clemmys marmorata marmorata*). California Spotted Owls (*Strix occidentalis*) also occur in the project area.

Below, we summarize our select concerns related to procedure for the public scoping phase of the draft EIR scoping as well as on concerns about the cumulative impacts on protected resources of this Project.

Project Scope and Failure to Notice the Public of Changes to the Project

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After hearing numerous concerns from a number of Marin groups regarding the toxicity of the material being proposed for repaving the roadway, at the close of the public hearing held at the Marin BOS chambers on June 15th 2010, the consultants casually notified the BOS and public that a major component of the project as presented had been changed. The public has been given no details on this modification and no opportunity to review this change, and there is no additional public hearing or draft being presented to the BOS or public and we believe this represents a possible illegal procedure. This represents a possible violation of public process. Please address this.

Loss of and Damage to Riparian Habitat in Designated Critical Habitat for Endangered Coho Salmon

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Proposed Option A: The removal of 9 large, redwood trees in the riparian zone directly adjacent to Lagunitas Creek) in order to widen the road and increase line-of-sight would qualify as destruction and/or adverse modification of designated critical habitat for endangered salmonids in the Lagunitas Watershed. For this reason, we strongly oppose Option A to remove 9 large, redwood trees to increase road width along Lagunitas Creek. In particular, the draft EIR greatly understates the negative cumulative impacts of the removal of these redwood trees.

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Additionally, the Project as proposed is likely to have significant damaging impacts on the health of adjacent trees from heavy equipment and construction, many of which are redwoods with shallow and branching root-systems.

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1. The cumulative impact assessment of the proposed tree removal for roadway expansion are completely inadequate:
 - The EIR overlooks that the removal of any large tree (as proposed in Option A) in a forest, especially of very large trees like those being proposed for removal, cause instability in the surrounding forest and will likely require removal of additional trees as they become a safety issue. This issue has arisen on forested parcels in the San Geronimo Valley before.
 - The EIR does not evaluate the cumulative impacts of the recommended removal of an additional 141 “diseased” native trees (Arborist report in Appendix)
 - The EIR does not adequately address the impacts of road crushing on the health of redwood tree root systems.

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Please provide a qualified assessment of the anticipated impacts to individual stands of trees in designated critical habitat in relation to the impact of heavy machinery and construction on the root structure of redwood trees along the proposed construction reach. A thorough assessment of the potential impacts needs to be disclosed using scientifically appropriate metrics.

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2. The project proposes to decommission turnouts in the riparian-zone based on the claim that these contribute to sediment erosion. DPW also proposed to simply block off decommissioned turnouts with rock or wood.
 - a. Indicate which data support your claim that significant erosion occurs from these existing turnouts qualifying their up-grade;
 - b. Indicate environmental, and safety and public access, impacts from more concentrated usage of fewer turnouts as being proposed in the current proposal;
 - c. Indicate how the proposal fully considers restoring habitat in decommissioned areas with appropriate native vegetation, instead of simply blocking off these areas with rock and wood as currently being proposed.

Impacts to Water Quality In Lagunitas Creek: Lagunitas Creek is already listed the under the Clean Water Act under 303 (d) as “Impaired” for sediment, pathogens and nutrients. Polluted runoff from the roadway both during and post-construction will have a negative impact on the environment. The following paragraph is referenced from Sandhal et al. 2007, a peer reviewed publication authored by university and government agency scientists

“Motor vehicles are a major source of toxic contaminants such as copper, a metal that originates from vehicle exhaust and brake pad wear. Copper and other pollutants are deposited on roads and other impervious surfaces and then transported to aquatic habitats via stormwater runoff. In the western United

*States, exposure to non-point source pollutants such as copper is an emerging concern for many populations of threatened and endangered Pacific salmon (*Oncorhynchus spp.*) that spawn and rear in coastal watersheds and estuaries."*

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DPW proposes to apply an overlay of rubberized asphalt concrete (RAC) - a road material made of recycled tires. **RAC leaches copper, a pollutant that is known to cause significant harm at very low levels to coho salmon and rainbow trout (see attached summary).** What specific pollutants are anticipated to originate from this surface? Indicate how will these pollutants impact protected and endangered aquatic resources – currently the EIR devotes two paragraphs to these critical issues.

DPW must also thoroughly address the following areas of concerns to adequately address the Cumulative Impacts of the Project:

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1. What are the identity and current loads of existing pollutants from the current use of this road?
2. Will/How will the project specifically increase/decrease these loads? Please propose an effectiveness monitoring program.
3. What is the specific duration of construction activity being proposed? Will construction be restricted to the dry season only to avoid discharge of construction pollutants?
4. PAHs, heavy metals, and particulate matter from diesel emission during the construction and daily traffic is likely to have a negative impact on water quality as these materials settle in the watershed and wash into waterways. Indicate how this project will impact loads of these emissions into waterways, and how these will impact listed species.
5. Milling, crushing and grinding the existing roadway surface is likely to produce significant toxic dust and runoff. Indicate what specific pollutant discharges (identity and quantity) are anticipated to occur, and what the impacts on aquatic health from these releases of pollutants are anticipated to be.
6. Disclose what type of sealants DPW is proposing to use on the roadway and how these could potentially impact aquatic resources. A USGS study (<http://www.usgs.gov/newsroom/article.asp?ID=718>) has shown that coal-tar based sealants are shown to have extremely elevated concentrations of polycyclic aromatic hydrocarbons (PAHs). PAHs are toxic to aquatic life. Possible effects of PAHs on aquatic invertebrates include inhibited reproduction, delayed emergence, sediment avoidance, and mortality. Possible adverse effects on fish include fin erosion, liver abnormalities, cataracts, and immune system impairments.
7. Indicate what maintenance procedures are being proposed to ensure that pollutants originating from regular vehicular traffic will be prevented from entering the streams during construction AND over the longer-term? DPW must demonstrate how their management actions (short and long-term) will strive to reduce these pollutants.

8. Indicate what maintenance procedures (and funding commitment) DPW is proposing to ensure removal of debris and particulates from the roadway and pervious surfaces to ensure project performance and minimize impacts on water-quality. Commitment and funding for short and longer-term maintenance procedures must be demonstrated before this project can be adequately assessed for its impacts.

Sincerely,



Todd Steiner

SPAWN Executive Director

Copper: Adverse Effects on Salmonids

Scientific Abstracts and References

Compiled by: Dr. Carol Ann Woody
 Fisheries Research and Consulting
 Anchorage, AK carolw@alaskalife.net
fish4thefuture.com

The following information was collected from recent peer reviewed scientific publications. The full text of each article is available from the journal and publisher cited. Cu = copper.
 * Indicates annotations by C. Woody for clarification or explanation. Questions or comments or criticisms greatly appreciated. For information on the importance of olfaction to fish see the Salmon Ecology 101 Fact Sheet.

Pyle, GG, and RS Mirza. 2007. Copper-impaired chemosensory function and behavior in aquatic animals. Human and Ecological Risk Assessment. 13 (3): 492 – 505.

Abstract: Chemosensation is one of the oldest and most important sensory modalities utilized by aquatic animals to provide information about the location of predators, location of prey, sexual status of potential mates, genetic relatedness of kin, and migratory routes, among many other essential processes. The impressive sophistication of chemical communication systems among aquatic animals probably evolved because of the selective pressures exerted by water as a "universal solvent." Impairment of chemosensation by toxicants at the molecular or cellular level can potentially lead to major perturbations at higher levels of biological organization. We have examined the consequences of metal-impaired chemosensory function in a range of aquatic animals that represents several levels of a typical aquatic ecosystem. In each case, low, environmentally relevant metal concentrations were sufficient to cause chemosensory dysfunction. Because the underlying molecular signal transduction machinery of chemosensory systems demonstrates a high degree of phylogenetic conservation, we speculate that metal-impaired chemosensation among phylogenetically disparate animal groups probably results from a common mechanism of impairment. We propose developing a chronic chemosensory-based biotic ligand model (BLM) that maintains the advantages of the current BLM approach, while simultaneously overcoming known difficulties of the current gill-based approach and increasing the ecological relevance of current BLM predictions.

**'Safe' heavy metals hit fish senses. 18:16 09 April 2007.
 NewScientist.com news service. Aria Pearson**

Pollution far below the level seen as dangerous for aquatic life has nevertheless dramatically altered animal behaviour in North American lakes. Heavy metals are knocking out the sense of smell in organisms from bacteria to fish. Even we may not be immune.

Nathaniel Scholz, at the Northwest Fisheries Science Center in Seattle, Washington, and colleagues found that **salmon lose their sense of smell if there are even low levels of copper in the water** they are swimming

in. The fish could die as a result, because they cannot smell chemicals that would warn of a nearby predator.

All over the world, storm water run-off shuttles heavy metals such as copper and zinc from industry, mines and built-up areas into natural water courses. The concentrations are generally low - too low for polluters to bother about, or so many of them seem to have thought. "Now we're going after [this] 'So what?' question," says Scholz.

Scholz's team kept young coho salmon in tanks with different concentrations of copper for 3 hours, then measured their movements when a drop of salmon skin extract was added to the water. In the wild, the skin would be a cue that a predator may have injured a fish nearby.

Unexposed salmon stopped swimming, sank to the bottom of the tank and kept still - typical tactics for avoiding predators. But fish exposed to concentrations of copper as low as 2 parts per billion (ppb) just stopped for a few seconds, or merely slowed down, while fish exposed to 10 or more ppb didn't notice the cue at all (*Environmental Science and Technology*, DOI: 10.1021/es062287r).

The US Environmental Protection Agency has set the maximum safe level of copper for aquatic life at 13 parts per billion, well above that needed to wipe out the salmon's ability to sense chemical cues. Yet Greg Pyle, at Nipissing University in North Bay, Ontario, Canada, has found chemosensory problems at three levels of the food chain at or below 5 ppb, the limit set by Ontario's water quality standards. "The phenomenon is ubiquitous," he says.

Leeches lost their ability to smell food, zooplankton were unable to evade predators, and fathead minnows couldn't recognize their eggs: the fish ate them instead of protecting them. The contamination in these lakes is much too weak to kill these organisms outright, Pyle says, yet their populations are suffering.

Metals may have the same effect in humans. The makers of the cold remedy Zicam, which contains zinc, recently settled out of court for \$12 million with people who reported losing their sense of smell after spraying the product into their noses. The company maintains the remedy is safe. Studies have not been conducted to test whether zinc destroys human sensory abilities, but given what's happening in aquatic ecosystems, Pyle believes it could. "Don't squirt metals up your nose," he says. "That would be my advice".

Sandahl, JF, DH Baldwin, JJ Jenkins and NL Schlotz. 2007. A sensory system at the interface between urban stormwater runoff and salmon survival. *Environ. Sci. Technol.* 41:2998-3004.

Abstract: Motor vehicles are a major source of toxic contaminants such as copper, a metal that originates from vehicle exhaust and brake pad wear. Copper and other pollutants are deposited on roads and other impervious surfaces and then transported to aquatic habitats via stormwater runoff. In the western United States, exposure to non-point source pollutants such as copper is an emerging concern for many populations of threatened and endangered Pacific salmon (*Oncorhynchus spp.*) that spawn and rear in coastal watersheds and estuaries. To address this concern, we used conventional neurophysiological recordings to investigate the impact of ecologically relevant copper exposures (0-20 µg/L for 3 h) on the olfactory system of juvenile coho salmon (*O. kisutch*). These recordings were combined with computer-assisted video analyses of behavior to evaluate the sensitivity and responsiveness of copper-exposed coho to a chemical predation cue (conspecific alarm pheromone). The sensory physiology and predator avoidance behaviors of juvenile coho were both significantly impaired by copper at concentrations as low as 2 µg/L. Therefore, copper-containing stormwater runoff from urban landscapes has the potential to cause chemosensory deprivation and increased predation mortality in exposed salmon.

Baldwin, DH, JF Sandahl, JS Labenia, and NL Schlotz. 2003. Sublethal effects of copper on coho salmon: impacts on nonoverlapping

receptor pathways in the peripheral olfactory nervous system. Environmental Toxicology and Chemistry. 10:2266–2274.

Abstract: The sublethal effects of copper on the sensory physiology of juvenile coho salmon (*Oncorhynchus kisutch*) were evaluated. In vivo field potential recordings from the olfactory epithelium (electro-olfactograms) were used to measure the impacts of copper on the responses of olfactory receptor neurons to natural odorants (L-serine and taurocholic acid) and an odorant mixture (L-arginine, L-aspartic acid, L-leucine, and L-serine) over a range of stimulus concentrations. Increases in copper impaired the neurophysiological response to all odorants within 10 min of exposure. The inhibitory effects of copper (1.0–20.0 mg/L) were dose dependent and they were not influenced by water hardness. Toxicity thresholds for the different receptor pathways were determined by using the benchmark dose method and found to be similar (a 2.3–3.0 mg/L increase in total dissolved copper over background). Collectively, examination of these data indicates that copper is broadly toxic to the salmon olfactory nervous system. Consequently, short-term influxes of copper to surface waters may interfere with olfactory-mediated behaviors that are critical for the survival and migratory success of wild salmonids.

Hansen, JA, JD Rose, RA Jenkins, KG Gerow, HL Bergman. 1999. Chinook salmon (*Oncorhynchus tshawytscha*) and rainbow trout (*Oncorhynchus mykiss*) exposed to copper: neurophysiological and histological effects on the olfactory system. Environmental Toxicology and Chemistry. 9:1979-1991.

Abstract: Olfactory epithelial structure and olfactory bulb neurophysiological responses were measured in chinook salmon and rainbow trout in response to 25 to 300 µg copper (Cu)/L. Using confocal laser scanning microscopy, the number of olfactory receptors was significantly reduced in chinook salmon exposed to greater than or equal to 50 µg Cu/L and in rainbow trout exposed to greater than or equal to 200 µg Cu/L for 1 h. The number of receptors was significantly reduced in both species following exposure to 25 µg Cu/L for 4 h. Transmission electron microscopy of olfactory epithelial tissue indicated that the loss of receptors was from cellular necrosis. Olfactory bulb electroencephalogram (EEG) responses to 10(-3) M L-serine were initially reduced by all Cu concentrations but were virtually eliminated in chinook salmon exposed to greater than or equal to 50 µg Cu/L and in rainbow trout exposed to greater than or equal to 200 µg Cu/L within 1 h of exposure. Following Cu exposure, EEG response recovery rates were slower in fish exposed to higher Cu concentrations. The higher sensitivity of the chinook salmon Olfactory system to Cu-induced histological damage and neurophysiological impairment parallels the relative species sensitivity observed in behavioral avoidance experiments. This difference in species sensitivity may reduce the survival and reproductive potential of chinook salmon compared with that of rainbow trout in Cu-contaminated waters.

Dethloff, GM, D Schlenk, JT Hamm, and HC Bailey. 1999. Alterations in physiological parameters of rainbow trout (*Oncorhynchus mykiss*) with exposure to copper and copper/zinc mixtures. Ecotoxicology and Environmental Safety. 42(3):253-264.

Abstract: Rainbow trout (*Oncorhynchus mykiss*) were exposed to sublethal concentrations of copper (Cu, 14 µg/L or parts per billion) and zinc (Zn, 57 and 81 µg/L or ppb) for a 21-day period. The four treatments included a control, a Cu control, a Cu and low-Zn treatment and a Cu and high-Zn treatment. Selected parameters [e.g., hemoglobin (Hb), hematocrit (Hct), plasma glucose, lactate and cortisol, differential leukocyte count, respiratory burst, tissue metal concentrations, hepatic metallothionein (MT), brain acetylcholinesterase (AChE)] were evaluated at 2, 7, 14, and 21 days of exposure. Whole blood and

plasma parameters were not altered by exposure to metals. The percentage of lymphocytes was consistently decreased in the three metal treatments, while percentages of neutrophils and monocytes were increased. Respiratory burst activity was elevated in all metal treatments. Gill Zn concentration was highly variable, with no significant alterations occurring. Gill Cu concentration was elevated above control levels in all metal treatments, Gill Cu concentration in the two Cu/Zn treatments was also elevated above levels in the Cu control. Hepatic metal concentrations and MT levels were not altered from control values. Measurements of brain AChE indicated an elevation in this parameter across metal treatments. In general, alterations in physiological parameters appeared to be due to Cu, with Zn having no interactive effect.

Hansen JA, Lipton J, Welsh PG. 2002. Environmental toxicology and chemistry. 21 (3): 633-639.

Abstract: Bull trout (*Salvelinus confluentus*) were recently listed as threatened in the United States under the federal Endangered Species Act. Past and present habitat for this species includes waterways contaminated with heavy metals released from mining activities. Because the sensitivity of this species to copper was previously unknown, we conducted acute copper toxicity tests with bull (*bull trout are an endangered type of charr like Dolly Varden) and rainbow trout (*Oncorhynchus mykiss*) in side-by-side comparison tests. Bioassays were conducted using water at two temperatures (8 degrees C and 16 degrees C) and two hardness levels (100 and 220 mg/L as CaCO₃). At a water hardness of 100 mg/L both species were less sensitive to copper when tested at 16 degrees C compared to 8 degrees C. The two species had similar sensitivity to copper in 100-mg/L hardness water, but bull trout were 2.5 to 4 times less sensitive than rainbow trout in 220-mg/L hardness water. However, when our results were viewed in the context of the broader literature on rainbow trout sensitivity to copper, the sensitivities of the two species appeared similar. This suggests that adoption of toxicity thresholds that are protective of rainbow trout would be protective of bull trout; however, an additional safety factor may be warranted because of the additional level of protection necessary for this federally threatened species.

Brix KV, DeForest DK, Adams WJ. 2001. Assessing acute and chronic copper risks to freshwater aquatic life using species sensitivity distributions for different taxonomic groups. Environmental Toxicology and Chemistry. 20 (8): 1846-1856.

Abstract: Using copper as an example, we present a method for assessing chemical risks to an aquatic community using species sensitivity distributions (SSDs) for different taxonomic groups. This method fits probability models to chemical exposure and effects data to estimate the percentage of aquatic species potentially at risk and expands on existing probabilistic risk assessment methodologies. Due to a paucity of chronic toxicity data for many chemicals, this methodology typically uses an acute-chronic ratio (ACR) to estimate the chronic effects distribution from the acute effects distribution. We expanded on existing methods in two ways. First, copper SSDs were developed for different organism groups (e.g., insects, fish) that share similar sensitivities or ecological functions. Integration of exposure and effects distributions provides an estimate of which organism groups may be at risk. These results were then compared with a site-specific food web, allowing an estimation of whether key food web components are potentially at risk and whether the overall aquatic community may be at risk from the perspective of ecosystem function. Second, chronic SSDs were estimated using the relationship between copper ACRs and acute toxicity (i.e., the less acutely sensitive a species, the larger the ACR). This correction in the ACR removes concerns previously identified with use of the ACR and allows evaluation of a significantly expanded chronic data set with the same approach as that for assessing acute risks.

Goldstein, JN, DF Woodward, and AM Farag. 1999. Movement of adult Chinook salmon during spawning migration in a metals-contaminated system, Coeur d'Alene River, Idaho. *Transactions of the American Fisheries Society* 128:121–129.

Abstract: Spawning migration of adult male chinook salmon *Oncorhynchus tshawytscha* was monitored by radio telemetry to determine their response to the presence of metals contamination in the South Fork of the Coeur d'Alene River, Idaho. The North Fork of the Coeur d'Alene River is relatively free of metals contamination and was used as a control. In all, 45 chinook salmon were transported from their natal stream, Wolf Lodge Creek, tagged with radio transmitters, and released in the Coeur d'Alene River 2 km downstream of the confluence of the South Fork and the North Fork of the Coeur d'Alene River. Fixed telemetry receivers were used to monitor the upstream movement of the tagged chinook salmon through the confluence area for 3 weeks after release. During this period, general water quality and metals concentrations were monitored in the study area. Of the 23 chinook salmon observed to move upstream from the release site and through the confluence area, the majority (16 fish, 70%) moved up the North Fork, and moved up the North Fork, and only 7 fish (30%) moved up the South Fork, where greater metals concentrations were observed. Our results agree with laboratory findings and suggest that natural fish populations will avoid tributaries with high metals contamination.

Dethloff, GM, and HC Bailey. 1998. Effects of Copper on Immune System Parameters of Rainbow Trout (*Oncorhynchus mykiss*). *Environmental Toxicology and Chemistry*. 17(9):1807-1814.

Abstract: Agricultural, urban, industrial, and mining sources release metals into waterways. The effects of sublethal concentrations of metals on integrated physiological processes in fish, such as immunocompetency, are not well understood. The objective of this study was to determine the physiological effects of a range of sublethal copper concentrations (6.4, 16.0, and 26.9 $\mu\text{g Cu/L}$) on Shasta-strain rainbow trout (*Oncorhynchus mykiss*) exposed in soft water. Trout were sampled after 3, 7, 14, and 21 d of exposure to copper. The percentage of monocytes was consistently elevated at 26.9 $\mu\text{g Cu/L}$, and the percentage of lymphocytes was decreased. A consistent increase in the percentage of neutrophils occurred at 26.9 and 6.4 $\mu\text{g Cu/L}$. Respiratory burst activity was decreased for all concentrations at all sampling days, but a significant reduction occurred only at 14 and 21 d of exposure to copper. B-like cell proliferation was decreased. (*In short, all this means that the immune system of fish was affected by Cu exposure. Woody) by exposure to the higher copper concentrations. Proliferation results, however, had high variability. T-like cell proliferation and phagocytosis were not altered. Hepatic copper concentration was consistently elevated in trout exposed to 26.9 $\mu\text{g Cu/L}$; no correlation was found between hepatic copper concentration and the Immune system responses investigated. Consistent alterations in immunological parameters suggest that these parameters could serve as indicators of chronic metal toxicity in natural systems.

Buhl, KJ and SJ Hamilton. 1991. Relative sensitivity of early life stages of arctic grayling, coho salmon, and rainbow trout to nine inorganics. *Ecotoxicology and Environmental Safety*. 2:184-197.

Abstract: The acute toxicity of nine inorganics associated with placer mining sediments to early life stages of Arctic grayling (*Thymallus arcticus*), coho salmon (*Oncorhynchus kisutch*), and rainbow trout (*O. mykiss*) was determined in soft water (hardness, 41 $\text{mg liter}^{-1} \text{CaCO}_3$) at 12°C. The relative toxicities of the inorganics varied by four orders of magnitude; from most toxic to least toxic, the rank order was cadmium,

silver, mercury, nickel, gold, arsenite, selenite, selenate, and hexavalent chromium. In general, juvenile life stages of the three species tested were more sensitive to these inorganics than the alevin life stage. Among juveniles, no single species was consistently more sensitive to the inorganics than another; among alevins, Arctic grayling were generally more sensitive than coho salmon and rainbow trout. Based on the results of the present study, estimated no-effect concentrations of arsenic and mercury, but not cadmium, chromium, gold, nickel, selenium, or silver, are close to their concentrations reported in streams with active placer mines in Alaska. Thus, arsenic (as arsenite(III)) and mercury may pose a hazard to Arctic grayling and coho salmon in Alaskan streams with active placer mines.

Saiki, MK, DT Castleberry, TW May, BA Martin, and FN Bullard. 1995. Copper, cadmium, and zinc concentrations in aquatic food-chains from the upper Sacramento River (California) and selected tributaries. Archives of Environmental Contamination and Toxicology. 29(4):484-491.

Abstract: Metals enter the Upper Sacramento River above Redding, California, primarily through Spring Creek, a tributary that receives acid-mine drainage from a US EPA Super-fund site known locally as Iron Mountain Mine. Waterweed (*Elodea canadensis*) and aquatic insects (midge larvae, Chironomidae; and mayfly nymphs, *Ephemeroptera*) from the Sacramento River downstream from Spring Creek contained much higher concentrations of copper (Cu), cadmium (Cd), and zinc (Zn) than did similar taxa from nearby reference tributaries not exposed to acid-mine drainage. Aquatic insects from the Sacramento River contained especially high maximum concentrations of Cu (200 mg/kg dry weight in midge larvae), Cd (23 mg/kg dry weight in mayfly nymphs), and Zn (1,700 mg/kg dry weight in mayfly nymphs). Although not always statistically significant, whole-body concentrations of Cu, Cd, and Zn in fishes (threespine stickleback, *Gasterosteus aculeatus*; Sacramento sucker, *Catostomus occidentalis*; Sacramento squawfish, *Ptychocheilus grandis*; and chinook salmon, *Oncorhynchus tshawytscha*) from the Sacramento River were generally higher than in fishes from the reference tributaries.

Baatrup, E. Structural and Functional-Effects of Heavy-Metals on the Nervous-System, Including Sense-Organs, of Fish. Comparative Biochemistry and Physiology C-Pharmacology Toxicology & Endocrinology. 1991; 100(1-2):253-257.

Abstract: Today, fish in the environment are inevitably exposed to chemical pollution. Although most hazardous substances are present at concentrations far below the lethal level, they may still cause serious damage to the life processes of these animals. Fish depend on an intact nervous system, including their sense organs, for mediating relevant behavior such as food search, predator recognition, communication and orientation. Unfortunately, the nervous system is most vulnerable and injuries to its elements may dramatically change the behavior and consequently the survival of fish.

Heavy metals are well known pollutants in the aquatic environment. Their interaction with relevant chemical stimuli may interfere with the communication between fish and environment. The affinity for a number of ligands and macromolecules makes heavy metals most potent neurotoxins. The present Mini-Review highlights some aspects of how trace concentrations of mercury, copper and lead affect the integrity of the fish nervous system; structurally, physiologically and biochemically.

Oregon study shows copper from brake pads affects salmon

CORVALLIS, Ore., Oregon State University issued the following news release:

Copper deposited on roads by the wearing of brake pads is transported in runoff to streams and rivers, where it may play a key role in increasing predation of threatened and endangered salmon throughout California and the Pacific Northwest. According to a study released this week in Environmental Science and Technology, levels of copper as low as 2 parts per billion have a direct impact on the sensory systems of juvenile coho salmon. The skin of juvenile salmon is equipped with a special kind of warning system, said Nat Scholz, a researcher at the Northwest Fisheries Science Center, a branch of the National Oceanic and Atmospheric Association (NOAA) Fisheries Service. When a salmon is attacked by a predator, a chemical cue is released from the skin that signals danger to nearby fish. These fish smell the predation cue and take behavioral measures to avoid being eaten.

Oregon State University researchers working with scientists from NOAA Fisheries, found that fish exposed to low, environmentally realistic levels of copper had an impaired sense of smell and were less responsive to the chemical alarm signal. At elevated concentrations of copper, these predator avoidance behaviors were largely abolished.

Copper naturally occurs in aquatic environments at trace amounts as a background element. However, fluctuations due to run-off from storm events can increase the level of copper in the water from close to zero to more than 60 parts per billion in some instances, said Jason Sandahl, who co-authored the study while working as an OSU doctoral research assistant at the NOAA research laboratory.

'There is a fine line between active copper uptake and copper toxicity,' said Sandahl. 'We see problems when copper is pulsed into the water, temporarily elevating the copper higher than the natural background level. The olfactory, or scent, neurons are not able to maintain the normal regulation of copper, and the neurons are either disrupted or killed.' Salmon are known to avoid environmental gradients of copper, such as those created by point-source discharges. However, copper in stormwater is a diffuse form of non-point source pollution, and it is unlikely that juvenile fish could reduce their exposure through avoidance behaviors, said the researchers.

As a result of automobile braking and exhaust, higher levels of copper contamination have been observed in streams close to roads and highways. Building materials and certain pesticide formulations are also important sources of copper in western landscapes, said Scholz.

Recent monitoring of northern California streams following storm events found dissolved copper levels averaging 15.8 parts per billion per liter of water. Salmon exposed to copper at concentrations well below this average showed significant impairment to both their sensory physiology and predator avoidance behavior, said Sandahl, whose work on the study was funded in part by a National Institute of Environmental Health Sciences grant to OSU. The work was also supported by NOAA's national Coastal Storms Program.

Since the duration of storm events that cause elevated levels of copper in streams can be relatively short, investigators exposed juvenile coho salmon to copper for only a few hours. In earlier studies they found the onset of copper neurotoxicity to salmon olfactory systems occurs within a matter of minutes. Loss of sensory function is likely reversible, but may take hours or days of the fish being in clean water, said the researchers. If copper exposures are high enough to cause the death of olfactory sensory neurons, it will take several weeks to months for the fish to regenerate new neurons and recover.

The levels of copper contaminant used in the study were at or below current federal regulatory guidelines for heavy metals, said Jeff Jenkins, an environmental toxicologist in OSU's College of Agricultural Sciences. 'It's just like they were poisoned,' said Jenkins. 'Of all the chemicals we have looked at, this effect was clearly happening at levels well below the current copper standards for water quality. It raises the question of whether the current standards are as protective as we thought.'

The current study is an example of how contaminants can disrupt the chemical ecology of aquatic organisms. In the case of salmon, a sublethal loss of sensory function may increase predation mortality in urbanizing watersheds. The influence of copper on predator-prey interactions is the focus of ongoing research, with the eventual aim of linking individual survival to the productivity of wild salmon populations, said Scholz.

Though the study was conducted on juvenile salmon, the results are applicable to fish species in urban watersheds worldwide, said the researchers. Dissolved copper has been shown to affect the olfactory systems of chinook salmon, rainbow trout, brown trout, fathead minnow, Colorado pikeminnow and tilapia.

Barry, KL, JA Grout, CD Levings, BH Nidle, and GE Piercy. 2000. Impacts of acid mine drainage on juvenile salmonids in an estuary near Britannia Beach in Howe Sound, British Columbia. Can. J. Fish. Aquat. Sci. 57: 2032–2043.

Abstract: The abandoned copper mine at Britannia Beach, British Columbia, has been releasing acid mine drainage (AMD) into Howe Sound for many years. To assess the impacts of AMD on juvenile salmonids in the Britannia Creek estuary, we compared fish abundance, distribution, and survival at contaminated sites near the creek with uncontaminated areas in Howe Sound. Water quality near Britannia Creek was poor, particularly in spring when dissolved Cu exceeded $1.0 \text{ mg} \cdot \text{L}^{-1}$ and pH was less than 6. Beach seine surveys conducted during April–August 1997 and March–May 1998 showed that chum salmon (*Oncorhynchus keta*) fry abundance was significantly lower near Britannia Creek mouth ($0\text{--}1.2 \cdot 100 \text{ m}^{-2}$) than in reference areas ($11.5\text{--}31.4 \cdot 100 \text{ m}^{-2}$). Laboratory bioassays confirmed that AMD from Britannia Mine was toxic to juvenile chinook (*Oncorhynchus tshawytscha*) and chum salmon (96-h $\text{LC}_{50} = 0.7\text{--}29.7\%$ in freshwater and $12.6\text{--}62.2\%$ in 10 ppt water). Chinook salmon smolts transplanted to surface cages near Britannia Creek experienced 100% mortality within 2 days. These results demonstrated that juvenile salmonids are vulnerable to AMD from Britannia Creek: their abundance peaks during spring when Cu concentrations are highest and toxicity is greatest in surface freshwater, which matches their preferred vertical distribution.

Eisler, R. COPPER HAZARDS TO FISH, WILDLIFE, AND INVERTEBRATES:
A SYNOPTIC REVIEW. U.S. Geological Survey, Laurel, MD 20708

Excerpt specific to fish:

Fishes Adverse sublethal effects of copper on behavior, growth, migration, and metabolism occur in representative species of fishes at nominal water concentrations between 4 and 10 µg/L. In sensitive species of teleosts, copper adversely affects reproduction and survival from 10-20 µg Cu/L (Hodson et al. 1979; Table 5). Copper exerts a wide range of physiological effects in fishes, including increased metallothionein synthesis in hepatocytes, altered blood chemistry, and histopathology of gills and skin (Iger et al. 1994). At environmentally realistic concentrations, free copper adversely affects resistance of fishes to bacterial diseases; disrupts migration (that is, fishes avoid copper-contaminated spawning grounds); alters locomotion through hyperactivity; impairs respiration; disrupts osmoregulation through inhibition of gill Na⁺-K⁺-activated ATPase; is associated with tissue structure and pathology of kidneys, liver, gills, and other hematopoietic tissues; impacts mechanoreceptors of lateral line canals; impairs functions of olfactory organs and brain; and is associated with changes in blood chemistry, enzyme activities, and corticosteroid metabolism (Hodson et al. 1979).

Copper-induced cellular changes or lesions occur in kidneys, lateral line, and livers of several species of marine fishes (Gardner and LaRoche 1973). Copper-induced mortality in teleosts is reduced in waters with high concentrations of organic sequestering agents and in genetically resistant species (Hodson et al. 1979). At pH values less than 4.9 (that is, at pH values associated with increased aluminum solubility and toxicity), copper may contribute to the demise of acid-sensitive fishes (Hickie et al. 1993). Copper affects plasma Na⁺ and gill phospholipid activity; these effects are modified by water temperature and hardness (Hansen et al. 1993). In red drum, copper toxicity is higher at comparatively elevated temperatures and reduced salinities (Peppard et al. 1991).

Copper is acutely toxic to freshwater teleosts in soft water at concentrations between 10 and 20 µg/L (NAS 1977). In rainbow trout, copper toxicity is markedly lower at high salinities (Wilson and Taylor 1993). Comparatively elevated temperatures and copper loadings in the medium cause locomotor disorientation of tested species (Kleerekoper 1973). Copper may affect reproductive success of fish through disruption of hatch coordination with food availability or through adverse effects on larval fishes (Ellenberger et al. 1994). Chronic exposure of representative species of teleosts to low concentrations (5 to 40 µg/L) of copper in water containing low concentrations of organic materials adversely affects survival, growth, and spawning; this range is 66 to 120 µg Cu/L when test waters contain enriched loadings of organic materials (Hodson et al. 1979). Larval and early juvenile stages of eight species of freshwater fishes are more sensitive to copper than embryos (McKim et al. 1978) or adults (Hodson et al. 1979). But larvae of topmelt (*Atherinops affinis*) are increasingly sensitive to copper with increasing age. Topmelt sensitivity is associated with increasing respiratory surface area and increasing cutaneous and branchial uptake of copper (McNulty et al. 1994). Sublethal exposure of fishes to copper suppresses resistance to viral and bacterial pathogens (Rougier et al. 1994) and, in the case of the air-breathing catfish (*Saccobranhus fossilis*), affects humoral and cell-mediated immunity, the skin, and respiratory surfaces (Khangarot and

Tripathi 1991). Rainbow trout exposed to 50 µg Cu/L for 24 h—a sublethal concentration—show degeneration of olfactory receptors that may cause difficulties in olfactory-mediated behaviors such as migration (Klima and Applehans 1990). The primary site of sublethal copper toxicity in rainbow trout is the ion transport system of the gills (Hansen et al. 1993). Dietary copper is more important than waterborne copper in reducing survival and growth of larvae of rainbow trout (Woodward et al. 1994). Simultaneous exposure of rainbow trout to dietary and waterborne copper results in significant copper assimilation. Diet is the main source of tissue copper; however, the contribution of waterborne copper to tissue burdens increases as water concentrations rise (Miller et al. 1993). Rate and extent of copper accumulations in fish tissues are extremely variable between species and are further modified by abiotic and biological variables. Copper accumulations in fish gills increase with increasing concentrations of free copper in solution, increasing dissolved organic carbon (DOC), and decreasing pH and alkalinity (Playle et al. 1993a, 1993b). Starved Mozambique tilapia accumulate significantly more copper from the medium in 96 h than did tilapia fed a diet containing 5.9 mg Cu/kg DW ration (Pelgrom et al. 1994). The bioconcentration factor for whole larvae of the fathead minnow was 290 after exposure for 30 h, but only 0.1 in muscle of bluegills after 660 h (USEPA 1980). Prior exposure of brown bullheads (*Ictalurus nebulosus*) to 83 sublethal copper concentrations for 20 days before exposure to lethal copper concentrations produces higher copper concentrations in tissues of dead bullheads than in those not previously exposed; however, the use of tissue residues is not an acceptable autopsy procedure for copper (Brungs et al. 1973). Rising copper concentrations in blood plasma of catfish (*Heteropneustes fossilis*) seem to reflect copper stress, although the catfish appear outwardly normal. Plasma copper concentrations of catfish increase from 290 µg Cu/L in controls at start to 380 µg Cu/L in survivors at 72 h (50% dead); a plasma copper concentration of 1,060 µg Cu/L at 6 h is associated with 50% mortality (Banerjee and Homechaudhuri 1990). In rainbow trout, copper is rapidly eliminated from plasma; the half-time persistence is 7 min for the short-lived component and 196 min for the long-lived component (Carbonell and Tarazona 1994). Attraction to waters containing low (11 to 17 µg/L) concentrations of copper occurs in several species of freshwater teleosts, including goldfish (*Carassius auratus*) and green sunfish (*Lepomis cyanellus*); however, other species, including white suckers (*Catostomus commersonii*), avoid these waters (Kleerekoper 1973). In avoidance/attraction tests, juvenile rainbow trout avoided waters containing 70 µg Cu/L but were significantly attracted to water containing 4,560 µg Cu/L; a similar pattern was observed in tadpoles of the American toad, *Bufo americanus* (Birge et al. 1993). Copper concentrations in the range of 18 to 28 µg/L interfere with bluegill growth and prey choice (Sandheinrich and Atchison 1989). Copper interferes with the ability of fish to respond positively to L-alanine, an important constituent of prey odors; concentrations as low as 1 µg Cu/L inhibit this attraction response in some species (Steele et al. 1990). Increased tolerance to copper was observed in fathead minnows after prolonged exposure to sublethal concentrations, but tolerance was not sustained on removal to clean water. Copper tolerance in fathead minnows is attributed to increased production of metallothioneins (Benson and Birge 1985). Copper tolerance in rainbow trout seems dependent on changes in sodium transport and permeability (Lauren and McDonald 1987a).

Further Reading

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Featherstone, A.M., and O'Grady, B.V. 1997. Removal of dissolved copper and iron at the freshwater–saltwater interface of an acid mine stream. *Mar. Pollut. Bull.* **34**: 332–337.

Foster, P., Hunt, D.T.E., and Morris, A.W. 1978. Metals in an acid mine stream and estuary. *Sci. Total Environ.* **9**: 75–86.

Fromm, P.O. 1980. A review of some physiological and toxicological responses of freshwater fish to acid stress. *Environ. Biol. Fishes*, **5**: 79–93.

Bjerselius R, Winberg S, Winberg Y, Zeipel K. 1993. Ca²⁺ protects olfactory receptor function against acute Cu(II) toxicity in Atlantic salmon. *Aquat Toxicol* 25:125–138. 34.

Saunders RL, Sprague JB. 1967. Effects of copper–zinc mining pollution on a spawning migration of Atlantic salmon. *Water Res* 1:419–432.

COMMENTS B9

Salmon Protection and Watershed Network; Todd Steiner, SPAWN Executive Director (June 22, 2010)

- B9-1: The recommendation that an option to just repave the road without excessive disturbance is acknowledged. This comment relates to the merits of the proposed project and does not raise questions or identify errors in the Draft EIR; therefore, no further response is necessary. Please see Master Response 1.
- B9-2: The EIR authors disagree with the statement that the “Resurface Roadway Alternative” and “Mitigated Roadway Alternative” are inappropriate. The County maintains that the alternatives presented in the Draft EIR are sufficiently different from one another so as to provide for meaningful comparison to the proposed project and to one another. Please see Master Response 12.
- B9-3: The comment states that the Draft EIR does not adequately analyze and present for public review the negative environmental impacts of the proposed project. The EIR authors and the County disagree with the comment’s conclusions. The Draft EIR, across 350 pages of text, tables, and graphics, provides a detailed presentation of potential impacts and then specifically links each potential adverse impact to mitigation measures designed to reduce those impacts to a less than significant level. Although this statement questions the adequacy of the Draft EIR, it does not provide specific examples. No change to the Draft EIR is warranted.
- B9-4: The comment that tree removal under Option A is unacceptable is acknowledged. This comment relates to the merits of the project and not to the adequacy of the Draft EIR; therefore, no further response is necessary. Please see Master Response 1.
- B9-5: The sensitivity of the project area, particularly for Central California Coast steelhead trout, Central California Coast coho salmon, California freshwater shrimp and California red-legged frog is acknowledged and is documented in the Draft EIR. This comment does not identify errors or improper analysis contained in the Draft EIR; therefore no further response is necessary.
- B9-6: As stated in Section 3.4.1 of the Draft EIR (pg. 72), pavement rehabilitation would be achieved by creating a stable base course over which two layers of asphalt would be applied. The first of these two layers would consist of RAC; the uppermost layer would consist of a permeable friction course. Please see Master Response 2.
- B9-7: The commenter’s opposition to Option A is noted. This comment relates to the merits of the proposed project and not to the adequacy of the Draft EIR; therefore no further response is necessary. Please see Master Response 1.

The comment further states that the Draft EIR greatly understates the negative cumulative impacts of the removal of the 9 redwood trees under Option A. The authors of the EIR and

the County disagree. Section 4.3.4 of the Draft EIR (pages 205-210) addresses tree removal impacts and identifies mitigation measures that would reduce these effects to a less-than-significant level. Please see Master Response 6 and Master Response 8 for further clarification regarding tree removal. No changes to the Draft EIR are needed.

B9-8: Section 4.3.4 of the Draft EIR (pages 207-210) describes the potential damage to adjacent trees resulting from project construction. Potential indirect tree impacts include: soil compaction, soil excavation and root pruning, concrete and fill placement atop root zones, and alteration of drainage patterns. Mitigation Measures BIO-10a through BIO-10i would reduce indirect impacts to adjacent trees to a less-than-significant level. No changes to the Draft EIR are warranted. Please see Master Response 7 and Master Response 8.

B9-9: With regard to cumulative impacts of tree removal and existing diseased trees in the Arborist's Report, please see Master Response 8. With regard to impacts on redwood root systems, please see Master Response 7.

The removal of large redwood trees under Option A is not expected to cause instability in adjacent trees. Redwood stability is related, in part, to the interlocked root systems of adjacent trees. Redwood removal activity that disrupts the interlocked root systems can lead to structural instability in adjacent trees. The proposed project would avoid this problem for two reasons. First, tree removal under the proposed project would not entail disturbance of the interlocked root systems (i.e. trees to be removed would not be uprooted.). Second, the roots of adjacent trees would be protected from compaction and other construction-related disturbances under Mitigation Measures BIO-10a-h, which are designed to specifically protect the integrity of redwood root systems.

B9-10: Please see Master Responses 6 and 7.

B9-11: Comment is incorrect. As described on page 75 of the Draft EIR, new paved pullouts are not proposed to limit sediment discharge, but to provide a safe refuge for slower traveling vehicles. The proposed project would use permeable asphalt paving in order to limit any sediment discharge resulting from the *new* pullouts. No further response is necessary.

B9-12: Please see Response to Comment A5-30.

B9-13: The purpose of CEQA is to analyze the adverse physical effects that may result from implementation of a proposed project. The Draft EIR, consistent with the provisions of CEQA, need not "establish a set of unique conditions at the site which mandate restoration of the land;" rather, the EIR must analyze the environmental impacts of the proposed project, which in this case, includes creation of new paved pullouts and closure, via large rocks or boulders, of existing informal pullouts. The restoration of existing pullouts using native vegetation is not proposed as part of the project.

B9-14: Please see Master Response 2, which addresses the use of RAC at the project site.

- B9-15: Section 4.6.4 of the Draft EIR (pages 263-269) addresses the potential water quality impacts associated with the proposed project and provides mitigation to reduce impacts to less-than-significant levels. Please see Master Response 11, which addresses water quality.
- B9-16: Please see Master Response 11 related to water quality. The proposed project would include swales, buffer strips and other water quality protection measures incorporated as part of the proposed project, which combined with recommended mitigation measures in the Draft EIR would reduce the pollutant load to a less than significant level.
- B9-17: Please see Master Response 5, which describes the proposed construction schedule.
- B9-18: As described in Section 4.9, Air Quality, of the Draft EIR (pages 304-307), demolition and construction activities associated with the proposed project have the potential to generate significant dust, exhaust and organic emissions. Mitigation Measure AIR-1, which requires construction activities to comply with Bay Area Air Quality Management Guidelines (BAAQMD) for reducing construction-period air quality impacts, would reduce these impacts to a less-than-significant level. Since the proposed project would not result in an increase in vehicle traffic from current levels, no operational impacts are expected from the proposed project and no increase in vehicle emissions would occur. The proposed project would not significantly increase long-term regional or cumulative emissions in the air basin and would not violate air quality standards. No changes to the Draft EIR are required.
- B9-19: During construction stormwater pollution prevention measures would be implemented to control particulates in accordance with the Construction General Permit to prevent pollutant discharges and reduce impacts to aquatic health. Please see Master Response 9 and Master Response 11.
- B9-20: No sealants are proposed to be used as part of the roadway rehabilitation project. Slurry seals or other types of sealants would not be applied as they would reduce the permeability of the asphalt pavement. Pollutants that could affect water quality in Lagunitas Creek during construction and operation of the proposed project are described in Section 4.6.4 of the Draft EIR (page 265) and further clarified in Master Response 11. No further response is necessary and no change to the Draft EIR is warranted.
- B9-21: During the construction phase, the project would comply with the Construction General Permit to manage the discharge of road pollutants and project construction activities. The project includes the installation of permeable pavement, vegetated swales and vegetated buffer strips along the roadway, which would reduce the discharge of pollutants accumulated on the road. The County would conduct long-term maintenance of swales and buffer strips in accordance with the municipal maintenance performance standard in the Marin County Stormwater Pollution Prevention Program stormwater management plan (Action Plan 2010) and the FishNet 4C Roads Manual. Please see Master Response 9 and Master Response 11.
- B9-22: Please see Response to Comment B9-21.

JUN 21 2010



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Marin Group c/o Gordon Bennett
40 Sunnyside Dr, Inverness, CA 94937
gordonbennett.415.938.7553@gmail.com

June 14, 2010

Mr. David Bernardi
Marin County Department of Public Works
3501 Civic Center Drive, Room 404
San Rafael, CA 94903

Re: Sir Francis Drake Boulevard Rehabilitation Project Draft Environmental Impact Report (DEIR)

Sierra Club Marin Group believes that this project may achieve benefits to habitat, bicycle, pedestrian and vehicle safety, using the following six general principles that have our support:

- 1) There should be no widening of the road beyond the width of the infrastructure (paved area and inboard drainage ditch) as it exists now;
- 2) There should be no removal of trees to construct the new infrastructure.
- 3) Water quality of runoff from new infrastructure should be improved compared to water quality of runoff from the infrastructure as it exists now;
- 4) Permeability of new infrastructure should be increased compared to the permeability of the infrastructure as it exists now;
- 5) New road infrastructure should be located as far from the creekbank as possible;
- 6) Associated infrastructure should be fish friendly (e.g. creek culverts impassible to fish should allow passage; needed bank stabilization should be biotechnical, etc)

Our specific comments on the DIER follow...

1

Sierra Club notes that although the DEIR concludes that the Mitigated Roadway Alternative is the Environmentally Superior Alternative, we also note that the Resurface Roadway Alternative could be improved by incorporating key environmental attributes of the Mitigated Roadway Alternative by:

- a) Adding pull off treatment to reduce untreated runoff;
- b) Replacing culverts to decrease fine sediments and other contaminants;
- c) Repairing the eroding bank at Station 270+25 and other slides to reduce fine sediments.

We therefore suggest that the Final EIR make it easier for the public to provide informed feedback on the Resurface Roadway Alternative adjusted as above to incorporate key environmental attributes of the Mitigated Roadway Alternative.

2

We also note that despite the public's concern about tree removal, the DEIR provides incomplete and inconsistent information about this very matter. Thus, the DEIR makes it difficult for the public to provide informed feedback on the trade-off proposed in Option A between tree removal and lane/shoulder widths. Based on the DEIR's incomplete and inconsistent information provided, it does not appear that any optional tree removal (per Option A) would generate sufficient trade-off value to any lane or shoulder widths.

3

As examples of data that we believe the Final EIR should provide in order for more informed public feedback, we provide the following (non-exhaustive) examples that reference the numbered "stations," each representing 100 foot intervals (ie station 273+50 is a point 27,350 liner feet along the project length that begins at the Tocaloma Bridge).

4

Example 1: Table 3.4.B vs Figure 3.4-5

These should provide the same data in different formats. They do not.

- a) Table data ends at 227+00 Figure data ends at 273+50
- b) Table data line 9 ends at 116+00 Figure data ends at 115+00
- c) Segment 261+50 to 273+50: no lane width (pg 3 SUMMARY assumes 11')

5

Example 2: Table 3.4.C vs Figure 3.4-8

These should provide the same data in different formats. They do not.

- a) Table data line 2 ends at 18+00 Figure data ends at 19+00
- b) Table data line 15 ends at 166+50 Figure data ends at 168+50

6

Example 3: Table 3.4.B (preferred) vs Table 3.4.C (Option A)

These should have the same segments for easy comparison. They do not.

- a) Table B line 2 ends at 18+00 Table C line 2 ends at 19+00
- b) Table B line 9 ends at 116+00 Table C line 9 ends at 115+00
- c) Table B line 15 ends at 168+50 Table C line 15 ends at 166+50
- d) Table B line 18 ends at 186+00 Table C line 18 ends at 188+00
- e) Table B line 19 ends at 204+50 Table C line 19 ends at 193+00
- f) Table B line 21 ends at 214+50 Table C line 19 ends at 212+00

7

Example 4: Paragraph 3.3.1 vs Tables 3.4.B/C and Figures 3.4-5/8

Paragraph 3.3.1 defines the project from station 5+60 to 279+50 (27,390 feet). However both Tables/Figures begin at station 5+80 and end at station 273+50 (26,770 feet) and thus omit 620 feet of the project.

8

Example 5: Figures 3.4-5 (Preferred) and Figure 3.4-8 (Option A)

Both Figures show Irving Bridge (211+80 to 212+40) as 60-feet long and 20 feet wide (presumably two 10-foot wide lanes), but neither of the Tables associated with the respective Figures show this constriction, with both showing 11-foot lanes in the data segments (lines 20/21) that should include the bridge. This omission is significant because of Option A's proposed 9-tree removal to expand lanes and shoulders. These 9 trees at a combined breast-height diameter (Table 3.4.D) of 504" or 42' feet, are probably equal to the 60-foot long Irving Bridge in their linear constriction of lanes and shoulders proposed to be widened by the tree removal (but not the bridge replacement). This comparison should be clearer.

9

Example 7: Table 3.4.D Tree Removal Under Option A

Each of the nine trees proposed for removal has a station number ID, but none of these trees stations are marked on the Table station data showing beginning and ending lane and shoulder widths. This is important so that the public can understand the lane/shoulder benefits from each tree proposed for removal. For example

- Tree #1 at 70+00 is within line 6 (60+00-73+00) of Table 3.4.B (Preferred) which shows 11-foot lanes and 2-foot shoulders. Table 3.4.C (Option A) line 6 (60+00-73+00) also shows 11-foot lanes and 2-foot shoulders after Tree #1 has been removed. If the tree removal changes nothing, then why remove the tree?
- Tree #2 removal shows the same lack of measurable change.
- Tree #3, #4, #5, #6, #7, and #8 removals cannot be compared because the Table B and C segments differ (see Example 3 above).
- Tree #9 (at 277+00) is not on any Table/Figure (see Example 4 above)

10

Lastly, Page 20 4th bullet contains a typo: "Laguniats" should be "Lagunitas"

11

Sierra Club SUMMARY: The following table is based on the DEIR's incomplete and inconsistent information and assumes 261+50 to 273+50 = 11' lanes

	Preferred Linear Ft (%)	Option A Linear Ft (%)	± Linear Ft (%)
Lanes 10'	1,850	0	--
11'	24,920	26,770	+1,850 (6.9%)
Shoulders 4'	3,070 (11.5%)	2,970 (11.1%)	--
3'	4,950 (18.5%)	4,950 (18.5%)	--
2'	9,700 (36.2%)	9,600 (35.9%)	--
1'	4,825 (18.0%)	6,625 (24.7%)	+1,800 (6.7%)
0'	4,225 (15.8%)	2,625 (9.8%)	-1,600 (-6.0%)

11

con.

Lanes (based on the above incomplete and inconsistent information)

Removal of Trees #1 and #2 appears to provide no benefit to lanes (see Example 7 a/b). Removal of these isolated trees would allow wider lanes for only the few feet of their linear base, but not wider lanes of any length.

Removal of Trees #3-#7 appears to benefit at most 1,850 feet of 10-foot lanes converted to 11-foot lanes (assuming segment 261+50 to 273+50 has existing 11-foot lanes...see Example 1 above). Presumably, the entire 1850-foot linear segment (186+00 to 204+50) on Table 3.4.B was considered moved from 10-foot lanes (Table B) to 11-foot lanes (Table C) because Trees #3-#7 are closely bunched between 186+15 and 204+40.

Tree #8 is only 120 feet from Irving Bridge's 10-foot lanes (which will not change) and appears not to constrict the 11-foot lanes (Table B Line 21). Tree #9: no data

Shoulders (based on the above incomplete and inconsistent information):

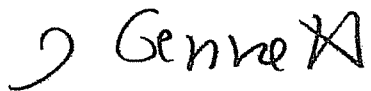
Removal of Trees #1 and #2 as stand-alone trees does not appear to benefit shoulder width and each would appear to be brief obstacles (each being a lineal 3 to 6 feet) in the otherwise continuous adjacent 2-foot shoulder (Tree #1) and 3-foot shoulder (Tree #2).

Removal of Trees #3-#7 appears to provide a 1-foot shoulder where none existed before but because the two Tables' data segments are not comparable, it is impossible to determine how much linear 1-foot shoulder is added.

Tree #8 does not appear to add any shoulder width (Table B Line 21 has 0-foot shoulder vs Table C line 21 also with a 0-foot shoulder). Tree #9: no data.

In general, we look forward to being able to provide more informed commentary on the final DEIR, but that requires more complete and consistent information.

Thank you for the opportunity to comment.



Gordon Bennett, Sierra Club
Marin Group Watershed Chair

COMMENTER B10

Sierra Club; Gordon Bennett, Marin Group Watershed Chair (June 14, 2010)

- B10-1: The recommendation to include key environmental attributes as part of the Resurface Roadway Alternative is noted. The authors of the EIR and the County maintain that the alternatives presented in Chapter 5.0 of the Draft EIR (pages 341-350) are sufficiently different from one another so as to provide for meaningful comparison to the proposed project and to one another. Please see Master Response 12.
- B10-2: The comment that based on the incomplete and inconsistent information provided in the Draft EIR, optional tree removal (under Option A) would not generate sufficient trade-off value for any lane or shoulder widths. This comment relates to the merits of the proposed project and not to the adequacy of the Draft EIR; therefore, no further response is required.
- B10-3: This comment provides a general statement of suggested changes to the Draft EIR from the commenter. Responses to specific comments are provided below.
- B10-4: The tables in the Final EIR have been updated to reflect the dimensions shown on Figures 3.4-5 and 3.4-8. Differences in the station ranges exist because of differences in the alternatives. The revised tables are provided in Section 5.0, *Changes to the Draft EIR*, of this Response to Comments document (pages 299-301) and in the Final EIR on pages 78 and 91. No changes to the figures are warranted as a result of this comment.
- B10-5: Please see Response to Comment B10-4.
- B10-6: The proposed removal of trees under Option A (Table 3.4.C) would change the station ranges and widths along the roadway alignment. As a result, the changes suggested in the comment would inaccurately depict the station range information along the project alignment. No changes to the Draft EIR are warranted.
- B10-7: Section 3.3.1 of the Draft EIR (page 58) defines the project limits, while the tables and figures define the limits of roadway construction. Often when a road is being rehabilitated, the contractor will apply a new layer of asphalt to the existing road at each end of roadway construction to provide a flush surface between the rehabilitated road and the existing road. The limits of roadway construction as shown in the figures and tables in Chapter 3.0 of the Draft EIR do not include these sections of the existing road. For clarity, Section 3.3.1 of the Final EIR (page 60) has been revised as follows so that the limits in this paragraph coincide with those shown on the figures and tables in Chapter 3.0:

The project site is located in west central Marin County, approximately 2.84 miles southeast of Point Reyes Station, and 0.58 miles west of Lagunitas, California, respectively. The City of San Rafael is located approximately 9.82 miles west of the project site (see Figures 3.1-1 and 3.3-1). The project site comprises a section of the SFDB roadway located in an unincorporated area of Marin County between Shafter Bridge and SFDB's intersection with Platform Bridge Road. For reference to specific

project site features, a station line, as shown in Figure 3.3-2, is provided along the roadway. Each station indicates an interval of 100 feet beginning with Station 5+~~680~~ at Platform Bridge Road and ending with Station 2793+50 at Shafter Bridge.

B10-8: The comment related to the width of Irving Bridge as depicted on the figures and tables in Chapter 3.0 of the Draft EIR is noted. The authors of the EIR and the County acknowledge that the figure does not indicate the width restriction of the Irving Bridge. The project does not propose to widen the bridge, as a complete bridge replacement would likely be necessary. Bridge replacement is not proposed as part of this SFDB rehabilitation project. The commenter's assertion that the bridge would continue to constrict traffic flow by providing narrow lane widths is acknowledged. This comment relates to the merits of the proposed project, and not to the adequacy of the Draft EIR. Therefore, no further response is required under CEQA.

B10-9: The comment that none of the trees to be removed under Option A are marked on the table station data showing beginning and ending lane widths is acknowledged. Option A would increase the width of the roadway where possible to provide additional shoulder area, and in certain locations would adjust the horizontal alignment to improve sight in the Final EIR have been updated to coincide with the figures included in Chapter 3.0. It appears that the commenter is attempting to determine a direct correlation between additional shoulder width and tree removal under Option A. The County believes that the benefits of implementing Option A are not just to provide additional lane/shoulder width, but also to improve the roadway alignment and provide greater sight distance. This comment relates to the merits of the proposed project, and not to the adequacy of the Draft EIR. Therefore, no further response is required under CEQA.

B10-10: Comment noted. Page 20 of the Final EIR has been revised as follows:

- No substances toxic to aquatic life shall be discharged into ~~Lagunitas~~ Lagunitas Creek or its tributaries

B10-11: Please see Response to Comment B10-9.

4.3 INDIVIDUALS

The Marin County Equestrian Trail Guide

Sandy Greenblat, Publisher

105 Bay Way

San Rafael CA 94901

Tel: 415/307-3351

Website: MarinTrailGuide@comcast.netemail: sandygreenblat@comcast.net

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MAY 24 2010

MARIN COUNTY PUBLIC WORKS

May 19, 2010

Ernest Klock, Principal Civil Engineer

Marin County Dept. of Public Works

3501 Civic Center Drive, Room 404

San Rafael CA 94903

Subject: Sir Francis Drake Boulevard Rehabilitation Project
Remarks re: Environmental Impact Report

Dear Mr. Klock,

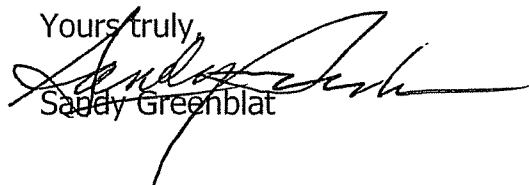
I wish to provide my comments addressing specific areas of the EIR, mostly relative to Section 6, Transportation and Circulation.

I believe the EIR is adequate in its scope and I compliment the authors. Thanks also to Dave Bernardi and all the various staff members who have worked diligently on this long overdue project.

I understand the issues addressed below are constrained by the actual, physical setting of that section of roadway beginning at the Shafter Bridge and continuing westward to the end of the California State Park (Taylor Park) property where it joins the Lands of GGNRA, approximately four miles in length.

If there is any need to contact me, please call the phone number or use the email address, both of which are shown on the letterhead.

Yours truly,


Sandy Greenblat

Turnouts, Passing Areas, Cyclist Safety, Traffic Counts, Signage and Traffic Delay

1

Turnouts:

The EIR suggest several strategically placed turnouts up to 300' in length to provide pull-out space for slower vehicles and safe passing areas for faster traffic. While physical limitations have much to do with the length of turnouts, 300' is actually a minimum requirement when one looks closely at the traffic.

Supporting Data:

A truck, truck and trailer, tour bus or similar vehicle, slowing down to at least 15mph to move into the turnout will cover that length of space in 13 seconds. Add additional time if the vehicle pulling into the turnout actually comes to a full stop. This is a minimal requirement.

2

Turnout/Shoulder Construction:

The turnout must be level with the roadway. Present turnouts all over this county's two lane roads, and in scores of other areas, require the driver's vehicle to drop off the roadway edge onto an unpaved, rough and potholed turnout or shoulder, running over broken pieces of asphalt in the process. After a driver spends enough money repairing broken undercarriage, flat tires, bent rims, damaged trailers and so forth, the use of such badly designed and maintained turnouts will halt. I for one will no longer subject my equipment to such turnouts or shoulders. Also, as an afterthought, the trees overhead need to be trimmed to allow tall vehicles (semi-trailers, busses, trucks with tall trailers) to use the turnout without damage to their top line. Several turnouts have tree overhang that prevents their use except by the automobile.

3

4

Using permeable asphalt is a great idea, eliminating standing water and unwanted sheeting of water off the roadway.

5

Size of Vehicles:

Vehicles that would normally access turnouts are delivery trucks ranging in length for 20' to 65', trucks with horse trailers ranging from 30' to over 50' in length, tour busses of various size measuring up to and beyond 50' in length, plus cement trucks and all the other typical daily delivery truck traffic that is generally big, long and heavy. Add to that the commute buses that now traverse this roadway on a regular basis. It is important to note that a great majority of the commercial deliveries to Olema, Point Reyes Station and Point Reyes National Seashore access SFD Blvd.

6

Passing Cyclists/Traffic Delay: At present, assuming a driver will not risk an accident or injury to a cyclist, any of the vehicles named in the above paragraphs will follow cyclists all four miles, until reaching the open roadway west of the GGNRA boundary.

6 con.

If cyclists are to be encouraged to use turnouts, as well they should be, they should understand there may be times when they simply have to stop and allow the traffic to pass. This is not a common practice now. I travel this roadway west and east at least seventy five times a year with a truck and trailer and occasionally in my car. I follow the cyclists until it is safe to pass. That is to say, I hardly ever pass, and that annoys those behind me.

Traffic Implications: I have no real issue with the conclusions of the study. I do wish to provide the following data as I fear some of the content may not have been included in the study traffic counts.

7

Trucks with Horse Trailers:

Addressing the number of day use trips: An assumption: Twenty such rigs come through Taylor Park on their way to Point Reyes (Bear Valley, Five Brooks, Bayview Trailhead, Muddy Hollow Trailhead, Estero Trailhead, Limantour Trailhead to name the most popular destinations) daily. Let's say the travel averages 300 days a year allowing for bad weather days. The reasonable total is 6,000 annual trips *each way*, east and west, over this route just for the day users. Twelve thousand trips. I understand some but very few arrive via SR1 from the south; Lucas Valley Road and SR1 from the north. The impact is certainly less than five percent of the total. My personal belief is closer to one percent.

Stewart Horse Camp:

Stewart Horse Camp is open May to October each year. The camp averages approximately 9,000 users per season. Each user is one truck and trailer. Of the total, 95% of the visitors travel Sir Francis Drake Blvd. through Taylor Park on their way to *and from* the Stewart Horse Camp. That totals 18,000 trips @ 95% = 17,100 trips in addition to day use travelers as outlined above.

Samuel P. Taylor Park:

Equestrian use in Taylor Park is not counted and recorded. The assumption is twenty five units arrive in the park each week plus overnight horse camping at Devils Gulch, generally occupied all spring, summer and fall. One can only assume the net add-on to the traffic count is above one thousand trips annually, each way, east and west, even allowing for bad winter days.

Impact Days:

For the most part, the heaviest traffic occurs Wednesday through Sunday although some truck and horse trailer traffic is evident Monday-Tuesday. The Stewart Horse Camp traffic westbound occurs Wednesday-Friday for the most part, and eastbound late Saturday and all day Sunday.

8

Traffic Study Understated:

If my assumption the study is understated, then support for numerous and properly constructed turnouts gains further support. Add the above to the resident traffic counts, the visitor and vacationer counts (4,000,000+ annually to the Point Reyes National Seashore alone!) and I believe the total count will be higher than anticipated.

9

Table 4.8.A, Page 281, and the adjacent explanation addressing the Marin Countywide Plan conclusions are correct. The LOS at Butterfield Road and Sir Francis Drake Blvd. and west through Fairfax, is certainly Level E or F, especially on weekends and during commute hours. These areas and levels of service do not address the subject area properly. Your study is certainly more reliable.

10

Speed Limit:

I understand there is a 30mph speed limit at and near the entrance to Samuel P. Taylor Park. Maintain that speed limit and reduce the speed limit on the balance of the roadway under study, from Shafter Bridge to the GHNRA boundary, to 35 mph and 40 mph from the GGNRA boundary to Platform Bridge Road. Of course, enforcement is the major issue.

11


Signage:

Signage advising cyclists they can use the turnouts to allow vehicles to pass is critical. Signage should also prohibit parking in turnouts. Marin County Sheriff and CHP officers should enforce this law.

Signage advising motorists they cannot pass cyclists when there is a sight line of less than _____ feet is critical. I do not know the correct number, so I will leave that to you. Even 30 mph traffic will take 5-7 seconds to pass a cyclist (or another vehicle) and cover close to 300' to pass at that rate of speed.

Add signage advising "Be patient. This is a narrow road."

Signage advising "No Dumping" is continuously required.



Sandy Greenblatt

COMMENTER C1

Greenblat, Sandy; local resident (May 19, 2010)

- C1-1: The comment states that 300 feet is the minimum length needed to adequately allow a truck, truck and trailer, tour bus or similar vehicle to slow down and pull into the pullout. Pullouts proposed as part of the roadway rehabilitation project would be up to 300 feet in length. This comment relates to the merits of the project and not to the adequacy of the Draft EIR; therefore, no further response is necessary. Please see Master Response 1.
- C1-2: The request for pullouts to be level with the roadway is noted. This comment relates to the merits of the project and not to the adequacy of the Draft EIR; therefore, no further response is necessary. Please see Master Response 1.
- C1-3: The request that trees overhanging pullouts be trimmed to allow tall vehicles to use the pullout without damage is noted. This comment relates to the merits of the project and not to the adequacy of the Draft EIR; therefore, no further response is necessary. Please see Master Response 1.
- C1-4: The support for permeable asphalt at pullouts is acknowledged. No further response is required.
- C1-5: The size of vehicles that would normally access pullouts is noted. No further response is required.
- C1-6: The comment states that many large vehicles (e.g., trucks, trucks with trailers, tour buses) would not pass cyclists, but follow them until it is safe to pass. This comment does not raise questions or identify errors contained in the Draft EIR; therefore, no further response is required.
- C1-7: The comment provides estimates of traffic volumes on SFDB based on knowledge of equestrian activity in the area and resulting numbers of trucks with horse trailers traveling on SFDB. The traffic volumes provided in the DEIR are based on actual traffic volume counts taken in October and November 2008. These counts include any trucks with horse trailers that were traveling on SFDB during the time the traffic counts were taken. This comment does not raise questions or identify errors contained in the Draft EIR; therefore, no further response is required.
- C1-8: The comment states that the traffic study included in the Draft EIR is understated. The EIR authors do not agree with the comment's conclusion. As described in Section 4.8.1 of the Draft EIR (page 281- 282), traffic counts were taken at Shafter Bridge from Thursday, October 23, 2008 to Wednesday, October 29, 2008 and at Platform Bridge Road from Tuesday, November 4, 2008 to Monday, November 10, 2008. While these counts may not account for all of the recreational traffic that occurs on the weekends during the summer months, it provides a good representation of the Average Daily Traffic along this stretch of SFDB. As described in Section 4.8.4 of the Draft EIR (pages 285-288), the project would

generate additional vehicle trips on weekdays during the construction period. No construction work would be conducted on weekends when traffic volumes are greater. The Draft EIR concludes that construction trips generated by the project would not be measurable on most segments of SFDB and would be minimal in the more congested areas east of the project area, resulting in a less-than-significant traffic impact. No change to the Draft EIR is warranted.

The comment also asserts that increased traffic would support the installation of numerous and properly constructed pullouts along the project alignment. As described in Section 3.4.1 of the Draft EIR (page 75), new paved pullouts in appropriate locations and of adequate size and configuration would be provided as part of the proposed project. The locations of proposed pullouts are shown on Figure 3.4-2 of the Draft EIR. This comment relates to the merits of the proposed project and not to the adequacy of the Draft EIR; therefore, no further response is required.

- C1-9: The comment supports the traffic conclusions contained in the Draft EIR. No further response is required.
- C1-10: The comment requests that the 30 mph speed limit be maintained in the vicinity of Samuel P. Taylor State Park; the speed limit be reduced to 35 mph from Shafter Bridge to the GGNRA boundary; and the speed limit be reduced to 40 mph from the GGNRA boundary to Platform Bridge Road. The request is acknowledged. This comment does not raise questions or identify errors contained in the Draft EIR; therefore, no further response is required.
- C1-11: The comment states that various signage should be installed throughout the project alignment to help improve safety for motorists and cyclists. The request for signage is acknowledged. This comment does not raise questions or identify errors contained in the Draft EIR; therefore, no further response is required.

June 25, 2010

RECEIVED
JUN 25 2010
MARIN COUNTY PUBLIC WORKS3:55 PM
J. Lane

To:

Mr. David Bernardi

1 I was fortunate to be able to read through a hard copy of the DEIR. The Biological
2 Assessment prepared for MCDPW is especially well done. The significant impacts as
described to flora and fauna, environmentally sensitive habitats and essential fish habitat
are too numerous to be mitigated to a less than significant impact. The significant
adverse impacts to these areas by the proposed project raised by the scoping letters in
2008, have not been fully addressed by the DEIR. I draw your attention to the November
23, 2008 comprehensive letter from CBD and SPAWN (Jeff Miller, Adam Keats and
Todd Steiner)

3 Reconsideration should be given the Alternative to continued maintenance of Sir Francis
Drake Boulevard, but in a more consistent way with a purposeful schedule. All the
problem areas have been earmarked in the DEIR.

4 The repair of SFB should be limited to only existing paved surfaces and no
5 existing pullout or shoulder areas should be surfaced. No parking signs should be
6 placed on all existing pullouts and shoulders that are now used for parking.
Human degradation of the riparian banks leading to the stream continually occurs
7 year after year at these locations. MMWD is already engaged in riparian bank
8 stabilization programs on Lagunitas Creek and should be consulted on this matter.
9 No removal of trees should occur. Any loss of canopy cannot be mitigated. All
culvert repair or necessary resurfacing or road repair should be accomplished with
10 NO adverse impacts to the endangered coho or other species dependent on a
11 functioning riparian corridor to include the 100ft.SCA. Impact 4.2.7 cannot not to
be tolerated. Bicycle and horse trailer traffic should be directed by signs at both
ends of this sensitive portion of SFB to use the available alternate routes.

I encourage the BOS to designate SFD as an historic scenic drive and to preserve
this roadway to the greatest extent possible in its present form. The county needs
to treat the roadways that are in close proximity to Lagunitas Creek and its
tributaries according to the proposed restrictions within the SCA that are placed on
the private property owners.

Thank you for the opportunity to comment. I was born and raised in Marin
County. This stretch of SFB was surfaced 6 years before I was born and I very
familiar with this area. My acquaintance with this wonderful canyon and this
charming road started when I was about 5 years old and has continued to this day.

Sincerely,



Cela O'Connor, P.O. Box 116, Bolinas, CA 94924 celaoconnor@hotmail.com

COMMENTER C2

O'Connor, Cela; local resident (June 25, 2010)

- C2-1: The EIR authors and the County do not agree with the commenter's conclusion. Section 4.3.4 of the Draft EIR (pages 185-213) addresses the potential effects to biological resources in the project area including special status species, native trees, tree roots, salmonids, and wetlands, and identifies appropriate mitigation measures to reduce potential impacts to a less than significant level. These mitigation measures have been developed by technical experts based on technical expertise and factual evidence. No additional response is required.
- C2-2: The EIR authors and the County do not agree with the commenter's conclusion. As described in Section 1.4 of the Draft EIR (page 3), a summary table of written and oral comments received during the public scoping period, and a reference to where the issue is addressed in the Draft EIR is included in Appendix A of the Draft EIR. Further, this Response to Comments document provides a response to each specific comment provided in the letters received during the public comment period. These responses should clarify to the reader that the Draft EIR represents an objective and comprehensive analysis of the potential environmental impacts of the proposed project.
- C2-3: The request that reconsideration should be given to continued maintenance of SFDB is acknowledged. This comment relates to the merits of the proposed project and not to the adequacy of the Draft EIR; therefore, no further response is necessary. Please see Master Response 1.
- C2-4: The comment that repair of SFDB should be limited and no existing pullouts or shoulder areas should be surfaced is noted. This comment relates to the merits of the proposed project and not to the adequacy of the Draft EIR; therefore, no further response is required. Please see Master Response 1.
- C2-5: Comment noted. As described on page 75 of the Draft EIR, remaining pullouts would be signed as "no parking" and other pullouts would be blocked with large rocks or boulders to discourage parking. This comment does not raise questions or identify errors in the Draft EIR; therefore, no further response is necessary.
- C2-6: The comment states that human degradation of the riparian bank currently occurs and that MMWD is already engaged in riparian bank stabilization programs on Lagunitas Creek. The comment further states that MMWD should be consulted. The comment is noted. This comment does not raise questions or identify errors in the Draft EIR; therefore, no further response is necessary.
- C2-7: The comment that no tree removal should occur is acknowledged. This comment relates to the merits of the proposed project and not to the adequacy of the Draft EIR; therefore, no further response is necessary. The comment further states that any loss of canopy cannot be mitigated. The authors of the EIR and the County disagree with this commenter's conclusion. Please see Master Response 6 related to tree removal.

- C2-8: Comment noted. As described in Section 4.3.4 of the Draft EIR (pages 187-200) and further clarified in Master Response 9, the proposed project could impact federal and/or state listed salmonid species. However, implementation of the mitigation measures identified in the Draft EIR would reduce potential impacts to a less than significant level. Therefore, no adverse impacts to the endangered coho or other species would occur as a result of the proposed project.
- C2-9: This comment states that Impact 4.2.7 cannot be tolerated. It is unclear to which impact this comment refers as there is no Impact 4.2.7 identified in the Draft EIR. Therefore, no further response can be provided.
- C2-10: The comment states that bicycle and horse trailer traffic should be directed by signs at both ends of this portion of SFDB to use alternate routes. Comment noted. This comment does not raise questions or identify errors in the Draft EIR; therefore, no further response is necessary.
- C2-11: The comment requests that the County designate SFDB as an historic scenic drive and to preserve it to the greatest extent possible in its present form. The request is acknowledged. This comment does not raise questions or identify errors in the Draft EIR; therefore, no further response is necessary.

JUN 23 2010

MARIN COUNTY
DEPARTMENT OF PUBLIC WORKS

Dave Bernardi, DPW
Marin County Civic Center
Response to EIR for Sir Francis Drake project

1 This section of Sir Francis Drake highway is a gateway to Pt. Reyes National Seashore for many of its three million visitors a year. It also leads to Samuel P. Taylor State Park, other destinations and residences. Motor vehicles, bicycles, animals and walkers use it to access west Marin. It is a major through route for residents, workers and visitors to west Marin. Many of these motorists speed through now with little attention for other road users, or the rich biological diversity and natural beauty beyond the roadway. For the same reasons, Sir Francis Drake is also a hazardous barrier to wildlife crossing it. They increase risks for themselves, other motorists, cyclists and pedestrians walking along.

Increasing the width of pavement on this section of Sir Francis Drake will increase higher speeds of motor vehicles. This will negatively impact safety and stress levels of motorists, neighbors, bicyclists pedestrians and wildlife on that road. Although the speed limits will not be raised, wider pavement and longer sight lines will increase average and extreme traffic speeds.

2 This increased speed will degrade the stated goal of improving safety of bicyclists and pedestrians. Assumptions about road shoulder increasing bicycle and pedestrian safety are not based on evidence. Road shoulders were described as a safe refuge for cyclists and pedestrians. The California traffic engineering code maintains that a 3' shoulder can be considered a bicycle facility. However this is not a federal standard, or based on any analysis of bicycle/pedestrian motor vehicle collisions. Like other engineering designs for bicycle and pedestrian safety, including painted crosswalks, bike lanes and separated bike paths, their "safety" is based on users "feeling" safer or engineers assumptions, not on accident statistics.

Declaring that road shoulders are a refuge for cyclists, or a safe space for pedestrians assumes that motorists are not distracted or impaired, so that a painted white line will prevent collisions. Some drivers regularly are, others occasionally, while many routinely drive aggressively, speed, use the shoulders or cross double yellow lines on blind curves. Oncoming motorists will squeeze as far as pavement allows to their right to avoid head on collisions, regardless of cyclists presence.

Cyclists being struck while riding on the road shoulder is more than a mere possibility. It's a motorist/bicycle collision category. The last cyclist killed on Sir Francis Drake was riding on the much wider shoulder in the higher speed section between White Hill and San Geronimo, struck from behind by a distracted driver.

Motorists focus their attention on the defined roadway, but adjust their speed to the width of pavement and their length of sightline. They are less likely to visually register a cyclist, pedestrian, motorcyclist, or wildlife in the traffic lanes than for larger motor vehicles. Their visual awareness is even more reduced outside of traffic lanes. The faster their speed, the narrower their focus within the painted line edge of the road., Outside these, whether on a road shoulder, bike lane,

sidewalk or separate path, users or are less visible to many motorists. These driver habits render the safety factor of shoulders moot.

Cyclists separated from traffic (even by the painted line designating a road shoulder or Class II bike lane) **can become virtually invisible to some motorists.** This is most likely at intersections for wrong way cyclists (and pedestrians) whether in the lane, road shoulder, bike lane, sidewalk or separated path, especially at night. There are also higher risks for cyclists riding with traffic direction but outside traffic lanes than when the cyclist is legally and visibly sharing the lane. Almost invariably when a cyclist or pedestrian is hit by a motorist they **"never even saw them"**, and they're less likely to see them outside the traffic lane.

Road shoulders and bike paths accumulate gravel and glass, erode at the edges and become lumpy or cracked by tree roots. Motor vehicles blow debris outside of traffic lanes, but shoulders and paths are infrequently cleared or maintained. Higher speed cyclists will not use shoulders or paths in those conditions.

They shouldn't be expected to while lower speed, less experienced, and lower skilled cyclists should be directed to a frequently maintained path that runs parallel to the road, not given a false sense of safety with road shoulders. They are more likely to suffer falls from dangerous surface conditions than a more skilled cyclist. These two categories of cyclists have distinctive habits and abilities. Casual riders and pedestrians should be encouraged to use the separate path. Racing cyclists can maintain lower traffic speeds and can legally use the full lane where narrow lanes and short sight lines make it unsafe for motorists to pass. Motorists should be educated about safe passing of cyclists, and to slow down and wait in those sections, instead of being encouraged to blow through them.

It's common for some motorists to believe that cyclists should be using any separate bike path or road shoulder and verbally or physically abuse riders who legally use the traffic lane as a vehicle. Experienced cyclists will not use the shoulders or separate path, because of the hazards and legal rights, so will be subject to more road rage and close passing with higher motor vehicle speeds. Less experienced cyclists will weave along on the shoulder either with traffic or against it, putting at risk pedestrians on the shoulder.

Widening the paved roadway with shoulders even though traffic lanes are narrow and lengthening sight lines will encourage drivers to pursue higher speeds on this section no matter what the posted speed limit is. A traffic speed survey will undoubtedly show that a significant minority of motorists already drive 5-20= mph faster than the posted limits on different sections of the existing roadway. Usually these are locals who drive the road more frequently. Inevitably they will drive even faster with wider lanes and "improved sight lines". Faster vehicle speeds will increase the risk of serious injury or death to motorists cyclists, pedestrians and animals. It does not address the impact of louder traffic noise from increased motorists speed on humans and wildlife in in this stretch, or higher levels of toxic pollutants blown farther. It will also increase greenhouse gas emissions, which must conflict with some county resolution or master plan.

5

I'm in favor of the repaving only option, paving some turnouts and repairing the slide area.

TRAFFIC CALMING SOLUTIONS

While the current condition of the road surface is potentially hazardous to cyclists, it also slows down some drivers, while the improved paving planned for the road will increase speeds of most motor vehicles. Allowing deteriorating road surfaces to reduce traffic speed is not an approved traffic calming method, (although it seems to be the only one widely used in west Marin) but there are effective and proven methods that can reduce traffic speed even with a better surface.

6

Leaving existing trees close to the road, along with engineering solutions to make the road appear narrower with shorter sight lines will reduce the speed of most drivers. Educational signs about the presence of bicyclists, pedestrians and animals on a roadway can reduce traffic speeds of motorists, less so if they are impaired, distracted or aggressive. If traffic calming designs were included in an option, they could make this road section safer for motorists, bicyclists, pedestrians and animals who use it or cross it, instead of turning it into a throughway designed for faster transit by motorists.. Reducing traffic speed would also make noise, pollution and dust from traffic less burdensome for residents and campers near the road.

7

8

If traffic speeds on this road were 25 mph bicyclists and pedestrians could share the road more safely and comfortably. That won't be accomplished with posted speed limits, because most drivers average 5-10 mph over the posted speed limit and enforcement rarely targets drivers within that excessive speed range. While traffic calming engineering, enforcement and education can influence more drivers to reduce their speed on certain roads and conditions, they have less effect on drivers who are impaired, aggressive or distracted. Police enforcement is extremely expensive and only temporarily effective at reducing speeds. Traffic cameras issuing citations for speeding and lane violations can operate 24/7. They are resented by motorists who believe they infringe on their right to ignore most traffic safety laws.

There are innovative engineering solutions that Marin could adopt to meet best practices design standards for pedestrian and bicycle safety and access at a lower cost than laying down extra width of asphalt shoulders, or increased enforcement whether by police or cameras. These would conform to Marin county's master plan, which declares that Marin prefers to follow **best practices designs** and promote **innovative, sustainable solutions**.. Traffic calming designs and reduced speed limits are a best practices transportation solution that provides all users greater safety and convenience, while meeting other goals of the master plan.

Using educational signage to inform drivers and cyclists how to share the road would make it an official Class III signed bike route, the safest and most affordable improvement for bicycles. Pedestrians are safer using separate or curbed sidewalk/paths. A curbed sidewalk for pedestrians can narrow the appearance of the road width, helping to maintain a reduced speed limit without

8 con.

relying on constant enforcement, which is not available and only temporarily effective anyway. These are not included on any of the planned options, so the goal of improving pedestrian access is not met. Pedestrians are no safer on road shoulders than cyclists, although they may feel safer and use them, putting themselves at risk from motorists and cyclists.

9

Since one of the goals is to improve pedestrian safety and access, why are there no pedestrian crosswalks in any of the options? There are probably more pedestrians crossing SFD at various locations on this stretch, than walking alongside it now. Crosswalks without adequate traffic calming engineering, also give pedestrians a false sense of security. One option for safer crosswalks that should be considered are Speed tables that are 20-25' wide with a flat center section for a crosswalk. These raised crosswalks are significantly safer than painted line crosswalks that need frequent repainting to remain visible. Wildlife will not know to use crosswalks of course, but lower speeds in general will make this less hazardous for them and motorists.

The 25-30' width of speed tables allow motorists to drive over them at 20-25 mph with no discernable ride disturbance. Emergency vehicles can use them at higher speeds with reduced impedance. There is also less noise from vehicles driving over them or speeding up between them, improving their acceptance by neighbors.

10

Bicycling facilities in Marin county are almost entirely located in the more urban eastern half, with some facilities built or planned for Pt. Reyes and the San Geronimo valley, yet an enormous number of recreational cyclists use other west Marin roads. Slowing overall traffic speed and signing these roads as bike routes with Share the Road reminders would be the most economical way to improve cycling safety and comfort, as well as driver awareness of cyclists' presence and legal requirements. Bike paths and lanes are far more expensive and less safe than signed routes. Education with graphically improved signs would improve cyclist safety.

11

Some of the highest traffic speeds on this section of Sir Francis Drake road are in front of the SPAWN site, where the road has longer sight lines and a wider appearance. Motorists typically drive much faster through this section. It's hazardous to enter and exit properties off this section.

12

A mitigation project for some of the increased sediment and pollutants entering Lagunitas creek watershed from any of the planned options could reduce their opposition. There is a channeled ditch (formerly a seasonal creek) close by the north side of SFD across from SPAWN, which drains into the seasonal creek on the west side of the property which becomes a storm refuge for fish from Lagunitas Creek during winter storms.

It dries up seasonally, although historically it may have once flowed all year round. The ditch on the north side of SFD beside the roadway flows into a culvert under the road into the storm refuge creek. Restoring the ditch to a meandering shaded creek and daylighting the culverted creek with a steel grated vehicle bridge over a stone lined and riparian planted naturalized creek instead of asphalt over this culvert would absorb some of the toxins in road runoff before they enter Lagunitas creek. This grated overpass of the daylighted creek would

13

also serve to slow traffic driving over it, making it safer for staff and visitors entering and exiting SPAWN site from the highway.

Improved management of grazing pressure on the upper watershed riparian areas, with key lines feeding it could possibly return this dry creek to year round or longer seasonal flow.

Lowered traffic speeds would reduce noise, toxic road dust, and safety hazards for humans and wildlife entering the killing zone it is with the current high speed road traffic and even higher speeds resulting from this plan. Lower motor vehicle speed would also encourage motorists to make an impulse decision to stop at the park and other visitor facilities.

MY CREDENTIALS

As the founding president of the Broward Bicycle Lobby in 1980, I originated the first Bicycle Day and Bike to Work Week in Florida, officially proclaimed by the Governor and legislature and 29 local municipalities in May of 1981. I was a founding board member of the **Florida Bicycle and Pedestrian Safety Council** and was appointed chairman of the **Broward County Bicycle Safety Committee**.

I designed the first Bike Route/Share the Road sign in 1981. This sign has been used in bicycle safety education programs on Iowa and Hawaii, and widely copied. I have offered it free for such use and on Marin's roads to Marin County Public Works several times over many years. Although it is both more affordable and superior in educational content to current county bike route double signs with a graphic of a riderless bicycle crossing traffic, to my knowledge this offer has never been considered, definitely never even acknowledged.

Class III bikeways where cyclists share the traffic lane legally on traffic calmed, signed bike routes are safest.



14

Signed bike lanes present the same problems as road shoulders, as well as frequently being used for overflow parking. Separate paths are most hazardous at intersections, except for rider only falls, or collisions with other cyclists or pedestrians, who are safest on sidewalks.

Thank You,

Stephen Simac

Stephen Simac
Box 224
Stinson Beach, CA 94970
868-9455

COMMENTER C3

Simac, Stephen; local resident (June 23, 2010)

- C3-1: The comment that increasing the width of the pavement on this section of Sir Francis Drake would increase higher speeds of motor vehicles is acknowledged. Please see Response to Comment B4-29.
- C3-2: The comment asserts that the proposed project would decrease the safety of bicyclists and pedestrians along this section of SFDB. The comment also addresses the potential safety impacts associated with bicyclists using road shoulders rather than “sharing the road” with motorists. This comment relates to the merits of the proposed project and does not raise questions or identify errors in the Draft EIR. Therefore, no further response is necessary. Please see Master Response 1.
- C3-3: The EIR authors disagree with the comment’s conclusion that the proposed project would increase traffic noise associated with increased speeds along the roadway. As described in Section 4.10.4 of the Draft EIR (page 314), the proposed project would replace the existing asphalt concrete with RAC, which is a road material made of recycled tires that has been successfully used in California since the 1970s. The use of RAC has a beneficial effect with respect to noise by reducing vehicle noise on roadways. Research by state highway departments have proven this fact including a 1999 study by Sacramento County, which concluded that the use of rubberized asphalt on County roadways resulted in a 4 dBA reduction in noise levels over that provided with conventional asphalt.¹⁰ Even if RAC were not used, the proposed project would result in a net benefit related to traffic noise along the roadway alignment by repairing cracking, reducing roughness and providing a smooth, uniform roadway surface. Therefore, once the proposed project is complete, noise levels in the vicinity of the project site would be substantially reduced over existing conditions.
- C3-4: The EIR authors disagree with the commenter’s conclusion that the proposed project would increase greenhouse gas emissions associated with increased speeds along the roadway. As described in Section 4.12.4 of the Draft EIR (pages 338-339), the proposed project would rehabilitate the roadway to improve the deteriorated pavement that has exceeded its design life. This is a rehabilitation project that once completed, would not result in increased GHG emissions because the project would not increase vehicle trips or vehicle miles traveled on the roadway. Therefore, no new regional vehicle emissions would occur and the impact to long term GHG emissions would be less-than-significant.
- C3-5: The commenter’s support for the repaving only option is noted. This comment relates to the merits of the proposed project and does not raise questions or identify errors in the Draft EIR. Therefore, no further response is necessary. Please see Master Response 1.

¹⁰ County of Sacramento, 1999. *Report on the Status of Rubberized Asphalt Traffic Noise Reduction in Sacramento County*. November.

- C3-6: The commenter states that leaving existing trees close to the road, along with engineering solutions to make the road appear narrower with shorter sight lines would reduce the speed of most drivers. This comment relates to the merits of the project and not to the adequacy of the Draft EIR. Therefore, no further response is necessary. Please see Master Response 1.
- C3-7: The comment states that educational signs can reduce traffic speeds of motorists. The authors of the EIR agree. However, this comment relates to the merits of the project and not to the adequacy of the Draft EIR. Therefore, no further response is necessary. Please see Master Response 1.
- C3-8: The comment recommends traffic calming techniques to reduce vehicle speeds and improve safety for pedestrians and bicyclists. This comment relates to the merits of the project and not to the adequacy of the Draft EIR. Therefore, no further response is necessary. Please see Master Response 1.
- C3-9: The comment outlines improvements for pedestrians that should be included as part of the proposed project (e.g., separate curbed sidewalks/paths, crosswalks, speed tables). This comment relates to the merits of the project and not to the adequacy of the Draft EIR. Therefore, no further response is necessary. Please see Master Response 1.
- C3-10: The comment states that slowing traffic speed and signing rural roads in west Marin as bike routes with Share the Road reminders would be the most economical way to improve cycling safety and comfort. This comment relates to the merits of the project and not to the adequacy of the Draft EIR. Therefore, no further response is necessary. Please see Master Response 1.
- C3-11: The comment that the highest traffic speeds on this section of SFDB occur in front of the SPAWN site where the road has longer sight lines and a wider appearance is noted. This comment relates to the merits of the project and not to the adequacy of the Draft EIR. Therefore, no further response is necessary. Please see Master Response 1.
- C3-12: The comment provides information on a potential mitigation project to reduce sediment and pollutants entering the Lagunitas Creek watershed. The project entails improvements to an existing channeled ditch located across from SPAWN along SFDB. The commenter's suggestion is acknowledged. While the suggested mitigation project may have merit, the Draft EIR provides mitigation measures to reduce the environmental impacts to less than significant levels. No additional mitigation measures or changes to the Draft EIR are required.
- C3-13: This comment summarizes the points made throughout the letter. Please see the responses above.
- C3-14: This comment summarizes the points made throughout the letter. Please see the responses above.

From: David Bernardi <dbernardi61@gmail.com>
Date: May 24, 2010 3:27:11 PM PDT
To: John Roberto <jraplan@sbcglobal.net>
Subject: Fwd: Regional Clearinghouse

John,

no action required but just FYI

Dave

----- Forwarded message -----


From: Phiroze Wadia <pwadia@larkspurcityhall.org>
Date: Mon, May 24, 2010 at 3:25 PM
Subject: RE: Regional Clearinghouse
To: Neal Toft <ntoft@larkspurcityhall.org>
Cc: Hamid Shamsapour <hshamsapour@larkspurcityhall.org>, "dbernardi61@gmail.com" <dbernardi61@gmail.com>

Neal:

I spoke with Mr. Dave Bernardi from the County.

He informed me that this work is not in Larkspur. It is in West Marin from Platform Bridge Road to Shafter Bridge.

Sincerely,

PHIROZE K. WADIA S.E.2020; LEED AP City of Larkspur
Department of Public Works
 **400 Magnolia Avenue, Larkspur, CA 94939**

 **Land Line :**(415) 927- 5017  **Fax** : (415) 927- 5090
 **Larkspur Home Page** : <http://www.ci.larkspur.ca.us/>
 **Larkspur Municipal**
Code:<http://www.codepublishing.com/CA/larkspur.html>

From: Neal Toft **Sent:** Friday, May 21, 2010 12:41 PM **To:** Phiroze Wadia **Subject:** FW: Regional Clearinghouse

Phiroze-

1

The regional clearinghouse has posted a Draft EIR for Sir Francis Drake Roadway Repairs and Improvements by Marin County Public works (2nd page). Anything to do with the Larkspur segment?

-Neal

From: Dayle Farina [mailto:DayleF@abag.ca.gov] **Sent:** Friday, May 21, 2010 11:50 AM **To:** Dayle Farina **Subject:** Regional Clearinghouse

Clearinghouse Recipients:

Please find attached: CEQA Log - all projects of regional significance that were submitted to ABAG, the Regional Clearinghouse, between May 1 and May 17, 2010. As a reminder, we ask that, as directed by the California Code of Regulations, (Title 14, Chapter 3. Article 7, Section 15087) you continue to submit all projects of regional significance within your jurisdictions to ABAG for inclusion in the bi-monthly CEQA log or Clearinghouse Newsletter. As always, we welcome any concerns or comments to this process. If there are any changes to e-mails, person(s) receiving this notification, please let us know.

Regional Clearinghouse Coordinator
Association of Bay Area Governments
Office: 510-464-7993

COMMENTER C4

Toft, Neal; City of Larkspur (May 21, 2010)

C4-1: The comment asks for clarification on the location of the proposed project. The project site is located in west central Marin County, approximately 2.84 miles southeast of Point Reyes Station, and 0.58 mile west of Lagunitas, California. No further response is necessary.

4.4 PUBLIC HEARING

Marin County Board of Supervisors
3501 Civic Center Drive
Chambers - Room 330
San Rafael CA 94903

ITEM 12

**Hearing: Draft EIR for the Proposed Rehabilitation of Sir
Francis Drake Blvd. between Schafer Bridge and Platform
Bridge Road.**

**Recommended Action: a) conduct public hearing; and b)
provide direction to staff.**

Tuesday, June 15, 2010, 1:30 p.m.

Appearances

BOARD OF SUPERVISORS

Susan Adams

Judy Arnold

Steve Kinsey

Charles McGlashan

Item 12. Hearing: Draft EIR for the Proposed Rehabilitation of Sir Francis Drake Blvd. between Schafter Bridge and Platform Bridge Road.

Recommended Action: a) conduct public hearing; and b) provide direction to staff.

Supervisor Arnold - Okay, welcome everyone. This is a public hearing on the Draft Environmental Impact Report for the Proposed Rehabilitation of the Sir Francis Drake Blvd. between Schafter Bridge and Platform Bridge Road. And the action that we are taking today is to receive public comment and answer questions, and make sure that that is included in the EIR. Is that correct, Farhad?

Mr. Masourian - Yes.

Supervisor Arnold - Okay, who is going to being.

Mr. Masourian - Good afternoon, Madam President, Members of the Board, Farhad Masourian, Public Works Director. It has been a long awaiting project that we would like to present for the Board's consideration. Today is the very first step, which is only receiving public testimony and directing the staff to come back and incorporate all the comments and questions into the document. This project - and I want to take this opportunity to thank Transportation Authority of Marin, this project is funded 100 percent by Measure A transportation sales tax. I would like to

introduce you to the geniuses who have brought the project together this far, and we will see how they do next time, beginning to my left is Dave Bernardi, he is our Project Manager, and John Roberto, he is our department's Environmental Consultant, making sure that we are looking at everything, and to John's left is Robert Stevens, Robert's firm, BKF Engineers, were retained by us to help us design the project. In the back, we have Laura Lafler and next to her is Shana Giller of LSA Associates, who prepared the Draft Environmental.

I want to take this time and thank Supervisor Kinsey and many many community members, as well as regulatory agencies who, over the last two years, as you will see in a minute, they have taken a number of bus rides with us and have been a great advisor and consultant on how to do this very unique and environmentally sensitive project. So, with your permission, I will turn it over to John Roberto, who will have five minutes, or a 10-minute PowerPoint presentation. Thank you.

Mr. Roberto - Madam President, members of the Board, my name is John Roberto, and I have been working with the environmental consultant, and actually the Project Engineer on this project now for over a year, almost two

years, and this all started back in about 2008. We prepared a Notice of Preparation on October 27th of 2008 informing the community that we were going to prepare an EIR on this project, and we had a scoping meeting during that period that was very well attended, and I will go over that briefly in the presentation. On May 12th, we issued what is called the Notice of Completion that the Draft EIR had been prepared, and we circulated it for public comment. The first step in public comment is to have held this public hearing, so the public can appear today before this Board and comment on the draft document and what they would like to see addressed or modified in the final document. Following this hearing today, there will be still an extended time for the public to submit comments on this document through June 25th of this year. And at that point, we will close the public comment period and prepare the Final EIR to be brought back to this Board hopefully for certification.

Today, what I would like to do, this hearing is really a comment hearing, to hear the public. We are not going to answer comments today. The comments that are received, whether we did not study enough, or there needs to be more done, or there may be errors, we will take all

those, we will analyze all of those, and if there are errors, we will amend the final document to change it. If we have to add something to that, we will do it. If we have to respond to comments in other manners, we will do that and prepare that final and bring it back to you.

Supervisor Arnold - So the comments should be directed to the adequacy of the EIR. Is that correct?

Mr. Roberto - That is correct. Sometimes there may be feelings about this project and how this project should look and how it should be designed, we are not going to get into that today. This Board will get into that; I assume, once the EIR is certifying, the Board can make its decision on how it would like to proceed with this project in this area. So, once again, the purpose of the hearing is to receive public comment, and then for you to direct staff to prepare written responses to all the comments received.

Farhad touched on this briefly, this project is totally funded by Measure A funds, and Measure A designated road maintenance and congestion relief in Marin County. It is our understanding that the residents of Marin, with local public officials and others, got together to talk about what projects should have priority, and the rehabilitation of Sir Francis Drake Boulevard was identified as a priority

project. So, in the end, this rehabilitation is a mandate of the voters and the local community, and those who have supported Measure A.

A little bit of background on the roadway. The roadway was first constructed in 1929, and really has just been maintained over the last - I do not want to add the years up, but close to 70 to 80 years since the roadway was constructed, and there has been a lot of deterioration going on. If anyone has traveled out to the Coast or lives out that way, they know what it is like traveling through Samuel P. Taylor Park and the GGNRA and out to the Coast. There has been periodic maintenance, but this maintenance has not been adequate to keep the road. Under its current condition, the road really does not serve, let alone, vehicles, bicyclists and pedestrians, there are a lot of problems traversing this roadway.

Over the last number of years, the Marin DPW staff has had a number of community meetings. The first one was in February of 2007 where there was a bus tour of the project area to look at all the constraints that existed in this area to rehabilitating the roadway. In October of '07, there was a community meeting to talk about all these existing conditions out there and what were the issues of

concern to the community. Then, in February of '08, there was another bus tour to talk about different ways of making improvements to this roadway. In March of 2008, there was another community meeting to discuss various alternatives as to how to address roadway rehabilitation, and that was followed again by another bus tour in April of 2010, which was just a couple of months ago, to review the proposed project as proposed by the Department of Public Works, that is being brought to you today for environmental review and subsequently for action.

Some of the major environmental issues we encountered out there, and this may not be a surprise to anyone, was the quality of water in Lagunitas Creek, and the water quality and its effect on the various fish species that inhabit the creek, and the rare and endangered fish species in that creek. In addition to the fish, we also have the red-legged frog, the spotted owl issues, and other endangered species issues that we had to address in the environment report. When you look at this, you will see a very very large Appendix and there is a very large biological assessment in that appendix detailing all the studies. The issue of fish passage and use of culverts for

passage was brought up and I am going to defer right now to the project engineer to talk about that briefly.

Mr. Stevens - Hi. I am Robert Stevens. There was a study conducted by Marin County to identify the potential for fish passage along the corridor. Three of the existing culverts were identified as potential, we found that two of the culverts are large concrete box culverts that currently allow for fish passage, the final culvert was a corrugated metal pipe that discharged 10-12-feet above the creek. Subsequently, an application was made to the Department of Fish & Game for grant funding to facilitate potential for fish passage improvements at this location. The Fish & Game concluded that this would not be an appropriate fish passage area because, upstream of the crossing was not suitable habitat for fish.

Mr. Roberto - That culvert he is talking about is actually Barnaby Creek and that was looked at in quite a bit of detail. In the scoping meeting that we had, fish passage was a major issue that was brought up and we took a long hard look at that in this Environmental Impact Report, and Robert's office did the design of the roadway improvements.

Tree removal and the impact on trees was another major issue in through this leg of the roadway, and the

Department of Public Works, in their direction to the consultant preparing the design on this, was to not remove any trees in its design, if they could avoid doing that. The project, as designed, the resurfacing does not require the removal of any trees, but there is a landslide, and we will touch on that briefly. That landslide needs to be repaired. The roadway is right adjacent to the creek bank and everything is sliding into the creek. That landslide repair will require the removal of eight trees between the edge of the roadway and the bank, and they are basically on the bank. These trees would have to be removed in order to repair that.

The other issue that came up, of course, was the multiple people who use the roadway and the different modes of transportation, and one of the objectives of this roadway we have is to try to get as much, as wide a lane as you can get paid, and the shoulder paved, and by avoiding trees, there was limitations of what we could do. We took a look at an Option A, it is not the proposal, but it is there in case this Board and other arguments come up at the time the Board holds its hearing on the project, to take a look at what other opportunities there might be to widen that shoulder for additional pave and alignment, and that

resulted in the removal of nine large redwood trees. These trees, if you go up there, they are right on the road, and these would have to come out to provide that additional alignment. To go any further would require major tree removal, so we did not look at that, we tried to limit the number of trees. These do not occur in one area, they occur at different locations along the roadway, and the Draft EIR details all of that.

Cultural resources is always a sensitive issue; this whole area, besides the roadway, the bridges, there are potential Native American resources out there, and that was another area of concern. The cultural resource survey is not part of the environmental document, we cannot publish that document, but just want to tell you, it comes in at about that size, and it is summarized in this document in the mitigation measures, but that is also available, and there are multiple consultations by the Cultural Resource consultant preparing that document with the Native Americans, and also with the various entities that require you to protect cultural resources.

Project construction was of concern to many community members and of concern to us because we are finding it is really this phase of the project that could

have some detrimental effect on water quality, the creek, tree removal, of course, and other kinds of things. So project construction was looked at in detail in this EIR. One thing I want to point out, because I have had a few comments, the Environmental Impact Analysis that is in this report really looks at the effect of this proposed project, the rehabilitation project on the existing condition. The existing condition is not a pristine, undeveloped area, the existing condition includes the existing roadway. So the question really becomes, what will this project do to that existing condition? And, of course, a real effort has been made to improve upon the existing condition, and I think the environmental analysis points that out.

Some of the detrimental effects one might associate with the roadway do not go away under this project. This project is not a stream rehabilitation project, this project is not a bikeways project or a trails project, it is resurfacing the roadway. So I think you will find over time that there may be comments made in that area, but I would just like you to keep in mind that we analyzed the impacts of rehabilitating the roadway on the existing condition.

Now we will get into the project and Robert will explain the project.

Mr. Stevens - Again, I am Robert Stevens. The project limits are Schafter Bridge on the east and Platform Bridge on the west, the total length is 5.2 miles, and all of the improvements are generally contained within the County's right of way. If you have traveled down the roadway, you will note that it is in a state of severe distress. The road was initially paved with a concrete pavement that is starting to crack and separate, you can see in this photograph here where there is some large longitudinal and transverse cracks that are occurring. As this occurs, the actual concrete slabs are becoming disjointed and, when you stand along the edge of the roadway, you feel the vibrations as passing vehicles travel through the corridor, as well as it is very noisy as the concrete slabs begin to move. Stormwater is actually penetrating through these cracks, it is worsening the condition, and worsening the sub-grade condition, and further exasperating the deterioration. There are sections where the county as previously applied asphalt pavement overlays to it, but it is cracking and peeling off the surface, as you can see in some of the photographs here.

Actually, this is probably a better exhibit of that. Again, it is a very unique condition, there are some severe constraints along the edges of the roadway, there is significant mature vegetation, there is very very steep banks located within one to two feet of the edge of the roadway, right here. There are large mature trees located, again, right at the edge of the existing pavement, and there are some very poorly defined drainage wells along the edge of the pavement which, in storm events, actually overtop and flood the roadway there.

So the objectives that were set out for this project were, 1) to restore the roadway pavement to provide an additional 30-year design life, 2) protect environmental resources to the greatest extent possible during and after construction, 3) improve the roadway alignment where possible to enhance safety, and 4) to improve pedestrian bicycle use of the roadway. So there are two sections of this, how we are going to rehabilitate the pavement. Since the condition on the easterly section here where the pavement is severely deteriorated, we are going to use a crack and seat technique in which, in the first phase, we grind off any pavement that is present on it, and then we crush the existing concrete in place, so we actually leave

the roadway materials there, we do not excavate and remove, we crush that material in place, we recycle it in place, and we come back and we overlay on the bottom lift asphalt to concrete, and a top lift of pervious asphalt. And the sections towards the westerly here, where the road is the best, we simply fix damaged sections, we grind off the existing pavement, and then again we apply a bottom lift of solid asphalt and a top lift of porous asphalt.

And then the project looks at the following: we improve the drainage systems, we limit roadway pullouts where vehicles currently are exiting the roadway and parking on the dirt, we repair a landslide along the corridor, we attempt to reduce erosion, and we modify the roadway alignment and the width where we can. So these are the three typical sections that the design of the project would allow for. In the most kind of wide open space here on the left, which is also in the westerly section, we provide two travel lanes of 11-feet wide, as well as two shoulders of four-feet wide. As the road becomes more and more constrained with slopes and vegetation and trees, the shoulders decrease from four-feet to two-feet here, and the lane will remain as 11, and in the most constrained location near Schafer Bridge and this whole corridor here on the

east side, we provide two travel lanes of 11-feet-wide - sorry, 10-feet.

So there is existing 72 drainage culverts that convey stormwater underneath the roadway to Lagunitas Creek. Of those 72 culverts, 68 of them will be replaced. Generally, a lot of the culverts - or many of the culverts you can actually see from the roadway, so the culverts that are actually visible on each end of the roadway, they will be dug out and replaced with the new section before the road is paved. There are certain culverts that actually extend a considerable distance through the forest, to a point - it is almost you cannot tell where it is actually discharging, and that location, we will not actually replace the culvert as it travels through the forest, we will just attach it to where we can find it. Where we notice erosion occurring, we will actually re-build the bank, and we will put either energy dissipating device down, or a mat fabric or something and plant the slope to help prevent erosion. And again, along the edges of the roadway where those poorly defined drainage features are, we are going to add what is known as a bio-retention swell here, which allows stormwater to run off the roadway, percolate down through a very permeable material, so it could be collected and conveyed away, and

this also promotes the quality of stormwater discharge from the roadway.

So the pull-out locations, there are 28 locations that are feasible for a vehicle to pull off the roadway, and there is evidence of that by erosion and various other features that are occurring along the edges. The project will block 23 of these pull-outs and it will provide five improved areas. The improved areas basically occupy a space currently used for vehicles, they vary in size, they will be designed to allow for a pervious asphalt layer, so stormwater drains down through a sand layer and before it is discharged into the Lagunitas Creek Watershed. These pull-out locations could be increased in size, we know there has been some comment related to the horse trailers and various other large vehicles, they may not be sized appropriately to accommodate that. Our concern is it could potentially require additional fill, removal of vegetation and trees and retaining wall construction. Again, these areas are very constrained in their current condition. So as these retaining walls - as the slope banks here are very steep, we looked at - the project proposes to install short retaining walls to allow a slightly wider asphalt shoulder, to provide a refuge for bicyclists, and also to help vehicles with

better sight lines as they travel along the roadway. The walls are all less than three-feet in height and they add about one to two feet of shoulder width, and there is 2,000 total feet of low retaining wall along the project area. They are discontinuous and, again, used in only the most constrained locations. The wall is composed of stained concrete legging embedded in steel I-Beams. As John mentioned, there is a landslide that is occurring here, just to the west of Schafer Bridge, you can see the edge of the bank starting to slip away from the roadway here. You can see the steepness of the slope down in this photograph right here, and we know that Public Works has done a subsequent number of overlays in this area, and we know that the asphalt is sinking probably two to four inches a year. When the road was constructed, it was constructed in a natural little creek area there, the fill was placed and it was not compacted appropriately, and it is sinking. Also, there is a culvert here that is collecting runoff from the other side of the hill, that is discharging high on the bank and causing erosion. The project proposes to remove material here and build a concrete tie-back wall in this location here. And as John mentioned, this is the location where

there will be eight trees removed in this location here to facilitate the construction of the retaining wall.

And as we were tasked with looking at a way, how could we add additional shoulder space along the corridor? Since the area is very constrained and it is not so easy as just putting one or two feet of additional shoulder space, because it would either require filling of the creek, or construction of large retaining walls, the only other variable is the trees along the corridor. So, what Option A does is it says, if we removed Redwood trees, or trees along the corridor, how much additional shoulder space could we achieve? If we removed nine large Redwood trees, it will add 2,400 linear feet of shoulder space, and this should be noted, that the shoulder space is not continuous along the corridor, it is discontinuous, but each section of shoulder is of sufficient length to actually be useful.

Mr. Roberto - And that is the project in a nutshell. What will happen now is, under our current schedule, you are holding the public hearing on June 13th, which is today. The comment period on the Draft EIR will end on June 25th. We anticipate that the final EIR should be back to the Board in October of this year, and then, if the Board decides on a project, whatever that project is, that

that project should be under construction by the spring of 2011.

What happens after the meeting today? Well, after the meeting today, we have - you may notice this young lady over here, she is a Court Reporter, we are recording everything that is being said so that we have a complete record of all the comments made. We will meet with the Court Reporter to review those documents, as well as the notes we take today, and all comments made will be responded to in writing. After we have prepared the Response to Comments, and if it requires edits to the draft, we will make those edits, and then we will circulate the Final EIR for a period of approximately two weeks. At that point, anyone, the public, anyone, will be provided an opportunity to submit comments on the Final EIR, and there will be comments on the responses we made, or others, but those would have to be submitted in writing, there will be no public hearing on the Final EIR. This Board will hold a hearing to certify the document, but we are not going to have a second round of responses to comments. And the final meeting you have will be for certification.

So, if there are any other questions the Board has right now about the process, if it was not clear enough, or

the purpose of the meeting, or about the project itself, we are ready to answer those. Or, if you do not, I would advise you to open the public hearing.

Supervisor Arnold - Does the Board have any questions?

Supervisor McGlashan - I am just curious, you mentioned that the permeable paving goes on top of impermeable, and so you basically take that flow of water that gets absorbed through the permeable paving, and then you put that into some kind of French drain and route it to the proper culvert, or whatever? Is that how it works?

Mr. Stevens - So the entire project will receive a top lift of permeable paving. What will happen in that condition is the water will seep through, it will hit the layer of impermeable asphalt, and then it will flow to the edges and drain off.

Supervisor McGlashan - So it is a sheet flow in a sense?

Mr. Stevens - It is a sheet flow. Well, there is - that is the condition in that location there, and we are doing that because we are preserving the existing concrete underneath there, so we need to kind of keep the water from going underneath there, and undermining the roadway. In the

locations where we have the pull-out areas, that water will seep straight down through the entire layer and go into the sand that will be constructed underneath it.

Supervisor McGlashan - All right.

Supervisor Arnold - Any other questions? Okay, I am going to open the public hearing and you will have three minutes. How many people would like to speak? Okay, great, so you are going to have three minutes and, as you know, your comments will all be recorded, there will not be any answers given to them today, but they will later. So is there a first speaker coming forward?

Supervisor McGlashan - As he comes up, can I ask another quick question about this permeable paving, I am just curious, have we had enough experience with it yet to know what happens as soil and duff from the Redwood trees gets down into the little holes in it, you know, it looks sort of like a rice crispy treat and has those little interstitials get filled up with real dust and stuff, how well does it perform over the long term?

Mr. Stevens - There have actually been some interesting research completed about what is known as, it is an open-graded friction course, 1) the open -graded friction course if usually a maintenance layer, it is assumed that it

is milled off and replaced, and what they found is that it becomes plugged at the same time that you actually have to grind off that surface and replace it. One of the key benefits they are find is that the quality of the effluent discharge is actually highly improved, so that is kind of one of the unique features that they found.

Supervisor McGlashan - And the interval of milling it off in replacement, that is comparable to other impermeable asphalts, or whatever?

Mr. Stevens - Typically, yes.

Supervisor McGlashan - Great, good. Thank you.

Supervisor Arnold - Only you, Supervisor, could mention interstitial and rice crispy treats in the same sentence, I love it.

Supervisor McGlashan - Technical terms, you know.

Supervisor Arnold - Were you going to add something?

Mr. Stevens - I was just going to say that it is a function of the material that is below it since, structurally it is not a structural layer, the asphalt and the concrete below it are actually providing the load carrying capacity.

Supervisor McGlashan - Great, thank you. That is really helpful.

Mr. Perry - Supervisor Arnold, I am curious if I have any more time left.

Supervisor Arnold - I have not started yet, Andy.

Mr. Perry - My name is Andy Perry with the Marin County Bicycle Coalition. I wanted to thank the Department of Public Works for this report. Many of the concerns that we submitted initially have been addressed in this version of the EIR. The Marin County Bicycle Coalition's first concern, of course, is safety, and also we recognize the beauty of this corridor, in addition to it being the best route, it is one of the most beautiful routes, and that is one of the reasons that bicyclists use it. We are also acutely aware of the ecological sensitivity. I personally have spent time working in the creek there with MMWD and Greg Andrew on fishery work down there. The Marin County Bicycle Coalition is pleased with the proposed alternative at this point, we think it strikes a good balance between safety and ecological protection with the minimizing of any tree cutting along that beautiful corridor. One concern that we feel we just want to continue to reiterate is the interface between the pull-out treatments and the roadway

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treatments, that there is not any kind of potential for lifting, recognizing that, of course, you cannot control what the tree roots do, but to really ensure that there is not a lip that emerges there over time, and so to think about that during the construction of the roadway there. And the Marin County Bicycle Coalition will be submitting more detailed comments on this, but I just wanted to again thank DPW and the Board of Supervisors for this report.

Supervisor Arnold - Thank you. Next. Welcome, Roger.

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Mr. Roberts - Good afternoon, Supervisors. Roger Roberts, Marin Conservation League. Three observations to share with you, and our consultants with LSA. One is traffic considerations. They use the 960 number from the Countywide Plan as the daily peak load capacity, Level E from Butterfield Road to Route 1 on the west coast of Marin County. That was not a study that did specific traffic counts for this segment of the road. And so there has been no traffic counts done at that time, or in this study, relative to the 5.2 miles of rehabilitation that is being proposed, and so we think that there should be some additional traffic analysis, particularly since improvements are likely to increase traffic and, in addition, the

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original studies do not talk about future traffic, but just existing traffic, we do not know anything about what the traffic loads are going to be in the future, and what can be expected. Secondly, root damage, there is a lot of mitigation measures being proposed on page 29 to reduce root damage, and we all know that Redwood trees do not have deep tap roots, they have spreading roots, and those need to be protected, and it is not clear to us from this report how the pull-out areas will be adequately protected for the tree roots that are located in those areas, and so we think some more analysis is necessary for the pull-out areas. Lastly, rubberized asphalt concrete is going to be used; the biological assessment in the Appendices says there will be pollutant runoff as this degrades and that this should be remedied with swales, but when you look at the report in terms of how the swales are going to be designed, there is very little detail about how that is going to achieve what I think is necessary, which is zero tolerance for any pollutant run-off. We do not know what the composition of the swale soils must be, we do not know what the percentage of swale is required to handle this. There are not going to be any sumps, apparently, which is what we require routinely in the county in parking lots to collect pollutant runoff,

4 con.

and so I think there is an opportunity here in the Final EIR to expand the treatment of how the swales will actually accomplish zero pollutant runoff. Thank you.

Supervisor Arnold - Thank you. Welcome.

Mr. Simac - Hi, I am Steven Simac. I would like to speak to the goal of improving bicycle and pedestrian safety. I was formerly on Florida State Bicycle and Pedestrian Safety Council, I have lived in Marin for 25 years. This is a bike route sign I designed in 1981. I would like to speak to the concept that shoulders improve bicycle safety, there is no really evidence for that, in fact, the last cyclist killed on Sir Francis Drake was riding in the shoulder in a high speed area, they have been called a "refuge" today, it is not really an accurate statement. There is a conflict between pedestrian use of shoulders since they could be walking against traffic, cyclists who might expect drivers to ride on the shoulder by motorists who do not know that they are a legal vehicle and should share the road legally, bicyclists are safest using the roadway. Shoulders often accumulate gravel, glass, they erode along the edges, and obviously there is going to be interference with pedestrians if they are walking the opposite way. The improved sightlines and the wider

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6 con.

pavement will increase traffic speeds. Traffic speeds do not - you know, motorists do not follow the traffic speed limits, we know that, locals are probably the worst offenders. Has there been a speed survey done? And that will show, obviously, that they do not obey the speed limits. The improvements will improve it for motor vehicle traffic. I think higher speeds will erode the feel for cyclists and pedestrians. It is quite a bit more hazardous to be passed at 50 miles per hour than at 25 miles per hour.

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I think many parts of this plan for the shoulders being appropriate for cyclists are misinformed. I know the California Code does call for a bike - a three-foot shoulder to be considered a bike path, but there is no evidence that it improves safety. Thank you for that.

Supervisor Arnold - Thank you.

Mr. Stevens - Could I have the spelling of your last name, please?

Mr. Simac: S-i-m-a-c.

Mr. Stevens - Thank you.

MR. Simac: And I will e-mail my written comments.

Supervisor Arnold: Next.

Ms. Ferguson - My name is Leslie Ferguson and I am a staff engineer with the Regional Water Quality Control

Board. Thank you for the opportunity to comment, and also thank you to DPW for the two very educational tours. We will be submitting detailed comments by June 25th, and we have also previously submitted detailed comments on the NOP.

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One of the things I would like to say is that I think everyone is aware of the critical role that Lagunitas Creek plays in the recovery of the endangered Coho, Steelhead habitat, many endangered species. Also, the creek is listed as impaired, unfortunately, under the Clean Water Act for sediment, nutrients, and bacteria, therefore, it is critical that any new project either singly or cumulatively have no

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net increase in degradation. Unfortunately, our overall review of this project, of this document, indicates that there are potentially significant impacts that have not been identified, and there are potentially significant impacts that have been identified, but not adequately evaluated or mitigated. Due to the time constraint today, I am going to be very brief, but we will submit detailed written comments.

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In general, we do not concur with the statement that this project will improve water quality in Lagunitas Creek, in fact, it may, we do not think the documentation, however, provides the data to support that finding. A few comments

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on our specific concerns. Tree removal, we are very

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concerned about the full impacts of removing trees from the riparian zone, and that they have not been fully considered or mitigated. We completely understand the need for the retaining wall at the landslide area, and we have actually worked with DPW on that, and we support this. We understand the need for the removal of those trees. We do not think, however, that they have been adequately analyzed, the impacts have not been adequately analyzed, and the mitigation as proposed is not sufficient, from our point of view. Option A impacts that include the removal of the Redwood trees, some very large diameter Redwood trees, we do not think are adequately evaluated. The functions of the riparian zone do not just include shade, water, temperature, and large woody debris, there is also bank stability when the creek meanders for short and long term, food impacts, air temperature control, pollutant filtration, soil permeability and groundwater infiltration, to name just a few, and these are not evaluated. The integrity of the riparian zone depends on both lateral and longitudinal conductivity. And the document discusses watershed scale analysis, but this is not the only relevant scale analysis, the actual scale of analysis at the locations of the tree is necessary. The cumulative impacts are not adequate. There

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is quite a large list of unstable trees identified in the horticulturalist appendix, and those trees, the possible removal of those trees in the future is not discussed. I am not going to talk about the large woody debris mitigation, but we do not think it is adequate, and we will give you detail on that. Another basic is road realignment, we are very concerned about the road being moved closer to the creek in the areas where the creek banks are already unstable. In my discussions in the field, I was informed that, in general, the road will not be realigned much closer than a foot, which is generally just fine. It is in these very specific areas, however, where we do not believe the road should be moved any closer to the creek, and the document is not specific enough for us to evaluate where that will be occurring, and what mitigation measures, if any - is it time? Okay, in summary, we have a lot of concerns about construction, the bio swales, we do not think they are adequately designed, paving of pull-outs, chemical leaching, culvert resizing, and as currently proposed, we do not think we could permit this project. Thank you.

Supervisor Arnold - And you have all those comments in a written statement that -

Ms. Ferguson - Not at this point yet, but we will, and these comments have been reviewed and approved by our Executive Officer, the comments I just made.

Supervisor Arnold - Thank you very much, great. Thank you.

Ms. Ferguson - Thank you.

Ms. Berensmeier - My name is Jean Berensmeier. I am Chair of the San Geronimo Valley Planning Group and first I would like to mention that I was fortunate enough to be invited on the initial bus tour as a community representative that attended other tours and all of the meetings. I lived next to Taylor Park for almost 50 years, and I love it, and I have to remind everyone, it is the home of stately Redwoods, endangered Coho Salmon, and threatened Steelhead Trout in Lagunitas Creek, and that is my premise. This unique forest was preserved through the efforts of MCL and I was honored by them last year with a tour during their 75th anniversary. It takes 10 minutes to drive this five-mile stretch at 30 miles per hour. I want to preserve it, enjoy it, and keep in mind that it only takes that amount of time. Unfortunately, road construction standards and culvert placement during the 1900s did not take into consideration these environmental impacts, as we are all

seeing. And today we are trying to resolve man-made problems with man-made solutions, as well as address recreational access by cars and bicyclists. Our committee is beginning to review the draft and we have four points that I would just like to mention here. On drainage and slope, while we want to preserve all the Redwoods, we might consider an exception where the drainage and slope issue is causing sediment and other damage to the creek, making it worse than a removal of a redwood. A hard choice, but possibly the best balancing act. Secondly, pavement rehab, construction materials must not pollute or create root damage on the short or long term. We are also concerned about the impact of this project on habitats and Salmonids between the edge of the project and the creek. Third of the four is lane width. One of our committee members is retired from the San Francisco Recreation Department and noted the similar safety issues in Golden Gate Park were resolved by narrowing the roads, not widening them. Road cyclists - I was one - I taught cycling, and I know and admire road cyclists, they are highly skilled, and they are fast moving, and they want to get to where they want to go, and there are vehicles, but I think, and our community is beginning to believe, that they will share the roads with cars more

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safely with narrower roads, reduced speed zones, and enhanced speeding penalties that are enforced. Finally, on shoulder width, in one scenario, there is the prospect of removing a Redwood to gain one foot of shoulder width of marginal benefit when you look at it all, that is not acceptable. Also, there can be no consistent shoulder width without removing Redwoods or impacting riparian habitat or the creek; consequently, road bikers, they will not use the shoulder as a bike bath, weaving in and out, because it is dangerous, there are vehicles and they share the road, they know how to do that. I believe that is it under my three minutes.

Supervisor Arnold - That is it.

Ms. Berensmeier - Susan, it is good to see that you are still with us.

Supervisor Arnold - Okay, anyone else? Yes, Frank.

Mr. Egger - Good afternoon, Supervisors. Frank Egger, representing the North Coast Rivers Alliance based in Fairfax. I first recreated in the park area in 1944, I fished the streams there in 1946. I guess I should not be admitting how old I am, but I have been in and around the county for a while. I voted for Measure A and I cannot

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remember being told that this project was going to be part of Measure A. You know, when you talk about Drake, you think of Drake through the Ross Valley, out to the 101 Corridor, and then over to 580, this project was not identified in Measure A that I ever saw. In reading the draft, it says that it is determined that the project would not have a significant effect on resources, it says this is a resurfacing roadway project. Removal of nine large Redwood trees, actually, 17 trees would be removed, if you include them all. Recently, when I have reviewed EIRs such as the Redwood Sanitary Landfill, Caltrans' Marin-Sonoma Narrows, the Marin Municipal Water District's Desalination Plan, and the California Department of Food and Ag's Light Brown Apple Moth EIR, I have found they all recommend the project proposed with mitigation measures. I never find an EIR that says, "This project will have such an adverse impact on the environment, it should not go forward." They all go forward. This one goes forward. I find the Draft EIR inadequate in respect to its traffic inducing impacts on the Ross Valley, including Fairfax. The 17 trees to be removed were not marked with red ribbons or yellow ribbons, at least the last time I traveled through there, maybe you have got them marked now, but I had not seen any markings on

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those trees, and they should be marked before you act on the Final EIR so the public understands the true impacts. The tradeoff of nine large Redwood trees for 2,000 feet of paving just does not seem to make sense, especially in this

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day and age of reduced oil resources for fuel. The draft does not address the impact of the project on the feel, the ambiance, of Samuel P. Taylor Park, one of the oldest State parks in Marin. The project will change the park

dramatically. It currently has a narrow two-lane road appropriate for travel through a loved travelway that adds to the park experience. Now, if you want to rush out to West Marin, go through Nicasio and Petaluma - Point Reyes Road, but the meandering experience is all part of what we have come to expect here in Marin County. Speeds will increase substantially, degrading the park experience for

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visitors and over-night campers. The widened roadway will attract additional vehicle trips.

Supervisor Arnold - Your time is up, Frank.

Mr. Egger - Okay, let me try to wrap up quickly.

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I could not find with the draft to address the possibility of rerouting large truck traffic through West Marin, through Nicasio to the Petaluma - Point Reyes Road, the Draft EIR is

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insufficient in addressing the true impacts on listed

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species, including Coho, Steelhead, and Red Legged Frog.

The Draft is insufficient in how it addresses greenhouse emissions, it does not sufficiently address cumulative impacts. I could not find a survey that shows and identifies ownership of the roadway - are we on State land or are we on County land? Who actually owns it? The draft is full of platitudes, sugar coating adverse impacts, but it does not meet the requirements of the California Environmental Quality Act. If this is a repaving project, then it should be just that, a repaving project. Thank you very much.

Supervisor Arnold - Anyone else?

Ms. Bouley - Good afternoon. My name is Paola Bouley and I am with SPAWN, Salmon Protection and Watershed Network, and I just want to thank the speakers that went before, we are in agreement with the Regional Water Quality Control Board, Marin Conservation League, and I want to thank the gentleman that pointed out that, if this is an issue about safety, it is not about Redwoods that gain us one foot of pavement, but it is about speed, and it is about education on the road, and it is about possibly a lack of enforcement, and those are the real safety issues, not the trees. SPAWN will be submitting detailed written comments,

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but I want to briefly state a few things. One is, our position is that this is a pretty aggressive proposal for a very sensitive area of statewide significance, and we do not feel that the EIR does a good enough job of addressing the cumulative impacts and the significance of some of these impacts. In fact, in some cases, it really does seem a little bit like hand waving and I want to use two examples

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to illustrate that; one is Option A, the removal of these nine trees, some of which are really old giant beautiful trees, now, the report says that there is no significant impact of removing these trees, well, real world example, Mr. Kinsey and the San Geronimo Valley, we saw this. One tree is removed in the forest, one giant tree, and it destabilizes the whole surrounding forest, and the next thing we know, the forest is recommending that the rest of the trees are unstable and they are removed with safety considerations. And so I do not think the cumulative larger impact of removing these giant trees has really been assessed, and I think that is what -- Option A is going to take us down that road. So we really actually recommend that Option A be removed from the table, it just really is not acceptable. The other issue is toxicity, so this was briefly mentioned in the EIR, the issue of heavy metal

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toxicity originating, for example, copper that comes off of brake pads, which originate from cars on the road, on average we have 5,000 trips of cars on that road back and forth, that is already a significant impact. But now this rubberized asphalt compound, which apparently leaches copper and other heavy metals into the water column, but apparently those leachates meet water quality standards. Now, the cutting edge science up and down the West Coast is indicating that, even when these heavy metals meet water quality standards, they are having both lethal and sub-lethal impacts on Salmon. That is the cutting edge science right now, that copper originating from these road surfaces from brake pads are killing salmon, and I do not see any mention of that in the report. We will be submitting a summary of the literature, the scientific literature, and what is going on up and down the West Coast, but I think those two examples just indicate how this EIR really is not up to speed for this project in such a sensitive area.

Thank you.

Supervisor Arnold - Thank you. Did you have a question?

Mr. Stevens - I just wanted a spelling of the last speaker's name, please?

Ms. Bouley - Oh, actually, I have one more question, if I may. It has not been identified where the funding for this project is coming from and I am wondering if -

Mr. Roberto - It was identified, actually, earlier by the speaker, it is currently being proposed to be fully funded by Measure A, which is our local sales tax.

Ms. Bouley - Okay, thank you.

Supervisor Arnold - Can you spell your name for -

Ms. Bouley - Oh, B-o-u-l-e-y.

Mr. Stevens - Thank you.

Supervisor Arnold - All right, any other speakers? All right, I am going to close the public hearing and I am going to bring it back to the Board. Are there questions or comments? Supervisor Adams.

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Supervisor Adams - The question about the rubberized asphalt, are there other alternatives?

Mr. Roberto - I need to speak to that because we had the problem, when some work is done, and then changes are made, there were changes made to the project as information was developed in this EIR. The portions of the Biotics appendix were written prior to that change being made. Right now, as the project is being proposed to the

Board, analyzed in the EIR, the rubberized asphalt has been removed as the underlying layer, so the proposal is not to use rubberized asphalt. I think we are using -

Mr. Stevens - Standard hot mix asphalt.

Mr. Roberto - I was going to make that comment. I know there are many other issues, but that one, that is how - yes?

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Supervisor Adams - And what about the issue of the updated traffic counts?

Mr. Roberto - We did not do updated traffic counts out in this area for this project. I think the overall position is that the roadway is not a traffic generating entity, it is not a land use that generates new traffic trips. We did use traffic counts that were available, we used it in a very congested part of Marin where the counts are higher, at the location down near Fairfax on or near Butterfield Drive, but we did not do counts out in this area.

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Supervisor Adams - And I had one more thing, and then the bio swale development, is that going to be fleshed out a little bit more?

Mr. Roberto - If this Board would like, that question has come up and we will respond to that in writing, yes.

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Supervisor Adams - I think, for me, you know, the protection of the trees to the maximum amount available, and what gets discharged into the creek are going to be really important, and I look forward - are we going to be able to get a copy of the written comments that will be submitted?

Mr. Roberto - All of the written comments, yes, we will give them to the Board, as well.

Supervisor Adams - Thank you.

Supervisor Arnold - Any other questions or comments? Good, all right, so the motion is to just instruct the staff to prepare a Final EIR, including all of the written responses for this EIR.

Supervisor Kinsey - So moved.

Supervisor McGlashan - Second.

Supervisor Arnold - Okay, all those in favor?

(Ayes.)

Thank you very much, everyone.

(Adjourned at 2:35 p.m.)

COMMENTS PH
Public Hearing (June 15, 2010)

PH-1: Please see Response to Comment B6-3.

PH-2: As described in Section 4.8.1 of the Draft EIR (page 281- 282), traffic counts were taken at Shafter Bridge from Thursday, October 23, 2008 to Wednesday, October 29, 2008 and at Platform Bridge Road from Tuesday, November 4, 2008 to Monday, November 10, 2008. These counts provide a good representation of the Average Daily Traffic along this stretch of SFDB.

As described in Section 4.8.4 of the Draft EIR (pages 283-289), rehabilitation of the roadway would not generate additional permanent traffic on the roadway. Construction activities would generate additional vehicle trips on weekdays during the construction period. No construction work would be conducted on weekends when traffic volumes are greater. Construction activities are not expected to exceed nine months; therefore, an assessment of the project's potential affect on future traffic volumes is not warranted. Added trips during construction would be nominal and would only occur for the nine months of construction activity. Therefore, the impact is considered less than significant.

PH-3: The Draft EIR (pages 209-210) identifies mitigation measures (Mitigation Measures BIO-10a through BIO-10i) to address potential tree root impacts resulting from the proposed project. These mitigation measures would apply to all aspects of the proposed project that could result in tree root impacts, including the proposed pullouts. No change to the Draft EIR is required.

PH-4: The request for additional information on proposed bioswales is acknowledged. Please see Master Response 11, which includes additional information on proposed bioswales.

PH-5: The commenter asserts that shoulders do not improve bicycle safety. This comment is an opinion and relates to the merits of the proposed project and not to the adequacy of the Draft EIR; therefore, no further response is necessary. Please see Master Response 1.

PH-6: The comment asserts that rehabilitation of the roadway would increase traffic speeds. Please see Response to Comment B4-29.

PH-7: Please see Response to Comment PH-5.

PH-8: Please see Response to Comment A5-5 and Response to Comment A5-6.

PH-9: Please see Response to Comment A5-4.

PH-10: Please see Master Response 11 related to water quality.

PH-11: The comment that tree removal impacts have not been fully considered or mitigated is acknowledged. Please see Master Response 6, regarding tree removal impacts.

PH-12: Please see Master Response 8.

PH-13: The comment that large woody debris (LWD) mitigation is not adequate is acknowledged. Please see Master Response 9 that provides additional information about mitigation for loss of LWD.

PH-14: The concern that the project would move the road closer to the creek resulting in unstable creek banks is noted. Please see Master Response 4.

PH-15: This comment provides a listing of various concerns about the Draft EIR and the project, including the design of bioswales, paving of pullouts, chemical leaching, and culvert re-sizing. The comment further states that the RWQCB would not likely permit the proposed project. The RWQCB submitted a comment letter on the Draft EIR that fully characterizes these comments. See comment letter A5 and the associated responses.

PH-16: The comment that trees may need to be removed in order to stabilize the slope is acknowledged. This comment does not raise questions or identify errors in the Draft EIR; therefore, no further response is necessary.

PH-17: The comment states that pavement rehabilitation must not pollute or create root damage. Please see Master Response 7 regarding tree roots and Master Response 11 regarding water quality.

PH-18: Concern about potential impacts to salmonids is acknowledged. Please see Master Response 9 that provides additional information on salmonids.

PH-19: The comment recommends narrower roads, reduced speed zones and enhanced speeding penalties along this portion of SFDB. This comment relates to the merits of the proposed project and not the adequacy of the Draft EIR; therefore, no further response is necessary. Please see Master Response 1.

PH-20: Comment noted. This comment relates to the merits of the proposed project and not the adequacy of the Draft EIR; therefore, no further response is necessary. Please see Master Response 1.

PH-21: The comment relates to Measure A and whether or not the proposed project was identified as part of Measure A. This comment does not raise questions or identify errors in the Draft EIR; therefore, no further response is necessary.

PH-22: The authors of the EIR and the County do not agree that the Draft EIR is inadequate with respect to the traffic inducing impacts on the Ross Valley, including Fairfax. As described in Section 4.8.4 of the Draft EIR (pages 283-289), the proposed project would rehabilitate the existing roadway; it would not provide additional capacity to accommodate increased traffic volumes. Construction activities would generate additional vehicle trips on weekdays during the construction period. No construction work would be conducted on weekends when traffic

volumes are greater. Added trips during construction would be nominal and would only occur for the nine months of construction activity. Therefore, impacts associated with construction traffic are considered less than significant.

- PH-23: The request to mark trees to be removed is noted. The trees that would be removed at Station 269+00 through Station 271+00 for slope repair and under Option A have been mapped and photographed to show the tree locations (See Draft EIR Figures 4.2-2 and Figure 4.2-3). The trees were marked during the preparation of the Draft EIR, but the marks were removed following completion of the Draft.
- PH-24: The authors of the EIR and the County do not agree with the commenter's conclusion that the proposed roadway rehabilitation would affect the "feel" of Samuel P. Taylor State Park. The proposed project would rehabilitate the existing roadway within the existing roadway right-of-way. The proposed project would not provide additional travel lanes or significantly change the meander of the roadway. SFDB would continue to be a two-lane road. The comment further asserts that the proposed project would increase speeds on this section of the roadway. The EIR authors and the County disagree. Please see Response to Comment B4-29.
- PH-25: The authors of the EIR do not agree that the proposed roadway rehabilitation would attract additional vehicle trips. SFDB would continue to be a two-lane road with posted speed limits between 15 and 40 mph. Roadway widening and pavement improvements are intended to improve the design life of the existing roadway and to accommodate existing use traffic volumes. The proposed project would not provide additional capacity for increased traffic volumes.
- PH-26: The purpose of the Draft EIR is to identify the adverse environmental impacts of the project as proposed, and recommend mitigation measures for identified impacts. The proposed project does not propose to re-route large truck traffic through West Marin; therefore, the Draft EIR need not address this issue.
- PH-27: The authors of the EIR and the County do not agree that the Draft EIR is insufficient in addressing the true impacts on listed species. The Draft EIR contains evidence throughout Section 4.3, *Biological Resources*, that the project area provides habitat for special status species that could be impacted by the proposed roadway rehabilitation. The Draft EIR (pages 180-213) addresses potential biological impacts during construction and operation of the proposed project and identifies mitigation measures to reduce potential impacts to a less than significant level.
- PH-28: This comment was not specific regarding how the discussion of greenhouse gas emissions in the Draft EIR is insufficient. The authors of the EIR and the County believe that the potential climate change impacts of the proposed project have been fully addressed in Section 4.12 of the Draft EIR (pages 328-340).
- PH-29: This comment was not specific regarding how the discussion of cumulative impacts in the Draft EIR is insufficient. The authors of the EIR and the County believe that the cumulative

impacts of the proposed project have been fully addressed in Section 6.4 of the Draft EIR (pages 352-358).

PH-30: Please see Response to Comment A2-1.

PH-31: The EIR authors do not agree that the Draft EIR is “full of platitudes, sugar coating adverse impacts.” Rather the Draft EIR across 350 pages of text, tables, and graphics, provides a detailed presentation of potential impacts and then specifically links each potential adverse impact to mitigation measures designed to reduce those impacts to a less than significant level. The Draft EIR is entirely consistent with CEQA and the *CEQA Guidelines*.

PH-32: The EIR authors do not agree that the Draft EIR does not “do a good enough job of addressing the cumulative impacts and the significance of some of these impacts.” The Draft EIR across 350 pages of text, tables, and graphics, provides a detailed presentation of potential impacts and then specifically links each potential adverse impact to mitigation measures designed to reduce those impacts to a less than significant level. The Draft EIR was prepared by a team of environmental professionals and technical experts who have made the conclusions of significance and developed mitigation measures based on technical expertise and factual evidence. No additional response is required.

PH-33: Please see Master Response 6 and Master Response 8. The request to remove Option A is acknowledged. This comment relates to the merits of the proposed project and not the adequacy of the Draft EIR. No further response is necessary.

PH-34: Please see Master Response 2 and Master Response 11 for additional information on the toxicity of RAC and the potential water quality impacts of the proposed project.

PH-35: Supervisor Adams asked about RAC. As stated in Section 3.4.1 of the Draft EIR (pg. 72), pavement rehabilitation would be achieved by creating a stable base course over which two layers of asphalt would be applied. The first of these two layers would consist of RAC; the uppermost layer would consist of a permeable friction course. Please see Master Response 2 for clarification about the use of RAC.

PH-36: Supervisor Adams asked about updated traffic counts. As described in Section 4.8.1 of the Draft EIR (page 281- 282), traffic counts were taken at Shafter Bridge from Thursday, October 23, 2008 to Wednesday, October 29, 2008 and at Platform Bridge Road from Tuesday, November 4, 2008 to Monday, November 10, 2008. These counts were taken for the proposed project along the section of SFDB that would be affected by the proposed project. No new traffic counts would be required.

PH-37: Supervisor Adams asked about bioswale development. Please see Master Response 11, which provides additional information and clarification about proposed bioswales.

PH-38: Supervisor Adams’ comment that protection of trees and water quality are key issues is acknowledged. The Draft EIR addresses both the tree removal (pp. 205-207) and water quality impacts (265-269) of the proposed project and provides mitigation measures to reduce

potential impacts to less than significant levels. This Response to Comments document provides further clarification regarding these issues and includes a response to each specific comment submitted during the public comment period. These responses should clarify for the reader that the Draft EIR represents an objective and comprehensive analysis of the potential environmental impacts of the proposed project.

CHAPTER 5.0

DRAFT EIR TEXT REVISIONS

Chapter 5.0 presents specific changes to the text of the Draft EIR that are being made to clarify any errors, omissions, or misinterpretation of materials in the Draft EIR in response to comments received during the public review period. In no case do these revisions result in a greater number of impacts or impacts of a greater severity than those set forth in the Draft EIR. Where revisions to the main text are called for, the page and paragraph are set forth, followed by the appropriate revision. Added text is indicated by underlined text. Text deleted from the Draft EIR is shown in ~~strikeout~~. Page numbers correspond to the page numbers in the Final EIR.

Page 20 of the Final EIR has been revised as follows:

- No substances toxic to aquatic life shall be discharged into ~~Lagunitas~~ Lagunitas Creek or its tributaries

Page 60, paragraph one of the Final EIR has been revised as follows:

The project site is located in west central Marin County, approximately 2.84 miles southeast of Point Reyes Station, and 0.58 miles west of Lagunitas, California, respectively. The City of San Rafael is located approximately 9.82 miles west of the project site (see Figures 3.1-1 and 3.3-1). The project site comprises a section of the SFDB roadway located in an unincorporated area of Marin County between Shafter Bridge and SFDB's intersection with Platform Bridge Road. For reference to specific project site features, a station line, as shown in Figure 3.3-2, is provided along the roadway. Each station indicates an interval of 100 feet beginning with Station 5+~~680~~ at Platform Bridge Road and ending with Station 279~~3~~+50 at Shafter Bridge.

Page 78, Table 3.4.B of the Final EIR is hereby revised as follows:

Table 3.4.B: Proposed Roadway Dimensions

Station Range	Overall Width (ft)	Lane Width (ft)	Shoulder Width (ft)
5+80 to 15+50	30	11	4
15+50 to 19+00	28	11	3
19+00 to 35+00	26	11	2
35+00 to 43+00	28	11	3
43+00 to 60+00	30	11	4
60+00 to 73+00	26	11	2
73+00 to 77+50	28	11	3
77+50 to 112+00	26	11	2
112+00 to 116 5 +00	30	11	4

1165+00 to 137+00	28	11	3
137+00 to 140+00	24	11	1
140+00 to 142+50	28	11	3
142+50 to 150+00	26	11	2
150+00 to 160+00	28	11	3
160+00 to 168+50	26	11	2
168+50 to 171+75	24	11	1
171+75 to 173+00	22	11	-
173+00 to 186+00	24	11	1
186+00 to 204+50	20	10	-
204+50 to 207+50	24	11	1
207+50 to 214+50	22	11	-
214+50 to 217+50	24	11	1
217+50 to 221+00	22	11	-
221+00 to 227+00	24	11	1
227+00 to 234+00	26	11	2
234+00 to 251+00	24	11	1
251+00 to 261+50	26	11	2
261+50 to 273+50	22	11	-

Page 91, Table 3.4.C of the Final EIR is hereby revised as follows:

Table 3.4.C: Proposed Option A Dimensions

Station Range	Overall Width (ft)	Lane Width (ft)	Shoulder Width (ft)
5+80 to 15+50	30	11	4
15+50 to 4819+00	28	11	3
4819+00 to 35+00	26	11	2
35+00 to 43+00	28	11	3
43+00 to 60+00	30	11	4
60+00 to 73+00	26	11	2
73+00 to 77+50	28	11	3
77+50 to 112+00	26	11	2
112+00 to 115+00	30	11	4
115+00 to 137+00	28	11	3
137+00 to 140+00	24	11	1
140+00 to 142+50	28	11	3
142+50 to 150+00	26	11	2
150+00 to 160+00	28	11	3
160+00 to 1668+50	26	11	2
1668+50 to 171+75	24	11	1
171+75 to 173+00	22	11	-
173+00 to 188+00	24	11	1
188+00 to 193+00	22	11	-
193+00 to 207+50	24	11	1
207+50 to 212+00	22	11	-
212+00 to 217+50	24	11	1
217+50 to 221+00	22	11	-
221+00 to 227+00	24	11	1
227+00 to 234+00	26	11	2
234+00 to 251+00	24	11	1
251+00 to 261+50	26	11	2

261+50 to 273+50	22	11	-
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Page 213 of the Final EIR, Mitigation Measure BIO-11b is hereby revised as follows:

Mitigation Measure BIO-11b: Marin DPW shall compensate for the loss of 0.24 acres of seasonal wetlands associated with the filling of roadside swales by establishing new seasonal wetlands at a 2:1 on-site replacement ratio within the Lagunitas Creek watershed in the vicinity of the SFDB project. One possible mechanism for accomplishing this may be for the DPW to fund the establishment of at least 0.48 acres of new floodplain wetland habitat along Lagunitas Creek in association with the MMWD *Lagunitas Creek Salmon Winter Habitat Enhancement Program*. This program seeks to address a possible limiting factor to the survival of juvenile coho salmon - a lack of suitable winter habitat along the creek, by establishing new side channels and backwater wetlands on selected reaches of the floodplain. The following is a brief summary of the proposed mitigation plan:

- **Mitigation Location.** Tocoloma Reach of Lagunitas Creek, just west of Platform Bridge Road, approximately 1,100 feet north of SFDB.
- **Mitigation Site.** An approximately 1.2-acre abandoned floodplain area adjacent to Lagunitas Creek. The site is characterized by disturbed grassland and ruderal (weedy) vegetation formerly used for cattle grazing, and contains abandoned grazing infrastructure (e.g., corrals, feeding troughs) as well as small areas of fill that would need to be removed. The site is generally flat with elevations ranging from approximately 62 – 63 feet NGVD. Soils are mapped as stratified depositions of sand, gravel, cobbles and stones with ephemeral depositions of silt and sandy loam, as is typical of floodplains along the creek (“Fluents, channelized” under Soil Conservation Service Soil Survey maps).

The proposed mitigation site was selected by MMWD for the following reasons: (1) the site has floodplain topography and substrate conditions suitable for backwater channel creation; (2) the site is currently disturbed and does not support woody riparian habitat or wetlands; and (3) the site is publicly-owned (by the NPS) and is easily accessible to construction equipment due to its proximity to Platform Bridge Road.

- **Mitigation Approach.** The proposed plan is intended to be one element of the overall Winter Habitat Enhancement Program, which would include various winter habitat enhancement efforts along Lagunitas Creek from the Shafter Bridge downstream to Olema Creek. The overall goal of the plan is to establish an approximately 1,200-linear foot, 30-foot wide backwater channel that would establish approximately 0.8 acres of suitable over-wintering habitat for coho salmon juveniles and smolts. The channel would have upstream and downstream connections to Lagunitas Creek and would have a bottom elevation that intercepts baseflows during the winter and early spring based on historical flow records in Lagunitas Creek. Channel cross sections would be modeled after existing backwater channel habitat in Lagunitas Creek and in similar coastal streams elsewhere, and would include gentle sideslopes suitable for the establishment of emergent marsh, seasonal wetland and woody riparian vegetation encompassing at least 0.5 acres. A key design element would be to ensure that salmonids are able to swim into and out of the

backwater habitat and not become stranded during lower flows. The backwater habitat enhancement design would also include refuge and cover habitat features for salmonids (e.g., woody debris structures and undercut bank sections).

- **Funding Status.** The project has received funding only for detailed topographic surveys, site assessment work and construction plan preparation. The project does not have funding for regulatory approval, construction or follow-up monitoring and management. As mitigation for the SFDB project, the DPW proposes to provide the required funding and/or in-kind services for regulatory approval, construction and follow-up monitoring and management to allow the project to be implemented.
- **Schedule.** The MMWD would be selecting an engineering contractor to conduct hydrologic modeling analysis and to prepare the construction plans, as well as to conduct the related, site specific topographic survey and site assessments. Construction plans are scheduled to be completed by July 2011. The PWD would prepare and submit the Mitigation and Monitoring Plan in accordance with Corps of Engineers, Regional Water Quality Control Board and California Department of Fish and Game requirements as part of the wetland/streambed alteration permit applications for the SFDB Rehabilitation project. Implementation of the plan would occur prior to or simultaneous with the commencement of construction work for the SFDB Rehabilitation project.

Project construction, including filling of roadside swales shall not start until a suitable wetland mitigation site has been selected and a Wetland Mitigation and Monitoring Plan for the site has been prepared by Marin DPW and approved by the Corps, RWQCB and CDFG. Mitigation construction work under the plan shall be completed in accordance with a timetable agreed to by these three agencies.

Page 219-220, paragraph four of the Final EIR is hereby revised as follows:

By the early years of the 20th century, the industrial activity in the area along Lagunitas Creek was all but over. The notable Bay Area poet, Kenneth Rexroth, often spent time in an isolated cabin during the 1930s and 1940s in an area that was incorporated into Samuel P. Taylor State Park in 1946. Portions of the park, in fact, have significant historical associations such that they are eligible for listing in the California Register of Historical Resources. The route of the former pack trails that brought the first non-native settlers to the region is now followed by SFDB. Construction for the paved roadway began in 1926, and grading was finished the following year. The roadway was allowed to “settle” for two years before the concrete was poured. SFDB was officially opened and dedicated near the end of 1929, and has remained mostly unchanged and unimproved since that time.

Page 272, Mitigation Measure HYD-1b of the Final EIR is hereby revised as follows:

Mitigation Measure HYD-1b: As part of project implementation, the County shall implement the following ~~three~~ five water quality improvement measures:

1. The County shall install a permeable layer, as the top surface layer above impervious rubberized asphalt concrete on all paved road sections. Runoff exiting the permeable friction course shall be designed to sheetflow on the underlying impervious asphalt concrete and discharge into the nearest storm drain inlet, culvert, or directly over the outboard edge of the road.
2. Pullout areas shall be designed with permeable asphalt to allow stormwater to percolate through the asphalt and be collected in an under drain that would be routed to discharge at the nearest existing roadway culvert.
3. In locations where the road slopes toward Lagunitas Creek and there is adequate space, a vegetative buffer strip shall be established adjacent to the road. The buffer strip vegetation shall be indigenous to Marin County and shall also be suitable for erosion control. The buffer shall be protected from vehicle traffic and illicit parking by placement of a barrier (e.g., guardrail, boulders) between the road and the buffer.
4. In locations where the road slopes toward the hillside and away from Lagunitas Creek, a vegetated swale with permeable backfill underneath that would function like a sand filter shall be installed, where feasible. A perforated pipe shall be installed within the permeable backfill to direct infiltrating runoff to the nearest culvert; the underdrain shall reduce the ponding of water that inundates the road during significant storm events. The bioswale vegetation shall be indigenous to Marin County and shall also be suitable for erosion control. Swales/sand filters shall not be installed in locations of freshwater emergent wetlands (to preserve the wetlands).
5. The need for the water quality improvement measures to be designed for flow duration control shall be evaluated in the project design phase. Pre- and post-project flow duration curves shall be generated using a hydrologic model that analyzes a long-term time series of precipitation data to generate the cumulative frequency of in-stream flows of a certain magnitude for the full distribution of flows up to the pre-project 10-year peak flow rate. Flow duration control shall be implemented if pre- and post-project flow duration curves deviate by more than 10% over the length of the flow duration curve; subsurface storage shall be provided within the water quality treatment measures, and the outlet shall be designed to discharge the increase in runoff volume resulting from the project at a rate that does not increase in-stream erosion.

Page 292-293, Mitigation Measure TR-1 of the Final EIR is hereby revised as follows:

Mitigation Measure TR-1: For the proposed project or Option A, prior to construction, the project contractor shall submit a Traffic Management Plan (TMP) to Marin County DPW for review and approval. During construction activities, the Marin County DPW and the project contractors working on the project shall adhere to all requirements of the TMP. Implementation of a TMP would reduce potential impacts to a level of less than significant. The TMP shall include the following:

- The route selection for movement of heavy equipment and truck traffic in the project vicinity shall be coordinated with the Marin County DPW, Marin County Sheriff's Department, and Police Department for applicable cities and unincorporated communities (Lagunitas, Forest Knolls, Woodacre, Olema, Point Reyes Station, Nicasio, San Anselmo, San Rafael, and Fairfax), State Parks, and Golden Gate National Recreation Area to minimize traffic and physical road

impacts. Truck drivers shall be notified of and required to use the most direct route between the project site and US 101.

- Heavy equipment transport, material transportation, or exportation to and from the project site shall not occur during weekday commute peak traffic periods and shall be coordinated by the contractor with the Marin County DPW, Marin County Sheriff's Department, and relevant city police departments.
- Construction activities shall be coordinated with State Parks, Golden Gate National Recreation, affected cities and communities, and affected property owners to minimize disruption to local traffic.
- Construction worker parking, material storage, and construction staging areas to the extent possible shall be specified and located within the boundaries of the project site in coordination with State Parks personnel.
- Warning signs indicating frequent truck entry and exit shall be posted at the main construction points. Flaggers shall monitor and control ingress and egress of large construction vehicles to and from the site as well as lane closures.
- Debris and mud on nearby streets caused by trucks shall be monitored daily, and a roadway cleaning program shall be instituted as necessary.
- Westbound construction truck trips shall be prohibited on weekdays between the hours of 7:00 a.m. and 9:00 a.m. Eastbound construction truck trips shall be prohibited on weekdays between the hours of 4:00 p.m. and 6:00 p.m.
- A public information program shall be developed and coordinated with local agencies affected by construction activities and/or road closures. The public information program should include measures to inform the public of planned construction activities using means such as print media, radio, and/or web-based messages and information.

Page 318, paragraph three of the Final EIR is hereby revised as follows:

Day use recreational users of the parks and bicyclists ~~could~~ would likely be affected by construction noise.

Page 319, Mitigation Measure NOI-1a, in the Final EIR, is hereby revised as follows:

Mitigation Measure NOI-1a: During all construction, the project contractors shall equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers consistent with manufacturers' standards. During construction, the County shall monitor noise levels to ensure they remain below 95 dBA measured 50 feet from the noise source.

CHAPTER 6.0 REPORT PREPARATION

6.1 FINAL EIR PREPARERS

LSA Associates, Inc.

Project Management, Draft EIR, and Final EIR Report Preparation.

157 Park Place
Point Richmond, CA 94810
Laura Lafler, Principal, Project Manager
George Molnar, Principal, Biological Resources Manager
Andrew Pulcheon, Associate, Cultural Resources Manager
Shanna Guiler, AICP, Senior Planner

Baseline Environmental Consulting

Geology, Soils, and Seismicity; Hydrology and Water Quality; Hazards and Hazardous Materials

5900 Hollis Street, Suite D
Emeryville, CA 94608
Donna Bodine, Senior Environmental Scientist
Ralph Russell, Environmental Specialist

BKF Engineers

Project Description

1646 N. California Boulevard, Suite 400
Walnut Creek, CA 94596
Robert Stevens, Vice President
Eric Miller, Design Engineer

II. MITIGATION MONITORING AND REPORTING PROGRAM

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MITIGATION MONITORING AND REPORTING PROGRAM

This Mitigation Monitoring and Reporting Program (MMRP) was formulated based on the findings of the Environmental Impact Report (EIR) prepared for the Sir Francis Drake Boulevard Rehabilitation Project. The purpose of the MMRP is to ensure the implementation of mitigation measures identified as part of the environmental review for the project.

The MMRP (Table 1) lists mitigation measures recommended in the EIR and identifies mitigation monitoring requirements. Each mitigation measure is numbered according to the topical section to which it pertains in the EIR. As an example, Mitigation Measure AES-1 is the first mitigation measure identified in Chapter 4.2, Aesthetics, of the EIR. The column entitled "Mitigation Responsibility" identifies the party responsible for carrying out the required actions. The columns entitled "Monitoring/Reporting Agency" and "Monitoring Schedule" identify the party ultimately responsible for ensuring that the mitigation measure is implemented and the approximate timeframe for the oversight agency to ensure implementation of the mitigation measure. The column entitled "Verification of Compliance" will be used by the County of Marin to document the person who verified the implementation of the mitigation measure and the date on which this verification occurred.

The County of Marin must adopt a MMRP or an equally effective program, if it approves the proposed project with the mitigation measures included in the EIR. Public Resources Code, Section 21081.6(a) requires an agency to adopt a program for reporting or monitoring mitigation measures that were adopted or made conditions of project approval.

Table 1: Mitigation Monitoring and Reporting Program

Impacts	Mitigation Measures	Implemented By	When Implemented	Monitored By	Verified By and Date
4.1 LAND USE					
<i>There are no significant Land Use impacts.</i>					
4.2 AESTHETICS					
AES-1: Option A could increase the amount of light and glare visible to pedestrians, bicyclists and equestrians using the trail systems in the vicinity of the project area.	AES-1: The County shall identify those trees proposed for removal in Option A that currently shield campgrounds or trails from the light and glare of vehicles passing on SFDB. Prior to construction, the County shall include in its construction plans or designs, plantings, or other methods to reduce the potential impacts of vehicle glare and light impacts that would result from removal of these trees.	Marin County DPW	Approval of construction documents	Marin County DPW	Verified by: Date:
4.3 BIOLOGICAL RESOURCES					
BIO-1: Implementation of the proposed project could impact special-status plant species present within the project area.	<p>BIO-1: A qualified botanist shall conduct additional CDFG protocol-level surveys within and immediately adjacent to the zones that would be disturbed by construction work. The surveys shall be conducted in the year within which construction is to commence. To the extent allowed under the construction schedule, surveys shall be conducted during the flowering period of the special-status plants that have a high potential to occur within the project area (January through August). If any special-status plant species are observed within or adjacent to the disturbance zones, Marin DPW shall implement the following:</p> <ul style="list-style-type: none"> A qualified botanist shall delineate the locations of any special-status plant populations adjacent to the disturbance zones and shall supervise the installation of temporary protective construction fencing between the disturbance zones and the plant population. The fencing shall remain in place until construction is completed and all construction equipment has been removed from the vicinity. If any special-status plant population is identified within the construction disturbance zones, the Marin DPW shall consult with CDFG and CNPS to determine appropriate avoidance and/or 	Marin County DPW/Project Botanist	Prior to construction	Marin County DPW	Verified by: Date:

Table 1 *Continued*

Impacts	Mitigation Measures	Implemented By	When Implemented	Monitored By	Verified By and Date
	<p>mitigation measures for impacts to the population. If the special status plant is federally listed as Threatened or Endangered, the Marin DPW shall also consult with the USFWS. At a minimum, avoidance and mitigation measures shall entail the following:</p> <ol style="list-style-type: none"> Marin DPW shall adjust the boundaries of the disturbance zones, where feasible, to avoid impacts to the plant population. Where avoidance is not feasible, the Marin DPW shall implement one or more of the following measures, based on the prior consultation with CDFG and CNPS: 1) transplant affected plants to suitable habitat areas outside the disturbance zones; 2) collect and properly store seeds of affected plants; subsequently re-seed suitable habitat areas outside the disturbance zones; 3) prepare and implement a long-term management/enhancement plan for existing off-site populations of the affected plant species. 				
<p><u>BIO-2:</u> Implementation of the proposed project could impact special-status invertebrate species potentially present within the project area.</p>	<p><u>BIO-2a:</u> During the spring and summer period prior to the start of construction, a qualified botanist shall conduct pre-construction surveys of the project site for the host plants of the Marin elfin butterfly and Myrtle's silverspot butterfly. Identified plant populations shall be marked for avoidance by project activities. If a plant population cannot be feasibly avoided, individual plants will be relocated by a qualified botanist to a location adjacent to the project disturbance zone.</p>	Marin County DPW/Project Botanist	Prior to construction	Marin County DPW	<p><i>Verified by:</i></p> <p><i>Date:</i></p>
	<p><u>BIO-2b:</u> Implement re-vegetation and habitat restoration measures described in Mitigation Measures BIO-9a and BIO-9b.</p>	See the cited mitigation measure			<p><i>Verified by:</i></p> <p><i>Date:</i></p>
<p><u>BIO-3:</u> Implementation of the proposed project could impact bird species protected under the Federal and State Endangered Species Act.</p>	<p><u>BIO-3a:</u> Prior to initiation of construction activities (in April or May of the construction year) the Point Reyes Bird Observatory (PRBO) shall be contacted to obtain the results of any new spotted owl surveys that were conducted in the project vicinity. If such surveys</p>	Marin County DPW	Prior to construction	Marin County DPW	<p><i>Verified by:</i></p> <p><i>Date:</i></p>

Table 1 *Continued*

Impacts	Mitigation Measures	Implemented By	When Implemented	Monitored By	Verified By and Date
	indicate that spotted owls are nesting within 165 feet of the construction area, the USFWS and CDFG shall be consulted regarding additional avoidance and minimization measures.				
	<p>BIO-3b: If construction work is scheduled during the breeding season (March 1 through August 30), a qualified wildlife biologist shall conduct pre-construction surveys of all suitable nesting trees in the project disturbance zone and within 165 feet of the disturbance zone to determine if nesting birds of either species are present. (Preconstruction surveys will not be required for construction work carried out in the non-breeding season August 30 through February 28/29.) The pre-construction surveys shall be conducted within 15 days prior to the start of work from March 1 through May 31 (since there is higher potential for birds to initiate nesting during this period), and within 30 days prior to the start of work from June 1 through August 30. All suitable nesting trees within 165 feet of the construction disturbance zone will be surveyed.</p> <p>If active nests of either species are found in the work area, the USFWS and CDFG will be consulted as to appropriate avoidance and minimization measures prior to the initiation of work. At a minimum, the following avoidance and minimization measures shall be implemented:</p> <ol style="list-style-type: none"> In order to avoid and minimize impacts on nesting northern spotted owls during project implementation, a 165-foot buffer shall be established around active nesting sites. No project construction activities shall be allowed to occur within this zone until a qualified biologist has determined that all juveniles have fledged from occupied nests. Buffer zones shall be clearly delimited using construction fencing or other suitable barrier material to the extent feasible based on site 	Marin County DPW/Project Biologist	Prior to construction	Marin County DPW	<p><i>Verified by:</i></p> <p><i>Date:</i></p>

Table 1 *Continued*

Impacts	Mitigation Measures	Implemented By	When Implemented	Monitored By	Verified By and Date
	<p>conditions.</p> <p>c. Construction activity, site access by equipment and vehicles, and operations at the staging areas shall be limited to daytime hours. No nighttime work shall be allowed on the project. Activities shall begin no earlier than one-half hour after sunrise and shall end no later than one-half hour before sunset.</p> <p>d. Any required tree trimming of trees to be avoided shall be done according to arborist guidelines to minimize the effects to trees. Trimming of trees must not jeopardize the survival of trees.</p> <p>e. A report documenting the results of preconstruction surveys and nest protection and monitoring shall be provided to USFWS and CDFG within 4 weeks of completion of work in the vicinity of active nests.</p>				
BIO-4: Implementation of the proposed project could impact special-status bird species protected under the MBTA potentially nesting in and adjacent to the project area.	<p><u>BIO-4:</u> If construction work is scheduled during the breeding season (March 1 through August 30), a qualified wildlife biologist shall conduct pre-construction surveys within and adjacent to the project disturbance zone to determine if nesting birds are present. (Preconstruction surveys shall not be required for construction work carried out in the non-breeding season August 30 through February 28/29.) The pre-construction surveys shall be conducted within 15 days prior to the start of work from March 1 through May 31 (since there is higher potential for birds to initiate nesting during this period), and within 30 days prior to the start of work from June 1 through August 30.</p> <p>If active nests are found in the work area, the biologist shall determine an appropriately sized buffer around the nest in which no work shall be allowed until the young have successfully fledged. The size of the nest buffer shall be determined by the biologist in consultation with the CDFG, and shall be based on the</p>	Marin County DPW/Project Biologist	Prior to construction/ Throughout the construction period	Marin County DPW	<p><i>Verified by:</i></p> <p><i>Date:</i></p>

Table 1 *Continued*

Impacts	Mitigation Measures	Implemented By	When Implemented	Monitored By	Verified By and Date
	<p>nesting species, the context of the nest site in relation to existing human activity and its sensitivity to disturbance, and the expected types of disturbance. No project construction activities shall be allowed to occur within this zone until a qualified biologist has determined that all juveniles have fledged from occupied nests. At a minimum, the following buffer zones shall be implemented:</p> <ul style="list-style-type: none"> • <i>Yellow Warbler.</i> Yellow warblers typically nest and rear young from April through July. In order to avoid and minimize impacts on nesting yellow warblers during project implementation, a 25 to 50-foot buffer shall be established around active nesting sites when project activities shall occur during their breeding and nesting period. No project activities shall be allowed to occur within this zone. The buffer area can be removed prior to July if a qualified biologist determines that all juveniles have fledged from occupied nests. • <i>Osprey.</i> Osprey typically nest and rear young from March through September. In order to avoid and minimize impacts on nesting osprey during project implementation, a 200-foot buffer shall be established around active nesting sites when project activities shall occur during their breeding and nesting period. No project activities shall be allowed to occur within this zone. The buffer area can be removed prior to September if a qualified biologist determines that all juveniles have fledged from occupied nests. • <i>Other Raptor Species.</i> Other raptor species typically nests and rear young from early April through August. If these species are found to be nesting, impacts shall be avoided and minimized by establishing a 200-foot buffer around active nest sites. No project related activities should be allowed to occur within this buffer until young have fledged or the species are no longer 				

Table 1 *Continued*

Impacts	Mitigation Measures	Implemented By	When Implemented	Monitored By	Verified By and Date
	<p>attempting to nest. The buffer area can be removed prior to August if a qualified biologist determines that all juveniles have fledged from occupied nests.</p> <ul style="list-style-type: none"> <i>Other Migratory Birds.</i> Migratory bird species typically nest and rear young from February through August. In order to avoid and minimize impacts on migratory bird species, a 25 to 200-foot buffer shall be established around active nesting sites when construction activities shall occur during their active nesting period. No project-related activities shall occur within this zone. The buffer area can be removed prior to August if a qualified biologist determines that all juveniles have fledged from occupied nests. <p>A report documenting the results of preconstruction surveys and nest protection and monitoring shall be provided to CDFG within 4 weeks of completion of work in the vicinity of active nests.</p>				
BIO-5: Implementation of the proposed project could impact federal and/or state listed salmonid species - Central California Coastal coho salmon, Central California Coast steelhead, and California Coastal chinook salmon.	<p>BIO-5a: In accordance with Mitigation Measure HYD1a, a Storm Water Pollution Protection Plan (SWPPP), in accordance with the State Water Resources Control Board, National Pollution Discharge Elimination System (NPDES) Construction General Permit, shall be prepared and implemented.¹ The SWPPP shall include a wide range of Best Management Practices (BMPs) for controlling sediment and turbidity during construction. These BMP should include the following measures to avoid impacts to salmonids:</p> <ul style="list-style-type: none"> Work below the tops of the creek banks, including culvert replacement work in the tributaries and bank repair along Lagunitas Creek, shall be allowed only during the period from June 15 to October 15 during low flow conditions. Culvert replacement work in a 	Marin County DPW/ Construction Contractor	Prior to issuance of a grading permit/ Throughout the construction period	Marin County DPW	<p><i>Verified by:</i></p> <p><i>Date:</i></p>

¹ See Section 4.6.2 and Mitigation Measure HYD-1 under *Hydrology and Water Quality* for further details on SWPPP requirements as they relate to the proposed project.

Table 1 *Continued*

Impacts	Mitigation Measures	Implemented By	When Implemented	Monitored By	Verified By and Date
	<p>tributary shall occur only when there is no flow in the tributary or when in the opinion of the project biologist, the flow is too low to allow salmonid passage through the culvert. Low tributary flows will be temporarily captured and diverted downstream from the work zone.</p> <ul style="list-style-type: none"> No fill material, including asphalt or concrete, shall be allowed to enter the stream. Any concrete structures (such as culvert headwall construction) below the tops of banks shall be poured in tightly sealed forms and shall not be allowed contact with surface waters until the cement has fully cured. Poured concrete shall be excluded from the wetted channel for a period of 30 days after it is poured. During that time the poured concrete shall be kept moist, and runoff from the concrete shall not be allowed to enter the creek. Commercial sealants may be applied to the poured concrete surface where difficulty in excluding water flow for a long period may occur. If sealant is used, water shall be excluded from the site until the sealant is dry and fully cured according to the manufacturer's specifications. Water that contacts wet concrete and has a pH greater than 9.0 shall be pumped out and disposed of outside the creek channel. No substances toxic to aquatic life shall be discharged into Lagunitas Creek or its tributaries. There shall be no material deposition nor other channel disturbance below the ordinary high water line of Lagunitas Creek. There shall be no coffer dams or dewatering of Lagunitas Creek. Hydroseed mixes used to stabilize disturbed areas shall not contain fertilizers. 				

Table 1 *Continued*

Impacts	Mitigation Measures	Implemented By	When Implemented	Monitored By	Verified By and Date
	<ul style="list-style-type: none"> Equipment maintenance and fueling areas shall be located at least 100 feet away from the creek bank. Fueling must be behind a containment barrier that shall prevent any spilled or leaked fuel from running into the creek. All equipment servicing must occur within designated areas. All motorized equipment used during construction or demolition activities shall be checked for oil, fuel, and coolant leaks prior to initiating work. Any equipment found to be leaking fluids shall not be used in or around aquatic habitat features in order to minimize the chances of contaminating the habitat and potentially impacting sensitive species, particularly salmon and steelhead. The project's contractor shall prepare an emergency response and clean-up plan prior to beginning work at the site. The plan shall detail the methods to be used to contain and clean-up spills of petroleum products or other hazardous materials in the work area. All maintenance crew personnel shall receive environmental training about the sensitive nature of the special status species in the project vicinity. This training shall include descriptions of the special status species and all project measures in place to protect the species during construction. Crews shall also be informed to stop all work and notify their supervisor or the project biologist if special-status species are observed within the project site. 				
	BIO-5b: Post-construction (ongoing) road maintenance, including inspection and maintenance of roadside bioswales, shall be conducted in accordance with a long-term Storm Water Management Plan (SWMP) prepared prior to the start of construction in accordance with RWQCB and Marin County	Marin County DPW	For the life of the project	Marin County DPW	<i>Verified by:</i> <i>Date:</i>

Table 1 *Continued*

Impacts	Mitigation Measures	Implemented By	When Implemented	Monitored By	Verified By and Date
	Stormwater Pollution Prevention Program (MCSTOPPP) standards, and approved by the RWQCB and Marin County. The SWMP shall also incorporate county road maintenance BMPs contained in the Fish Net 4C BMPs Roads Manual. ²				
	BIO-5c: In order to avoid damage to existing riparian trees in the vicinity of the construction site, all native trees with trunks adjacent to excavation areas, equipment staging and material storage areas, as well as other areas with concentrated activity by construction equipment, shall be protected with temporary construction fencing. The fencing shall be placed at the edge of the construction zone as close as feasible to the edge of the tree driplines. No construction work, storage of equipment or materials or other disturbance shall be allowed within the protected areas. Additionally, redwood trees in the vicinity of the construction site shall be protected in accordance with Mitigation Measures BIO-10a through BIO-10i.	Marin County DPW/ Construction Contractor	Throughout the construction period	Marin County DPW	Verified by: Date:
	BIO-5d: Marin DPW shall make available suitable cuttings from the tree removal work for use as woody debris and in bio-engineered structures along Lagunitas Creek in order to enhance salmonid habitat. The Marin DPW shall notify the signatories to the February 7, 2007 <i>Memorandum of Understanding for Woody Debris Management in Riparian Areas of the Lagunitas Creek Watershed</i> (Marin Municipal Water District, Marin County Open Space District, California Department of Parks and Recreation, National Park Service, and the Marin County Resource Conservation District – see <i>Biological Assessment</i> – Appendix E) of the availability of the wood, and the signatories shall notify Marin DPW if they have use for the woody debris, and when they will collect the material. If the signatory agencies have not responded within 14 days Marin DPW shall dispose of the material in a legal manner.	Marin County DPW	During construction	Marin County DPW	Verified by: Date:

² See Section 4.6.2 under *Hydrology and Water Quality* for further details on the MCSTOPPP requirements for compliance with RWQCB NPDES General Permit.

Table 1 *Continued*

Impacts	Mitigation Measures	Implemented By	When Implemented	Monitored By	Verified By and Date
<u>BIO-6:</u> Implementation of the proposed project could impact other special-status fish species.	<u>BIO-6:</u> Implement measures to protect special-status salmonids described in Mitigation Measures BIO-5a through BIO-5d.	See cited mitigation measures			<i>Verified by:</i> <i>Date:</i>
<u>BIO-7:</u> Implementation of the proposed project could impact special-status amphibian and reptile species potentially present within the project area.	<p><u>BIO-7a:</u> Prior to work beginning in any habitats containing appropriate habitat for northwestern pond turtle, foothill yellow-legged frog, or California red-legged frog a qualified biologist shall conduct focused pre-construction surveys for these species. The Preconstruction surveys for California red-legged frog shall be completed within 48 hours prior to commencement of any earth-moving activity, construction, or vegetation removal, whichever comes first. The preconstruction survey shall include two nights of nocturnal surveys in areas of suitable habitat. The biologist performing the preconstruction survey must hold a federal 10(a)(1)(A) permit for California red-legged frog or be considered by USFWS to be a “service approved” biologist.</p> <p>If any of the above special-status amphibian and reptile species are encountered during the surveys, all work in the work area shall be placed on hold while the findings are reported to the CDFG and USFWS and it is determined what, if any, further actions must be followed to prevent possible take of this species.</p>	Marin County DPW/Project Biologist	Prior to construction	Marin County DPW	<i>Verified by:</i> <i>Date:</i>
	<p><u>BIO-7b:</u> Where construction would occur in habitat where California red-legged frogs, foothill yellow-legged frogs, and northwestern pond turtle are potentially present, work areas shall be fenced in a manner that prevents equipment and vehicles from straying from the designated work area into adjacent habitat areas. An authorized biologist shall assist in determining the boundaries of the area to be fenced in consultation with the USFWS, and CDFG. All workers shall be advised that equipment and vehicles must remain within the fenced work areas.</p> <p>The authorized biologist shall direct the installation of the fence and shall conduct biological surveys to move any individuals of these species from within the</p>	Construction Contractor/Project Biologist	Throughout the construction period	Marin County DPW	<i>Verified by:</i> <i>Date:</i>

Table 1 *Continued*

Impacts	Mitigation Measures	Implemented By	When Implemented	Monitored By	Verified By and Date
	fenced area to suitable habitat outside of the fence. Exclusion fencing shall be at least 24 inches in height. The type of fencing must be approved by the authorized biologist, the USFWS, and CDFG.				
	<u>BIO-7c</u> : If, at any time, individuals of these species are found within an area that has been fenced to exclude these species, activities shall cease until the authorized biologist moves the individuals.	Construction Contractor/ Project Biologist	Throughout the construction period	Marin County DPW/Project Biologist	<i>Verified by:</i> <i>Date:</i>
	<u>BIO-7d</u> : If any of these species are found in a construction area where fencing was deemed unnecessary, work shall cease until the authorized biologist moves the individuals. The authorized biologist in consultation with USFWS and CDFG shall then determine whether additional surveys or fencing are needed. Work may resume while this determination is being made, if deemed appropriate by the authorized biologist.	Construction Contractor/ Project Biologist	Throughout the construction period	Marin County DPW/Project Biologist	<i>Verified by:</i> <i>Date:</i>
	<u>BIO-7e</u> : Clearance surveys of the construction area shall occur on a daily basis in the work area. Any individuals of these species found during clearance surveys or otherwise removed from work areas shall be placed in nearby suitable, undisturbed habitat. The authorized biologist shall determine the best location for their release, based on the condition of the vegetation, soil, and other habitat features and the proximity to human activities. The authorized biologist shall have the authority to stop all activities until appropriate corrective measures have been completed.	Construction Contractor/ Project Biologist	Throughout the construction period	Marin County DPW/Project Biologist	<i>Verified by:</i> <i>Date:</i>
	<u>BIO-7f</u> : To ensure that diseases are not conveyed between work sites by the authorized biologist or his or her assistants, the fieldwork code of practice developed by the Declining Amphibian Populations Task Force ³ shall be followed at all times.	Project Biologist	Throughout the construction period	Marin County DPW	<i>Verified by:</i> <i>Date:</i>
	<u>BIO-7g</u> : Project activities shall be limited to daylight hours, except during an emergency, in order to avoid nighttime activities when California red-legged frogs may be present.	Construction Contractor	Throughout the construction period	Marin County DPW	<i>Verified by:</i> <i>Date:</i>

³ http://www.fws.gov/ventura/speciesinfo/protocols_guidelines/docs/DAFTA.pdf

Table 1 *Continued*

Impacts	Mitigation Measures	Implemented By	When Implemented	Monitored By	Verified By and Date
	BIO-7h: Within the work zone, traffic speed shall be maintained as required by the Manual for Uniform Traffic Control Devices – California edition. The speed limit in the work zone shall be no more than 15 MPH.	Construction Contractor	Throughout the construction period	Marin County DPW	Verified by: Date:
	BIO-7i: BMPs and erosion control methods, as outlined in the project's SWPPP, shall be implemented. These BMPs include re-vegetation of all bare soil prior to the rainy season to prevent an increase in sediment entering waterways. The project's SWPPP shall be subject to the review and approval of the USFWS and CDFG.	Construction Contractor	Throughout the construction period	Marin County DPW	Verified by: Date:
BIO-8: Implementation of the proposed project could impact special-status mammal species potentially present within the project area.	BIO-8a: All trees to be removed within the project area shall be surveyed for the presence of bat roosts by a qualified biologist. Surveys may entail direct inspection of the trees or nocturnal surveys. The survey shall occur no more than 2 weeks prior to the initiation of vegetation removal and ground disturbing activities. The survey shall be conducted prior to the commencement of the bat maternity season (approximately April 15-August 15). If no roosting habitat is present, then the tree must be removed within 1 week following the survey. If roosting habitat is present and occupied, then a qualified biologist shall determine the species of bats present and the type of roost (i.e., day roost, night roost, maternity roost). If it is determined that the bats are not a special-status species, and that the roost is not being used as a maternity roost, then the bats may be evicted from the roost using methods developed by a biologist experienced in developing and implementing bat mitigation and exclusion plans.	Marin County DPW/Project Biologist	Prior to construction	Marin County CDA	Verified by: Date:
	BIO-8b: If special-status bat species are found to be present or if the roost is determined to be a maternity roost for any species of bat, then a qualified biologist experienced in developing bat mitigation and exclusion plans shall develop a mitigation plan to compensate for the lost roost site.	Marin County DPW/Project Biologist	Prior to construction	Marin County CDA/Project Biologist	Verified by: Date:

Table 1 *Continued*

Impacts	Mitigation Measures	Implemented By	When Implemented	Monitored By	Verified By and Date
	Removal of the roost shall only occur when the mitigation plan has been approved by CDFG and only when bats are not present in the roost. The mitigation plan shall detail the methods of excluding bats from the roost and the plans for a replacement roost in the vicinity of the project site. One replacement roost shall be provided for each roost impacted. The mitigation plan shall be submitted to CDFG for approval prior to implementation. The plan shall include: (1) a description of the species targeted for mitigation; (2) a description of the existing roost or roost sites; (3) methods to be used to exclude the bats if necessary; (4) methods to be used to secure the existing roost site to prevent its reuse prior to removal; (5) the location for a replacement roost structure; (6) design details for the construction of the replacement roost; (7) monitoring protocols for assessing replacement roost use; (8) a schedule for excluding bats, demolishing of the existing roost, and construction of the replacement roost; and (9) contingency measures to be implemented if the replacement roosts do not function as designed.				
	<u>BIO-8c</u> : Roosts shall only be removed during seasons when bats are active and the young are able to fly (March 1 – April 15, and August 1 – October 15).	Construction Contractor	Throughout the construction period	Marin County DPW	<i>Verified by:</i> <i>Date:</i>
	<u>BIO-8d</u> : Removal of trees surrounding roost trees shall be conducted in a manner to prevent the tree being removed from falling on or otherwise damaging the roost tree.	Construction Contractor	Throughout the construction period	Marin County DPW	<i>Verified by:</i> <i>Date:</i>
	<u>BIO-8e</u> : No diesel or gas-powered equipment shall be stored or operated directly beneath a roost site.	Construction Contractor	Throughout the construction period	Marin County DPW	<i>Verified by:</i> <i>Date:</i>
	<u>BIO-8f</u> : Under supervision of a qualified bat expert, roost trees shall be removed in two steps, over two successive days: <ul style="list-style-type: none"> • Branches and limbs identified by the bat expert should be removed on Day 1 (Disturbance). • The remainder of the tree should be removed on 	Construction Contractor/ Project Biologist	Throughout the construction period	Marin County DPW	<i>Verified by:</i> <i>Date:</i>

Table 1 *Continued*

Impacts	Mitigation Measures	Implemented By	When Implemented	Monitored By	Verified By and Date
	Day 2 (Removal)				
	<u>BIO-8g</u> : All construction activity in the vicinity of an active roost shall be limited to daylight hours.	Construction Contractor	Throughout the construction period	Marin County DPW/Project Biologist	Verified by: Date:
	<u>BIO-8h</u> : A preconstruction survey of the project area and the area within 100 feet of the project areas shall be conducted for the presence of the badger dens and signs of badger occupancy. The survey shall be completed no more than 7 days prior to the initiation of vegetation removal and ground disturbing activities. If no dens are observed, a second survey shall be conducted within 24 hours of vegetation removal and ground disturbing activities to ensure that no badgers have entered the area since the first survey. Preconstruction surveys shall be repeated as necessary if vegetation removal and ground disturbing activities are delayed or postponed.	Marin County DPW/ Project Biologist	Prior to construction	Marin County DPW	Verified by: Date:
	<u>BIO-8i</u> : If potential dens are observed within the project area or 100 foot buffer area, then the project shall implement a monitoring program to determine if the dens are active. Monitoring shall be performed using remote triggered cameras or tracking medium placed at the den entrance. Cameras or tracking medium shall be operated for a minimum of 3 nights. If no activity is observed at the den during the monitoring period, the den shall be excavated by hand on the morning following the third night of monitoring. The den shall be backfilled to prevent reuse. All den excavations shall be coordinated with the CDFG. If a den is determined to be active, the den shall be monitored for an additional 3 nights to determine if the badgers are using the den continually. Special care shall be taken during the period of March through July when badger cubs may be present in the den. Excavation of natal dens shall not be allowed until it is determined by a qualified biologist that the young have left the den and are able to forage independently. The presence of a natal den within the project area or	Marin County DPW/ Project Biologist	Throughout the construction period	Marin County DPW/Project Biologist	Verified by: Date:

Table 1 *Continued*

Impacts	Mitigation Measures	Implemented By	When Implemented	Monitored By	Verified By and Date
	buffer area shall be reported to CDFG within 24 hours.				
	<u>BIO-8j</u> : During all times of the year, no excavation of the dens shall be allowed until monitoring results demonstrate that the den has been unoccupied for at least 3 nights. Once the den has been determined to be unoccupied for a period of at least 3 nights, the den may be excavated by hand and backfilled.	Marin County DPW/ Project Biologist	Throughout the construction period	Marin County DPW	<i>Verified by:</i> <i>Date:</i>
	<u>BIO-8k</u> : Outside of the period when young may be present in the den (August through February), measures may be taken to discourage the use of continually occupied dens. This discouragement may include blocking the entrance to the den or other methods approved by CDFG. The den must be continually monitored during this period to ensure that badgers are not occupying the den. Excavation and backfilling may occur once the den is determined to be unoccupied for at least 3 nights. A report documenting the results of preconstruction surveys and den monitoring shall be reported to CDFG within 2 weeks of completion of the den excavations and initiation of vegetation removal and ground disturbance activities.	Marin County DPW/ Project Biologist	Throughout the construction period	Marin County DPW	<i>Verified by:</i> <i>Date:</i>
<u>BIO-9</u> : Implementation of the proposed project would impact native trees protected by the Marin County Tree Preservation Ordinance present within the project area.	<u>BIO-9a</u> : Marin DPW shall comply with the requirements of the Marin County Tree Protection Ordinance for any tree loss under the proposed project including retaining wall work at Station 270+25 and all tree removal under Option A. Consistent with the ordinance, trees of the same species as those impacted shall be replanted at a 3:1 replacement ratio. The replacement trees shall be 15-gallon specimens unless a certified arborist or a representative from the MMWD determines otherwise. Planted trees shall be maintained with browse protection and weed cloth around the root zones as needed, and regularly watered during the dry season until such time that a certified arborist has determined that they are sufficiently established to not require further maintenance or watering.	Marin County DPW	Approval of construction documents	Marin County DPW	<i>Verified by:</i> <i>Date:</i>

Table 1 *Continued*

Impacts	Mitigation Measures	Implemented By	When Implemented	Monitored By	Verified By and Date
	<p>Replanted trees shall be planted within the Lagunitas Creek watershed if possible. One suitable location for tree replanting is the drilled-pier retaining wall structure located immediately downstream from the Peters Dam plunge pool (see Biological Assessment – Appendix E). MMWD constructed this wall to protect a pipeline that was endangered by a landslide along a 160-foot section of stream bank in 2005. MMWD would like to replant the stream bank below the retaining wall with native trees and shrubs, including redwood trees. The area to be planted would qualify as mitigation if Marin DPW paid for or did the planting.</p> <p>Prior to the start of roadway construction, DPW shall identify the final planting location(s) and receive approval from MMWD if necessary. If suitable replanting location(s) cannot be found and agreed to by the affected public agency property owners, then DPW may contribute the required monetary amount into the Marin County Tree Preservation Fund, as specified under the tree protection ordinance.</p>				
	<p><u>BIO-9b</u>: In order to compensate for the potential habitat impacts from tree removal along Lagunitas Creek, Marin DPW shall implement the following additional mitigation measures:</p> <ul style="list-style-type: none"> Marin DPW shall provide a financial contribution to the MMWD for support of habitat enhancement along Lagunitas Creek under the MMWD <i>Mount Tamalpais Watershed Gateway Project</i>. The appropriate amount of the contribution shall be directly related to the degree of removed habitat and shall be determined by Marin DPW in consultation with MMWD and shall be specifically dedicated to either invasive exotic vegetation management and/or native plant revegetation efforts along the creek. Marin DPW shall make available suitable 	Marin County DPW	Approval of construction documents	Marin County DPW	<p><i>Verified by:</i></p> <p><i>Date:</i></p>

Table 1 *Continued*

Impacts	Mitigation Measures	Implemented By	When Implemented	Monitored By	Verified By and Date
	cuttings from the tree removal work for use as woody debris and in bio-engineered structures along Lagunitas Creek in order to enhance salmonid habitat. The Marin DPW shall notify the signatories to the February 7, 2007 <i>Memorandum of Understanding for Woody Debris Management in Riparian Areas of the Lagunitas Creek Watershed</i> (Marin Municipal Water District, Marin County Open Space District, California Department of Parks and Recreation, National Park Service, and the Marin County Resource Conservation District – see <i>Biological Assessment</i> - Appendix E) of the availability of the wood, and the signatories shall notify Marin DPW if they have use for the woody debris, and when they will collect the material. If the signatory agencies have not responded within 14 days Marin DPW shall dispose of the material in a legal manner.				
<u>BIO-10</u> : Implementation of the proposed project would impact root of redwoods and other native trees present within the project area.	<u>BIO-10a</u> : An arborist certified by the International Society of Arboriculture (ISA) shall be present for any ground disturbing construction activities within a 50-foot radius of any redwood tree and within the dripline of other native trees to monitor compliance with Mitigation Measures BIO-10b through 10i.	Marin County DPW/ Certified Arborist	Throughout the construction period	Marin County CDA/Certified Arborist	<i>Verified by:</i> <i>Date:</i>
	<u>BIO-10b</u> : All excavation work below the finish grade within a 50-foot radius of any redwood tree shall be done with hand tools or with light mechanized equipment such (e.g., mini or light excavator or backhoe) to minimize disturbance or damage to roots.	Construction Contractor	Throughout the construction period	Marin County DPW	<i>Verified by:</i> <i>Date:</i>
	<u>BIO-10c</u> : The contractor shall use an air spade while excavating the soil within the structural root zone of native trees to minimize physical injury to the tree roots. The contractor may propose alternative excavation methods that would minimize root damage, subject to the approval of the certified arborist and Marin DPW.	Construction Contractor	Throughout the construction period	Marin County DPW	<i>Verified by:</i> <i>Date:</i>
	<u>BIO-10d</u> : Smaller roots less than 2-inches in diameter requiring cutting shall be cut cleanly in order to promote healing.	Construction Contractor	Throughout the construction period	Marin County DPW	<i>Verified by:</i> <i>Date:</i>

Table 1 *Continued*

Impacts	Mitigation Measures	Implemented By	When Implemented	Monitored By	Verified By and Date
	<u>BIO-10e</u> : The structural section for new pavement shall consist of Cement Treated Permeable Base (CTPB) or the equivalent to minimize the thickness of the structural section, minimize compaction of roots, and minimize thermal exposure to roots.	Construction Contractor	Throughout the construction period	Marin County DPW	<i>Verified by:</i> <i>Date:</i>
	<u>BIO-10f</u> : In areas where soil would be excavated through the roots of native trees for culvert replacement, retaining wall construction or other purposes, the following measures shall be used to protect roots and promote air circulation: <ul style="list-style-type: none"> The existing vegetation needing removal shall be cut flush with the ground and stumps left in place. Stumps shall not be treated with herbicides or other chemicals. Any duff layer shall be hand raked off the area within the clearing limits, stored, and replaced as erosion control. A 0.75 foot thick layer of Class 1, Type A porous material shall be placed and compacted as the first lift of the fill to increase water infiltration and air circulation. A layer of filter fabric shall then be applied prior to placing the remaining fill required for the embankment. In locations where fill would be placed next to the trunk of a redwood tree greater than three feet in diameter, a brow log shall be used to keep the soil from the tree trunk to increase air circulation. 	Construction Contractor	Throughout the construction period	Marin County DPW	<i>Verified by:</i> <i>Date:</i>
	<u>BIO-10g</u> : Equipment staging areas/storage areas shall be on existing paved areas on existing areas of compacted, gravel surface not located within 50 feet of redwood trees.	Construction Contractor	Throughout the construction period	Marin County DPW	<i>Verified by:</i> <i>Date:</i>
	<u>BIO-10h</u> : No heavy equipment shall be staged or parked within the drip line of mature trees in unpaved areas. Fill, gravel or other construction materials shall not be stockpiled within 50-feet of redwood trees or beneath the driplines of any other trees.	Construction Contractor	Throughout the construction period	Marin County DPW	<i>Verified by:</i> <i>Date:</i>

Table 1 *Continued*

Impacts	Mitigation Measures	Implemented By	When Implemented	Monitored By	Verified By and Date
	<u>BIO-10i</u> : In order to avoid adversely altering surface drainage patterns over redwood root zones, bioswales and other drainage swale features shall be located on the upslope side of SFDB (opposite side from Lagunitas Creek) wherever feasible.	Marin County DPW	Approval of construction documents	Marin County DPW	<i>Verified by:</i> <i>Date:</i>
<u>BIO-11</u> : Implementation of the proposed project would impact seasonal wetlands and other waters present within the project area.	<u>BIO-11a</u> : Prior to project implementation, Marin DPW shall obtain all required regulatory permits to conduct work activities in wetlands and streams. Permits required to conduct these activities include a Section 401 Water Quality Certification from the Regional Water Quality Control Board (RWQCB), a Section 404 permit from the USACE, and a Lake and Steambed Alteration Agreement from CDFG.	Marin County DPW	Prior to issuance of a grading permit	Marin County DPW	<i>Verified by:</i> <i>Date:</i>
	<u>BIO-11b</u> : Marin DPW shall compensate for the loss of 0.24 acres of seasonal wetlands associated with the filling of roadside swales by establishing new seasonal wetlands at a 2:1 on-site replacement ratio within the Lagunitas Creek watershed in the vicinity of the SFDB project. One possible mechanism for accomplishing this may be for the DPW to fund the establishment of at least 0.48 acres of new floodplain wetland habitat along Lagunitas Creek in association with the MMWD <i>Lagunitas Creek Salmon Winter Habitat Enhancement Program</i> . This program seeks to address a possible limiting factor to the survival of juvenile coho salmon - a lack of suitable winter habitat along the creek, by establishing new side channels and backwater wetlands on selected reaches of the floodplain. The following is a brief summary of the proposed mitigation plan: <ul style="list-style-type: none"> • Mitigation Location. Tocoloma Reach of Lagunitas Creek, just west of Platform Bridge Road, approximately 1,100 feet north of SFDB. • Mitigation Site. An approximately 1.2-acre abandoned floodplain area adjacent to Lagunitas Creek. The site is characterized by disturbed grassland and ruderal (weedy) vegetation formerly used for cattle grazing, and contains abandoned grazing infrastructure (e.g., corrals, feeding 	Marin County DPW	Prior to issuance of a grading permit	Marin County DPW	<i>Verified by:</i> <i>Date:</i>

Table 1 *Continued*

Impacts	Mitigation Measures	Implemented By	When Implemented	Monitored By	Verified By and Date
	<p>troughs) as well as small areas of fill that would need to be removed. The site is generally flat with elevations ranging from approximately 62 – 63 feet NGVD. Soils are mapped as stratified depositions of sand, gravel, cobbles and stones with ephemeral depositions of silt and sandy loam, as is typical of floodplains along the creek (“Fluents, channelized” under Soil Conservation Service Soil Survey maps).</p> <p>The proposed mitigation site was selected by MMWD for the following reasons: (1) the site has floodplain topography and substrate conditions suitable for backwater channel creation; (2) the site is currently disturbed and does not support woody riparian habitat or wetlands; and (3) the site is publicly-owned (by the NPS) and is easily accessible to construction equipment due to its proximity to Platform Bridge Road.</p> <ul style="list-style-type: none"> • Mitigation Approach. The proposed plan is intended to be one element of the overall Winter Habitat Enhancement Program, which would include various winter habitat enhancement efforts along Lagunitas Creek from the Shafter Bridge downstream to Olema Creek. The overall goal of the plan is to establish an approximately 1,200-linear foot, 30-foot wide backwater channel that would establish approximately 0.8 acres of suitable over-wintering habitat for coho salmon juveniles and smolts. The channel would have upstream and downstream connections to Lagunitas Creek and would have a bottom elevation that intercepts baseflows during the winter and early spring based on historical flow records in Lagunitas Creek. Channel cross sections would be modeled after existing backwater channel habitat in Lagunitas Creek and in similar coastal streams elsewhere, and would include gentle sideslopes suitable for the establishment of emergent marsh, seasonal wetland and woody riparian vegetation 				

Table 1 *Continued*

Impacts	Mitigation Measures	Implemented By	When Implemented	Monitored By	Verified By and Date
	<p>encompassing at least 0.5 acres. A key design element would be to ensure that salmonids are able to swim into and out of the backwater habitat and not become stranded during lower flows. The backwater habitat enhancement design would also include refuge and cover habitat features for salmonids (e.g., woody debris structures and undercut bank sections).</p> <ul style="list-style-type: none"> • Funding Status. The project has received funding only for detailed topographic surveys, site assessment work and construction plan preparation. The project does not have funding for regulatory approval, construction or follow-up monitoring and management. As mitigation for the SFDB project, the DPW proposes to provide the required funding and/or in-kind services for regulatory approval, construction and follow-up monitoring and management to allow the project to be implemented. • Schedule. The MMWD would be selecting an engineering contractor to conduct hydrologic modeling analysis and to prepare the construction plans, as well as to conduct the related, site specific topographic survey and site assessments. Construction plans are scheduled to be completed by July 2011. The PWD would prepare and submit the Mitigation and Monitoring Plan in accordance with Corps of Engineers, Regional Water Quality Control Board and California Department of Fish and Game requirements as part of the wetland/streambed alteration permit applications for the SFDB Rehabilitation project. Implementation of the plan would occur prior to or simultaneous with the commencement of construction work for the SFDB Rehabilitation project. <p>Project construction, including filling of roadside swales shall not start until a suitable wetland</p>				

Table 1 *Continued*

Impacts	Mitigation Measures	Implemented By	When Implemented	Monitored By	Verified By and Date
	mitigation site has been selected and a Wetland Mitigation and Monitoring Plan for the site has been prepared by Marin DPW and approved by the Corps, RWQCB and CDFG. Mitigation construction work under the plan shall be completed in accordance with a timetable agreed to by these three agencies.				
	<u>BIO-11c</u> : Marin DPW shall minimize temporary disturbances to streambanks to the smallest amount feasible needed to accomplish culvert replacement, bank stabilization and slope repair work. Marin DPW shall restore disturbed areas to pre-disturbance conditions after temporary project activities are complete. Seed mixes for stabilization of disturbed areas shall consist of species native to Marin County. Fertilizers shall not be applied with any seeding or as part of hydroseed mixes.	Marin County DPW	During construction/ Following construction	Marin County DPW	<i>Verified by:</i> <i>Date:</i>
	<u>BIO-11d</u> : Disturbance of stream channels in the project site shall be limited to the minimum necessary to complete proposed drainage improvement activities. Riparian vegetation shall be trimmed (and not removed) where feasible, and where removal is necessary, should be at the minimum necessary to complete work. Stream channels shall be re-vegetated with appropriate riparian vegetation after work activities are completed. All re-vegetation activities shall be approved by CDFG under the Streambed Alteration Agreement process prior to restoration activities being completed.	Construction Contractor	Throughout the construction period	Marin County DPW	<i>Verified by:</i> <i>Date:</i>
	<u>BIO-11e</u> : A qualified biologist shall be present during any work occurring within wetlands or streams.	Project Biologist	Throughout the construction period	Marin County DPW	<i>Verified by:</i> <i>Date:</i>
	<u>BIO-11f</u> : DPW shall implement all water quality protection measures contained in the SWPPP to prevent the direct and indirect release of soil and other construction materials into wetlands and streams	Marin County DPW/ Construction Contractor	Throughout the construction period	Marin County DPW	<i>Verified by:</i> <i>Date:</i>
<u>BIO-12</u> : Implementation of the proposed project could induce the spread of panic veldt grass and other non-native invasive plants to previously un-infested areas within the project area.	<u>BIO-12a</u> : Prior to project implementation, Marin DPW shall remove populations or individuals of invasive plants listed by the California Invasive Plant Council (CalIPC) with ratings of A or B for impacts and invasiveness from areas of the project site where	Marin County DPW/Consulting Botanist	Prior to construction	Marin County DPW/Consulting Botanist	<i>Verified by:</i> <i>Date:</i>

Table 1 *Continued*

Impacts	Mitigation Measures	Implemented By	When Implemented	Monitored By	Verified By and Date
	the ground surface would be disturbed and vegetation removed. Removal activities shall be conducted under the supervision of a botanist qualified in the identification of invasive weed species. Invasive weed removal shall be conducted prior to seed set (as determined by monthly spring surveys by a qualified botanist) to minimize the spread of invasive weed seeds in the project site. If it is not possible to remove weeds prior to seed set, measures to minimize the release of invasive weed seeds during weed removal (e.g., manual weed removal into plastic bags) shall be used.				
	BIO-12b: If hay bale installation is necessary for erosion-control in the project area, only certified weed-free hay bales shall be used.	Construction Contractor	During construction	Marin County DPW	Verified by: Date:
	BIO-12c: Construction equipment, particularly wheels and tracks, shall be cleaned prior to entering the project site to prevent the spread of invasive weeds from areas outside of the project site. Cleaning shall be achieved by rinsing equipment with water or using high-pressure air.	Construction Contractor	Throughout the construction period	Marin County DPW	Verified by: Date:
	BIO-12d: When re-vegetation of bare soil surfaces is required, Marin DPW shall utilize a native seed mix pre-approved by CDFG and reviewed by CNPS.	Construction Contractor	During construction	Marin County DPW	Verified by: Date:
4.4 CULTURAL RESOURCES					
CULT-1: Project implementation may cause an adverse change to a unique archaeological resource, including federally or State-listed resources, pursuant to CEQA.	CULT-1a: Prior to project construction, a professional archaeologist shall establish a barrier around recorded cultural resources subject to impact by project activities so that these Environmentally Sensitive Areas (ESAs) can be avoided during construction. The professional archaeologist shall use high visibility temporary construction fencing or a similar durable material (i.e., not construction flagging) to establish the ESAs. For resources in the project area (i.e., the County right-of-way consisting of 30 feet on each side of the roadway centerline), the fencing shall delineate the entire boundary of the resource. For resources partially in or adjacent to the project area, the fencing shall delineate those portions of the resource that	Marin County DPW/Professional Archaeologist	Throughout the construction period	Marin County DPW	Verified by: Date:

Table 1 *Continued*

Impacts	Mitigation Measures	Implemented By	When Implemented	Monitored By	Verified By and Date
	<p>extend into, or are adjacent to, the project area.</p> <p>To the greatest extent feasible, no project construction or access by construction crew shall occur in these areas. The project superintendent, crew foreman, environmental compliance officer, or other responsible project official shall review the condition of the fencing and check for unauthorized entry into these areas on a weekly basis. Any deficiencies in the fencing shall be repaired at the direction of the responsible project official.</p>				
	<p><u>CULT-1b</u>: If project construction must occur within a protected area (or if Option A requires tree root mass removal in an ESA, see below), a qualified professional archaeologist shall monitor the ground-disturbing component of such construction. The purpose of the monitoring is to identify intact archaeological deposits prior to substantial disturbance by project construction activity. If intact archaeological deposits are identified by archaeological monitoring, the monitor shall be empowered to temporarily halt construction to assess the find. Impacts to the find by project activities shall be avoided. If such avoidance is not feasible, the County shall conduct the necessary study, in consultation with the project archaeologist, to determine if the deposit qualifies as a historical or unique archaeological resource under CEQA. If the deposit <i>does not</i> so qualify, project construction may resume with the continuation of archaeological monitoring. If the deposit <i>does</i> so qualify, then the County shall develop and implement, in consultation with the project archaeologist, a plan to mitigate the impact.</p> <p>Mitigation may consist of, but is not limited to, systematic recovery and analysis of archaeological deposits; recording the resource; preparation of a report of findings; and accessioning recovered archaeological materials at an appropriate curation facility. Public educational outreach may also be</p>	Marin County DPW	During construction within protected areas	Marin County DPW/ Professional Archaeologist	<p><i>Verified by:</i></p> <p><i>Date:</i></p>

Table 1 *Continued*

Impacts	Mitigation Measures	Implemented By	When Implemented	Monitored By	Verified By and Date
	appropriate. If data recovery excavation is the means selected to recover the scientifically consequential information contained in the deposit, a data recovery plan must be prepared, consistent with the requirements of <i>CEQA Guidelines</i> Section 15126.4(b)(3)(C). If the deposit is prehistoric in nature, the County shall seek and consider the input of the Federated Indians of Graton Rancheria regarding the proposed treatment prior to implementing the plan. Any reports generated from the evaluation or mitigation shall be submitted to the County and the Northwest Information Center.				
	<p>CULT-1c: If deposits of prehistoric or historical archaeological materials are encountered during project activities that are not archaeologically monitored, all work within 25 feet of the discovery shall be redirected and a qualified archaeologist contacted to assess the situation, consult with agencies as appropriate, and make recommendations for the treatment of the discovery. The County shall also be notified. Project personnel shall not collect or move any archaeological materials. Adverse effects to the deposits shall be avoided by project activities or, if the deposits cannot be avoided, they shall be evaluated as described in Mitigation Measure CULT-1b to determine if the deposit qualifies as a historical or archaeological resource under CEQA and handled, documented and treated accordingly.</p> <p>The County shall inform its contractor(s) of the archaeological sensitivity of the project area by including the following directive in contract documents:</p> <p><i>If prehistoric or historical archaeological deposits are discovered during project activities, all work within 25 feet of the discovery shall be redirected and a qualified archaeologist contacted to assess the situation, consult with agencies as appropriate and make recommendations regarding the treatment of the discovery. Project personnel shall not collect or move</i></p>	Construction Contractor/ Marin County DPW	Throughout the construction period/ Approval of construction documents	Marin County DPW/ Professional Archaeologist	<p><i>Verified by:</i></p> <p><i>Date:</i></p>

Table 1 *Continued*

Impacts	Mitigation Measures	Implemented By	When Implemented	Monitored By	Verified By and Date
	<p>any archaeological materials or human remains and associated materials. Prehistoric materials can include flaked-stone tools (e.g., projectile points, knives, choppers) or obsidian, chert, basalt, or quartzite toolmaking debris; bone tools; culturally darkened soil (i.e., midden soil often containing heat-affected rock, ash and charcoal, shellfish remains, faunal bones, and cultural materials); and stone milling equipment (e.g., mortars, pestles, handstones). Prehistoric sites often contain human remains. Historical materials can include wood, stone, concrete footings, walls, and other structural remains; and deposits of wood, glass, ceramics, metal, and other refuse. If the archaeological deposits are prehistoric in nature, the archaeologist shall consult with the Federated Indians of Graton Rancheria regarding the treatment of the find, and the feasible recommendations of the Tribe shall be incorporated in the approved plan.</p>				
	<p><u>CULT-1d</u>: If feasible, trees shall be removed by grinding each stump to grade and using a chemical application to kill stump growth. If this approach is taken, impacts to archaeological deposits due to Option A would be less than significant. If this approach is not feasible, and if the root mass must be removed, then Mitigation Measures CULT-1b or -1c shall be implemented, as appropriate, depending on whether or not the tree is located within an ESA.</p>	Construction Contractor	During construction	Marin County DPW	<p>Verified by:</p> <p>Date:</p>
<p><u>CULT-2</u>: Project implementation may cause an adverse change to a unique potential historical resource, including federally or State-listed resources and potential local landmarks (Sir Francis Drake Boulevard), pursuant to CEQA..</p>	<p><u>CULT-2a</u>: The loss of historic headwalls can be mitigated by the documentation that will preserve a record of their contribution to the original roadway design.</p>	Marin County DPW	Prior to construction	Marin County DPW	<p>Verified by:</p> <p>Date:</p>
	<p><u>CULT-2b</u>: The Marin County DPW shall distribute the Pacific Legacy archaeological survey report to the Marin History Museum Library. Information concerning the location of prehistoric archaeological deposits (including maps and written descriptions) shall be removed from these distribution copies. The distribution of the documentation of SFDB and its</p>	Marin County DPW	Prior to construction	Marin County DPW	<p>Verified by:</p> <p>Date:</p>

Table 1 *Continued*

Impacts	Mitigation Measures	Implemented By	When Implemented	Monitored By	Verified By and Date
	associated features will serve an interpretive function at the Museum Library by making publicly available information about the historical development of Marin County's historical roads, and the landscape features that once contributed to this history. The Marin County DPW shall retain a copy of the report to provide a record of historical engineering features for future planning efforts, and would reduce the impact on the historic roadway resource to less-than-significant.				
<u>CULT-3</u> : Project implementation may destroy paleontological resources or sites.	<p><u>CULT-3</u>: The County shall inform its contractor(s) of the paleontological sensitivity of the project area by including the following directive in contract documents:</p> <p><i>The subsurface of the construction site may be sensitive for paleontological resources. If paleontological resources are encountered during project subsurface construction, all ground-disturbing activities within 25 feet shall be redirected and a qualified paleontologist contacted to assess the situation, consult with agencies as appropriate, and make recommendations for the treatment of the discovery. Project personnel shall not collect or move any paleontological materials. Paleontological resources include fossil plants and animals, and evidence of past life such as trace fossils and tracks. Ancient marine sediments may contain invertebrate fossils such as snails, clam and oyster shells, sponges, and protozoa; and vertebrate fossils such as fish, whale, and sea lion bones. Vertebrate land mammals may include bones of mammoth, camel, saber tooth cat, horse, and bison. Paleontological resources also include plant imprints, petrified wood, and animal tracks.</i></p> <p>Adverse effects to such paleontological resources shall be avoided. If avoidance is not possible, the discovery should be assessed to determine its paleontological significance. If the discovery is not significant, avoidance is not necessary. If the</p>	Marin County DPW/ Construction Contractor	Approval of construction documents/ Throughout the construction period	Marin County DPW	<p><i>Verified by:</i></p> <p><i>Date:</i></p>

Table 1 *Continued*

Impacts	Mitigation Measures	Implemented By	When Implemented	Monitored By	Verified By and Date
	paleontological resources are significant, they will need to be avoided or adverse effects must be mitigated. Upon completion of the assessment, the paleontologist should prepare a report documenting the methods and results, and provide recommendations for the treatment of the paleontological resources discovered. The report should be submitted to the County and the University of California, Museum of Paleontology. The submittal of the report would reduce the potential impact on paleontological resources to less-than-significant.				
<u>CULT-4:</u> The construction of the proposed project may disturb human remains.	<p><u>CULT-4:</u> If human remains are encountered during construction activities, these remains shall be treated in accordance with Health and Safety Code §7050.5. The County shall inform its contractor(s) of the sensitivity of the project area for human remains by including the following directive in contract documents:</p> <p><i>If human remains are encountered during project activities, whether archaeologically monitored or not, work within 25 feet of the discovery shall be redirected and the Marin County Coroner notified immediately. At the same time, a professional archaeologist shall be contacted to assess the situation and consult with agencies as appropriate. The County should also be notified. Project personnel shall not collect or move any human remains and associated materials. If the human remains are of Native American origin, the Coroner must notify the Native American Heritage Commission within 24 hours of this identification. The Native American Heritage Commission will identify a Most Likely Descendant (MLD) to inspect the site and provide recommendations for the proper treatment of the remains and associated grave goods.</i></p> <p>Upon completion of the assessment, the archaeologist shall prepare a report documenting the methods and results, and provide recommendations for the treatment of the human remains and any associated</p>	Marin County DPW/ Construction Contractor	Approval of construction documents/ Throughout the construction period	Marin County DPW/ Professional Archaeologist/ FIGR	<p><i>Verified by:</i></p> <p><i>Date:</i></p>

Table 1 *Continued*

Impacts	Mitigation Measures	Implemented By	When Implemented	Monitored By	Verified By and Date
	cultural materials, as appropriate and in coordination with the recommendations of the MLD. The report shall be submitted to the County and the Northwest Information Center.				
4.5 GEOLOGY, SOILS AND SEISMICITY					
GEO-1: The proposed project may be subject to seismic shaking hazard impacts.	<p>GEO-1: Prior to the commencement of the project, the Geotechnical Investigation and associated recommendations, as prepared by a licensed professional, shall be submitted to the County of Marin Public Works Engineering Division. The Geotechnical Investigation's determination of the project area's surface geotechnical conditions and potential seismic hazards such as liquefaction, lateral spreading, and landslides shall be considered in the project design. The Geotechnical Investigation's recommendations of construction techniques appropriate to minimize seismic damage shall be adopted as part of the project design and implementation plan. Some of the recommended construction techniques from the project-specific Geotechnical Investigation include:</p> <ul style="list-style-type: none"> • Full depth replacement of soft subgrade materials, such as un-engineered fill or colluvium, with engineered fill. This would be accomplished by excavation of the subgrade and replacement with select imported fill materials. • Excavations for the removal of culverts should be cleaned of loose materials and widened as necessary to permit compaction equipment access. The excavations should be subsequently backfilled with properly compacted fill. • Imported select fill should be of low expansion potential and free of organic matter, and should conform, in general, to the following requirements: <ul style="list-style-type: none"> – Plasticity Index less than 15% 	Marin County DPW/Project Geotechnical Engineer	Prior to issuance of a grading permit	Marin County DPW	<p><i>Verified by:</i></p> <p><i>Date:</i></p>

Table 1 *Continued*

Impacts	Mitigation Measures	Implemented By	When Implemented	Monitored By	Verified By and Date
	<ul style="list-style-type: none"> - Liquid Limit less than 40% - Percent Soil Passing #200 Sieve between 15% and 60% - Maximum Aggregate Size 4 inches • Consultation with a licensed geotechnical engineer to provide the appropriate engineering specifications input for design of any required structures to withstand seismic forces. • Finished project grading and surfaces should avoid any ponding of water or concentrated seepage under structures or adjacent to the roadway. <p>In addition, the following shall be implemented:</p> <ul style="list-style-type: none"> • The County of Marin Public Works Engineering Division shall review the Geotechnical Investigation along with final project plans and confirm that the proposed improvements fully comply with the County of Marin Uniform Construction Standards and that the Geotechnical Investigation recommendations have been incorporated. • All design criteria and specifications set forth in the Geotechnical Investigation shall be implemented as a condition of project approval. 				
<u>GEO-2</u> : Damage to proposed improvements related to expansive soils, corrosive soils, and/or settlements of non-engineered fill or disparate soils could occur.	<u>GEO-2</u> : The designers and engineers of proposed improvements (including roads, pullouts, parking areas, and utilities) shall consider the site's potential to be underlain by soils with moderate to high shrink-swell potential and, per the Geotechnical Investigation's recommendations, a qualified professional shall observe soil conditions in the field during the rehabilitation process. If locations along the alignment of SFDB are underlain by expansive soils and/or non-engineered fill, the geotechnical consultant to the project shall determine if the soils encountered	Marin County DPW/ Project Geotechnical Engineer	Throughout the construction period	Marin County DPW	<p><i>Verified by:</i></p> <p><i>Date:</i></p>

Table 1 *Continued*

Impacts	Mitigation Measures	Implemented By	When Implemented	Monitored By	Verified By and Date
	<p>are problematic, and shall make recommendations to ensure potential damage related to expansive soils and non-uniformly compacted fills are minimized. Mitigation options may range from removal of the problematic soils, and replacement, as needed, with properly conditioned and compacted fill, to design and construction of improvements to withstand the forces exerted during the expected shrink-swell cycles and settlements.</p> <p>All design criteria and specifications set forth in the Geotechnical Investigation and as made by the geotechnical consultant while monitoring the project shall be implemented to reduce impacts associated with problematic soils.</p> <p>The Geotechnical Investigation consultant shall include an evaluation of the potential for corrosive soils. If the results indicate corrosive soil conditions, appropriate measures to mitigate these conditions shall be incorporated into the design of project improvements, such as culverts, that may come into contact with site soils. Wherever corrosive soils are found in sufficient concentrations, recommendations shall be made to protect iron, steel, metal, and concrete from long-term deterioration caused by contact with corrosive onsite soils. In general, these recommendations are expected to include, but not be limited to, the following provisions:</p> <ul style="list-style-type: none"> • Protect buried iron, steel, cast iron, ductile iron, galvanized steel, and dielectric coated steel or iron (including all buried metallic piping) against corrosion from soil. • Protect buried metal and cement structures in contact with earth surfaces from chloride ion concentrations. • Use sulfate-resistant concrete mix for all concrete in contact with the ground. 				

Table 1 *Continued*

Impacts	Mitigation Measures	Implemented By	When Implemented	Monitored By	Verified By and Date
	<ul style="list-style-type: none"> Consult a corrosion expert as needed during the project's detailed design phase to design the most effective corrosion protection. 				
GEO-3: Landslide hazards could result in roadway damage, vehicle damage, and/or injuries.	GEO-3: Prior to the commencement of the project, a site-specific design-level geotechnical investigation shall be conducted of the slope instability feature at Station 270+25. The geotechnical investigation shall be prepared by a licensed geotechnical engineer and the geotechnical report shall be submitted to the County of Marin Public Works Engineering Division. The geotechnical investigation shall include documentation of geologic mapping of the site and adjacent areas, exploratory borings, appropriate laboratory testing of soils samples, and recommendations for repair of the slope instability feature. All design criteria and specifications set forth in the design-level geotechnical investigation shall be implemented as a condition of project approval.	Marin County DPW/ Project Geotechnical Engineer	Prior to issuance of a grading permit	Marin County DPW	<i>Verified by:</i> <i>Date:</i>
4.6 HYDROLOGY AND WATER QUALITY					
HYD-1: Construction period and operation period activities could generate stormwater runoff that could cause or contribute to a violation of water quality standards or waste discharge requirements, or otherwise substantially degrade the water quality of Lagunitas Creek and/or Tomales Bay.	HYD-1a: Prior to construction, consistent with the requirements of the Construction General Permit, the County shall prepare a SWPPP designed to reduce potential impacts to surface water quality through the project construction period. The SWPPP shall be prepared by a Qualified SWPPP Developer. The SWPPP shall include, as applicable, all Best Management Practices (BMPs) required in Attachment D for Risk Level 2 dischargers, or Attachment E for Risk Level 3 dischargers (as appropriate based on final determination of the project's Risk Level status). The SWPPP shall include a construction site Monitoring Program that includes requirements for dry weather visual observations of pollutants at all discharge locations, and as appropriate (depending on the Risk Level), sampling of the site effluent or receiving waters (receiving water quality monitoring is only required for some Risk Level 3 dischargers). The County shall also	Marin County DPW/ Construction Contractor	Prior to issuance of a grading permit/ Throughout the construction period	Marin County DPW	<i>Verified by:</i> <i>Date:</i>

Table 1 *Continued*

Impacts	Mitigation Measures	Implemented By	When Implemented	Monitored By	Verified By and Date
	<p>prepare a Rain Event Action Plan as part of the SWPPP. BMP implementation shall be consistent with the BMPs requirements in the California Stormwater Quality Association Stormwater Best Management Handbook-Construction.⁴ Following are the types of BMPs that shall be implemented, subject to review and approval by the Water Board.</p> <p>Erosion Control BMPs</p> <ul style="list-style-type: none"> • <i>Scheduling.</i> To reduce the potential for erosion and sediment discharge, construction shall be scheduled to minimize ground disturbance during the rainy season. The project applicant shall: <ul style="list-style-type: none"> ○ Sequence construction activities to minimize the amount of time that soils remain disturbed. ○ Stabilize all disturbed soils as soon as possible following the completion of ground disturbing work. ○ Install erosion and sediment control BMPs prior to the start of any ground-disturbing activities. • <i>Preservation of Existing Vegetation.</i> Where feasible, existing vegetation shall be preserved to provide erosion control. • <i>Stabilize Soils.</i> Hydroseeding and geotextile fabrics shall be used, as appropriate, to reduce erosion. • <i>Stabilize Streambanks.</i> When working along stream banks or within channels, BMPs shall be implemented to minimize channel erosion and sedimentation. Proper erosion and sediment 				

⁴ California Stormwater Quality Association, 2003a, Stormwater Best Management Handbook-Construction, with updates through 2006. Website: <http://www.cabmphandbooks.com/Construction.asp>, accessed November 2, 2009.

Table 1 *Continued*

Impacts	Mitigation Measures	Implemented By	When Implemented	Monitored By	Verified By and Date
	<p>controls, such as silt fences, mulch, geotextiles, and hydroseeding, shall be used. To the extent possible, existing vegetation that stabilizes the stream banks shall be preserved. While working within a stream channel, a barrier to isolate the work area shall be created, divert the stream around the work site, or employ practices to minimize sediment suspension.</p> <ul style="list-style-type: none"> • <i>Drainage Swales.</i> Construct drainage swales to divert runoff away from exposed soils and stabilized areas, and redirect the runoff to a desired location. • <i>Outlet Protection and Velocity Dissipation Devices.</i> Install rock or concrete rubble at culvert and pipe outlets to prevent scour of the soil caused by concentrated high-velocity flows. <p>Sediment Control BMPs</p> <ul style="list-style-type: none"> • <i>Silt Fence/Fiber Roll.</i> Silt fences or fiber rolls shall be installed around the perimeter of the areas affected by construction, at the toe of slopes, around storm drain inlets, and at outfall areas, to prevent offsite sedimentation. • <i>Slope Protection and Vacuuming.</i> When working adjacent to Lagunitas Creek on steep banks, a barrier shall be erected and equipment capable of vacuuming sediment shall be provided during pavement grinding and excavation operations. • <i>Storm Drain Inlet Protection.</i> Storm drains shall be protected using a filter fabric fence, gravel bag barrier, or other methods, to allow sediments to be filtered or settle out before runoff enters drain inlets. • <i>Sand Bag or Gravel Bag Berm.</i> Sand or gravel bags shall be installed as a linear erosion or sediment control measure to pond sheet flow 				

Table 1 *Continued*

Impacts	Mitigation Measures	Implemented By	When Implemented	Monitored By	Verified By and Date
	<p>runoff and reduce the discharge of sediment.</p> <p>Wind Erosion Control BMPs</p> <ul style="list-style-type: none"> <i>Dust Control.</i> Potable water shall be applied using water trucks to alleviate nuisance caused by dust. Water application rates shall be minimized to prevent erosion and runoff. <i>Stockpile Management.</i> Silt fences shall be used around the perimeter of stockpiles and stockpiles shall be covered with plastic to prevent wind dispersal of sediment. <p>Tracking Controls</p> <ul style="list-style-type: none"> <i>Stabilized Construction Entrance/Exit.</i> Construction site entrances and exits, the equipment yard, the water filling area for water trucks, and the project office location, shall be graded and stabilized to prevent runoff from the site and erosion. <i>Tire Wash.</i> A tire washing facility shall be installed to allow for tire washing when vehicles exit the site to prevent tracking onto public and private streets. <p>Non-Stormwater Controls</p> <ul style="list-style-type: none"> <i>Dewatering.</i> The SWPPP shall include a dewatering plan for non-contaminated groundwater specifying methods of water collection, transport, treatment, and discharge. The discharger shall consult with the Water Board regarding any required permit (other than the Construction General Permit) or Basin Plan conditions prior to initial dewatering activities to land, storm drains, or waterbodies. Water 				

Table 1 *Continued*

Impacts	Mitigation Measures	Implemented By	When Implemented	Monitored By	Verified By and Date
	<p>produced by dewatering shall be impounded in holding tanks or other holding facilities to settle the solids and provide other treatment as necessary prior to discharge to receiving waters. Discharges of water produced by dewatering shall be controlled to prevent erosion.</p> <ul style="list-style-type: none"> • <i>Illicit Connection/Discharge Detection and Reporting.</i> Contractors shall regularly inspect the site for evidence of illicit connections, illegal dumping, or discharges. Such discharges shall immediately be reported to the stormwater illegal discharge contact for Marin County. • <i>Vehicle and Equipment Cleaning.</i> Construction equipment shall be washed regularly in a designated enclosed area. Except for concrete washout, vehicle cleaning shall not be performed on site. Concrete washout waste will be contained and managed properly. • <i>Vehicle and Equipment Fueling and Maintenance.</i> Self-propelled vehicles shall be fueled off-site or at the temporary fueling area. Fuel trucks equipped with absorbent spill clean-up materials shall be used for all on-site fueling; the fuel truck shall be parked on the paved fueling area for overnight storage. Drip pans shall be used for all mobile fueling. Drip pans or absorbent pads shall be used for all vehicle and equipment maintenance activities. Vehicle maintenance and mobile fueling operations shall be conducted on a level graded area, at least 50 feet away from operational inlets and drainage facilities. • <i>Paving and Grinding Operations.</i> Proper practices shall be implemented to prevent run-on and run-off, and to properly dispose of waste. Paving and grinding activities shall be avoided during the rainy season, when feasible. • <i>Structure Demolition.</i> Potable water shall be 				

Table 1 *Continued*

Impacts	Mitigation Measures	Implemented By	When Implemented	Monitored By	Verified By and Date
	<p>sprayed during road demolition to control dust.</p> <p>Waste Management and Materials Pollution Control BMPs</p> <ul style="list-style-type: none"> <i>Material Delivery, Storage and Use.</i> The general material storage area shall be located in the contractor's yard. Two watertight shipping containers shall be used to store hand tools, small parts, and most construction materials that can be carried by hand, such as paint cans, solvents and grease. Very large items, such as light standards, framing materials, and stockpiled lumber, shall be stored in the open in the general storage area. Such materials shall be elevated with wood blocks to minimize contact with run-on. Spill clean-up materials, material safety data sheets, a material inventory, and emergency contact numbers shall be maintained at the site. <i>Spill Prevention and Control.</i> Proper procedures shall be implemented to contain and clean-up spills and prevent material discharges into the storm drain system. <i>Solid Waste Management.</i> Solid wastes shall be loaded directly into trucks for off-site disposal. When on-site storage is necessary, solid wastes shall be stored in watertight dumpsters in the general storage area of the contractor's yard. Asphalt concrete and Portland cement concrete rubble shall be removed immediately to an approved disposal site. <i>Sanitary/Septic Waste Management.</i> Portable toilets shall be located and maintained 50 feet away from drain inlets and away from paved areas. <i>Stockpile Management.</i> Stockpiles shall be surrounded by sediment controls and shall be 				

Table 1 *Continued*

Impacts	Mitigation Measures	Implemented By	When Implemented	Monitored By	Verified By and Date
	<p>covered. Alternatively, soil binders may be used to minimize erosion. If contaminated soils are encountered, such as soils containing aerially-deposited lead, stockpiles shall be covered and bermed and located away from storm drain inlets and watercourses, and on-site storage shall be minimized. Hazardous materials shall be transported and disposed in accordance with applicable regulations (refer to Mitigation Measure HAZ-1c).</p> <ul style="list-style-type: none"> • <i>Concrete Waste Management.</i> Cement-based fill material shall be used for the project and waste management shall be consistent with requirements in the CA BMP Handbook (BMP WM-8). Concrete washout waste will be contained and managed properly. • <i>Training.</i> Construction site personnel shall receive training on implementing all BMPs included in the SWPPP. All personnel that inspect BMPs and perform other monitoring activities, such as visual observations and collecting water quality samples, shall be trained. • <i>Post-Construction BMPs.</i> Outlet protection/energy dissipating devices, vegetative buffer strips, or sand filters shall be installed at culverts and along the roadway. Exposed slopes shall be seeded with a mix native to Marin County that is appropriate for erosion control. 				
	<p><u>HYD-1b:</u> As part of project implementation, the County shall implement the following five water quality improvement measures:</p> <ol style="list-style-type: none"> 1. The County shall install a permeable layer, as the top surface layer above impervious rubberized asphalt concrete on all paved road sections. Runoff exiting the permeable friction course shall be designed to sheetflow on the underlying impervious asphalt concrete and discharge into the nearest storm drain inlet, culvert, or directly over 	Marin County DPW	Approval of construction documents	Marin County DPW	<p><i>Verified by:</i></p> <p><i>Date:</i></p>

Table 1 *Continued*

Impacts	Mitigation Measures	Implemented By	When Implemented	Monitored By	Verified By and Date
	<p>the outboard edge of the road.</p> <p>2. Pullout areas shall be designed with permeable asphalt for the to allow stormwater to percolate through the asphalt and be collected in an underdrain that will be routed to discharge at the nearest existing roadway culvert.</p> <p>3. In locations where the road slopes toward Lagunitas Creek and there is adequate space, a vegetative buffer strip shall be established adjacent to the road. The buffer strip vegetation shall be indigenous to Marin County and shall also be suitable for erosion control. The buffer shall be protected from vehicle traffic and illicit parking by placement of a barrier (e.g., guardrail, boulders) between the road and the buffer.</p> <p>4. In locations where the road slopes toward the hillside and away from Lagunitas Creek, a vegetated swale with permeable backfill underneath that would function like a sand filter shall be installed where feasible. A perforated pipe shall be installed within the permeable backfill to direct infiltrating runoff to the nearest culvert; the underdrain shall reduce the ponding of water that inundates the road during significant storm events. The bioswale vegetation shall be indigenous to Marin County and shall also be suitable for erosion control. Swales/sand filters shall not be installed in locations of freshwater emergent wetlands (to preserve the wetlands).</p> <p>5. The need for the water quality improvement measures to be designed for flow duration control shall be evaluated in the project design phase. Pre- and post-project flow duration curves shall be generated using a hydrologic model that analyzes a long-term time series of precipitation data to generate the cumulative frequency of in-stream flows of a certain magnitude for the full distribution of flows up to the pre-project 10-year</p>				

Table 1 *Continued*

Impacts	Mitigation Measures	Implemented By	When Implemented	Monitored By	Verified By and Date
	peak flow rate. Flow duration control shall be implemented if pre- and post-project flow duration curves deviate by more than 10% over the length of the flow duration curve; subsurface storage shall be provided within the water quality treatment measures, and the outlet shall be designed to discharge the increase in runoff volume resulting from the project at a rate that does not increase in-stream erosion.				
4.7 HAZARDS AND HAZARDOUS MATERIALS					
HAZ-1: Project construction activities would entail the use of hazardous materials and could also encounter hazardous materials in shallow soils, which would require transportation off site and disposal. In addition, hazardous materials used or encountered during construction could create a significant hazard through release into the environment.	HAZ-1a: Prior to the initiation of project construction, a soil investigation shall be performed by a licensed professional to evaluate if ADL and other potentially hazardous constituents are present in shallow soils that would be disturbed. Chemical analyses for soil shall be performed by an analytical laboratory certified by the California Department of Public Health Environmental Laboratory Accreditation Program. A licensed professional shall review the results of the soil investigation and provide recommendations on additional investigation activities, if any, and soil management requirements during project construction, if applicable (see Mitigation Measure HAZ-1c). The analytical results of the soil investigation shall be compared to hazardous waste criteria and health and safety thresholds for construction workers. The soil investigation shall be conducted with oversight from a local or state regulatory agency.	Marin County DPW/Licensed Environmental Professional	Prior to issuance of a grading permit	Marin County DPW	Verified by: Date:

Table 1 *Continued*

Impacts	Mitigation Measures	Implemented By	When Implemented	Monitored By	Verified By and Date
	<u>HAZ-1b</u> : Prior to the initiation of project construction, a project-specific HASP shall be prepared by a certified industrial hygienist that shall include measures to protect construction workers and the general public, if contaminants are identified during the soil sampling recommended in Mitigation Measure HAZ-1a. Such measures shall include monitoring, engineering controls, administrative controls, and security measures to prevent unauthorized entry into the construction area. If prescribed exposure levels for contaminants (see Mitigation Measure HAZ-1a) are exceeded, personal protective equipment shall be required for workers in accordance with state and federal regulations. The HASP shall address the possibility of encountering unknown contamination or subsurface hazards, in addition to emergency response procedures in the event of a hazardous materials release. The project sponsor shall verify that the HASP is incorporated into the construction worker's health and safety programs.	Marin County DPW/ Certified Industrial Hygienist	Prior to issuance of a grading permit	Marin County DPW	Verified by: Date:
	<u>HAZ-1c</u> : If warranted, based on the results of the pre-construction soil characterization (Mitigation Measure HAZ-1a), the County shall implement a Risk Management Plan (RMP) that will identify special soil management and disposal procedures and/or construction worker health and safety procedures (in addition to the HASP) to be implemented during project construction to reduce exposure to hazardous materials. The RMP shall include all necessary procedures to ensure that excavated soils are stored, tested, managed, and disposed of in a manner that is protective of human health and in accordance with applicable laws and regulations. The County shall ensure that the RMP includes available data from any pre-project construction soil sampling activities (Mitigation Measure HAZ-1a). The County shall provide the RMP to construction contractors and ensure that contractors are following the RMP. The RMP shall consider the following requirements:	Marin County DPW/ Construction Contractor	Throughout the construction period	Marin County DPW	Verified by: Date:

Table 1 *Continued*

Impacts	Mitigation Measures	Implemented By	When Implemented	Monitored By	Verified By and Date
	<ul style="list-style-type: none"> Excavation, transportation, and placement operations shall result in no visible dust. A construction "Exclusion Zone" shall be identified where hazardous materials may be stored. A temporary security fence shall be installed to surround and secure the exclusion zone. Air quality shall be monitored during excavation of soils contaminated with hazardous constituents. Storage of hazardous materials shall comply with the requirements in Title 22, CCR, Sections 6626.250 to 66265.260. If temporary stockpiling of hazardous materials is necessary, the construction contractor shall: <ul style="list-style-type: none"> Cover the stockpile with plastic sheeting or tarps. Install a berm around the stockpile to prevent runoff from leaving the area. Locate the stockpile away from storm drain inlets and Lagunitas Creek. Hazardous materials shall be excavated, transported, and disposed in accordance with the rules and regulations of the following agencies: <ul style="list-style-type: none"> United States Department of Transportation (DOT). United States Environmental Protection Agency (EPA). California Environmental Protection Agency (Cal/EPA). California Division of Occupational Safety and Health (DOSH). 				

Table 1 *Continued*

Impacts	Mitigation Measures	Implemented By	When Implemented	Monitored By	Verified By and Date
	<p>– Local regulatory agencies.</p> <p><u>HAZ-1d</u>: The Storm Water Pollution Prevention Plan required as Mitigation Measure HYD-1a shall include Best Management Practices (BMPs) for containing hazardous materials and minimizing the contact of hazardous materials (e.g., fuels, lubricants, paints, solvents, and adhesives) with rain and stormwater runoff, including BMPs for stockpile management.</p>	Marin County DPW/Construction Contractor	Prior to issuance of a grading permit/ Throughout the construction period	Marin County DPW	<p><i>Verified by:</i></p> <p><i>Date:</i></p>
4.8 TRANSPORTATION AND CIRCULATION					
<p><u>TR-1</u>: Project construction activities could increase roadway hazards during the construction period due to the temporary closure of one travel lane, the presence of construction vehicles, and pavement damage created by construction traffic.</p>	<p><u>TR-1</u>: For the proposed project or Option A, prior to construction, the project contractor shall submit a Traffic Management Plan (TMP) to Marin County DPW for review and approval. During construction activities, the Marin County DPW and the project contractors working on the project shall adhere to all requirements of the TMP. Implementation of a TMP would reduce potential impacts to a level of less than significant. The TMP shall include the following:</p> <ul style="list-style-type: none"> The route selection for movement of heavy equipment and truck traffic in the project vicinity shall be coordinated with the Marin County DPW, Marin County Sheriff's Department, and Police Department for applicable cities and unincorporated communities (Lagunitas, Forest Knolls, Woodacre, Olema, Point Reyes Station, Nicasio, San Anselmo, San Rafael, and Fairfax), State Parks, and Golden Gate National Recreation Area to minimize traffic and physical road impacts. Truck drivers shall be notified of and required to use the most direct route between the project site and US 101. Heavy equipment transport, material transportation, or exportation to and from the project site shall not occur during weekday commute peak traffic periods and shall be coordinated by the contractor with the Marin County DPW, Marin County Sheriff's 	Construction Contractor	Throughout the construction period	Marin County DPW/Construction contractor	<p><i>Verified by:</i></p> <p><i>Date:</i></p>

Table 1 *Continued*

Impacts	Mitigation Measures	Implemented By	When Implemented	Monitored By	Verified By and Date
	<p>Department, and relevant city police departments.</p> <ul style="list-style-type: none"> Construction activities shall be coordinated with State Parks, Golden Gate National Recreation, affected cities and communities, and affected property owners to minimize disruption to local traffic. Construction worker parking, material storage, and construction staging areas to the extent possible shall be specified and located within the boundaries of the project site in coordination with State Parks personnel. Warning signs indicating frequent truck entry and exit shall be posted at the main construction points. Flaggers shall monitor and control ingress and egress of large construction vehicles to and from the site as well as lane closures. Debris and mud on nearby streets caused by trucks shall be monitored daily, and a roadway cleaning program shall be instituted as necessary. Westbound construction truck trips shall be prohibited on weekdays between the hours of 7:00 a.m. and 9:00 a.m. Eastbound construction truck trips shall be prohibited on weekdays between 4:00 p.m. and 6:00 p.m. A public information program shall be developed and coordinated with local agencies affected by construction activities and/or road closures. The public information program should include measures to inform the public of planned construction activities using means such as print media, radio, and/or web-based messages and information. 				
TR-2: Construction of the project could result in inadequate emergency access.	TR-2: A schedule of construction activities and the Traffic Management Plan (TMP) prepared per Mitigation Measure TR-1 shall be provided to any	Marin County DPW	Prior to construction	Marin County DPW	<p>Verified by:</p> <p>Date:</p>

Table 1 *Continued*

Impacts	Mitigation Measures	Implemented By	When Implemented	Monitored By	Verified By and Date
	pertinent local emergency service providers, including the Marin County Fire Department, Marin County Sheriff's Department, City of Fairfax Fire and Police Departments, Town of San Anselmo and City of San Rafael Fire and Police Departments, and paramedics.				
TR-3: Construction of the project could affect transit service through the project area during the construction period.	TR-3: Prior to the start of the construction activities, Marin Transit shall be provided with detailed information regarding construction delays to plan a route deviation and/or notify passengers.	Marin County DPW	Prior to construction	Marin County DPW	Verified by: Date:
4.9 AIR QUALITY					
AIR-1: Demolition and construction period activities could generate significant dust, exhaust and organic emissions.	<p>AIR-1: Consistent with guidance from the BAAQMD, the following actions shall be required of construction contracts and specifications for the project.</p> <p><i>Demolition.</i> The following controls shall be implemented during demolition:</p> <ul style="list-style-type: none"> • Water during demolition of structures and break-up of pavement to control dust generation; • Cover all trucks hauling demolition debris from the site; and • Use dust-proof chutes to load debris into trucks whenever feasible. <p><i>Construction.</i> The following controls shall be implemented at all construction sites:</p> <ul style="list-style-type: none"> • All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered as necessary to minimize the generation of dust. • All haul trucks transporting soil, sand, or other loose material off-site shall be covered. • All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited. 	Construction Contractor	Throughout the construction period	Marin County DPW	Verified by: Date:

Table 1 *Continued*

Impacts	Mitigation Measures	Implemented By	When Implemented	Monitored By	Verified By and Date
	<ul style="list-style-type: none"> All vehicle speeds on unpaved roads shall be limited to 15 mph. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Enclose, cover, water twice daily or apply (non-toxic) soil binders to exposed stockpiles (dirt, sand, etc.) Replant vegetation in disturbed areas as quickly as possible. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points. All construction equipment shall be maintained and properly tuned in accordance with manufacture's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation. Post a publicly visible sign with the telephone number and person to contact at the County of Marin regarding dust complaints. This person shall respond and take corrective action within 48 hours. The phone number of the BAAQMD shall also be visible to ensure complaints with applicable regulations. 				
4.10 NOISE					
<u>NOI-1</u> : Construction period activities could create significant short-term noise impacts on noise sensitive receptors in the project area.	<u>NOI-1a</u> : During all construction, the project contractors shall equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers consistent with manufacturers' standards. During construction, the County shall	Construction Contractor	Throughout the construction period	Marin County DPW	Verified by: Date:

Table 1 *Continued*

Impacts	Mitigation Measures	Implemented By	When Implemented	Monitored By	Verified By and Date
	monitor noise levels to ensure they remain below 95 dBA measured 50 feet from the noise source.				
	<u>NOI-1b</u> : The project contractor shall place all stationary construction equipment so that emitted noise is directed away from sensitive receptors nearest the active project site.	Construction Contractor	Throughout the construction period	Marin County DPW	<i>Verified by:</i> <i>Date:</i>
	<u>NOI-1c</u> : The construction contractor shall locate equipment staging in areas that will create the greatest possible distance between construction-related noise sources and noise-sensitive receptors nearest the active project site during all project construction.	Construction Contractor	Throughout the construction period	Marin County DPW	<i>Verified by:</i> <i>Date:</i>
	<u>NOI-1d</u> : The construction contractor shall ensure that all general construction related activities are restricted to Monday through Friday between the hours of 7:00 a.m. and 6:00 p.m. Construction activities shall not be conducted on Saturdays, Sundays and holidays.	Construction Contractor	Throughout the construction period	Marin County DPW	<i>Verified by:</i> <i>Date:</i>
	<u>NOI-1e</u> : The Marin County DPW shall post an information sign at entrances to the construction zones easily visible to the public. The signs shall identify the permitted construction hours and the name, telephone number, and other pertinent contact information and list of responsibilities for the entity responsible for overall construction and noise management. The information signs shall also provide a means for members of the public to receive information about project construction. The County DPW shall record all noise complaints received and actions taken in response. Informational signs shall be posted for the duration of project construction.	Construction Contractor	Throughout the construction period	Marin County DPW	<i>Verified by:</i> <i>Date:</i>
	<u>NOI-1f</u> : The project manager shall be responsible for responding to any local complaints about construction noise. The project manager will determine the cause of the noise complaint (e.g., starting too early, bad muffler, etc.) and will determine and implement reasonable measures warranted to correct the problem.	Construction Contractor	Throughout the construction period	Marin County DPW	<i>Verified by:</i> <i>Date:</i>
4.11 PUBLIC SERVICES AND UTILITIES					
<u>PS-1</u> : Construction of the proposed project would generate waste water and human waste that if not disposed of at the proper	<u>PS-1a</u> : In accordance with Mitigation Measure HYD-1, portable restroom and washroom facilities shall be located 50 feet away from drain inlets to prevent	Construction Contractor	Throughout the construction period	Marin County DPW	<i>Verified by:</i> <i>Date:</i>

Table 1 *Continued*

Impacts	Mitigation Measures	Implemented By	When Implemented	Monitored By	Verified By and Date
facilities, could pose a public health impact.	accidental release of wastewater materials into these areas. A qualified biologist shall be consulted on location of such facilities prior to their placement.				
	PS-1b: Portable restroom and washroom facilities shall have secondary containment placed around them in order to contain wastewater materials in the event that a leak or accidental release should occur.	Construction Contractor	Throughout the construction period	Marin County DPW	Verified by: Date:
	PS-1c: Portable restroom and wastewater facilities shall be monitored, maintained, and emptied on a regular basis to ensure that the facilities continue to function properly.	Construction Contractor	Throughout the construction period	Marin County DPW	Verified by: Date:
4.12 GLOBAL CLIMATE CHANGE					
GCC-1: Construction of the proposed project could generate substantial GHG emissions.	<p>GCC-1: Consistent with draft guidance from the BAAQMD, the following best management practices shall be required of construction contracts and specifications for the project.</p> <ul style="list-style-type: none"> Alternative-fueled (e.g., biodiesel, electric) construction vehicles/equipment of at least 15 percent of the fleet, as feasible; Local building materials (within 100 miles) of at least 10 percent; and Recycle at least 50 percent of construction waste or demolition materials. 	Marin County DPW	Prior to issuance of a grading permit	Marin County DPW	Verified by: Date:

Source: LSA Associates, Inc., 2009.