

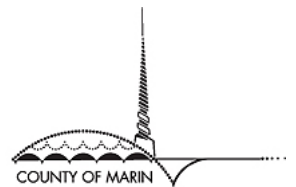
Sir Francis Drake Boulevard Improvement Project

POINT REYES NATIONAL SEASHORE
CA FLAP CR 109(1)
MARIN COUNTY, CA

ENVIRONMENTAL ASSESSMENT WITH FINDING OF NO SIGNIFICANT IMPACT AND / INITIAL STUDY WITH MITIGATED NEGATIVE DECLARATION



Prepared For:



U.S. Department of Transportation
Federal Highway Administration
Central Federal Lands Highway Division
Lakewood, Colorado

August 26, 2015

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U.S. Department of Transportation
Federal Highway Administration
Central Federal Lands Highway Division

In Cooperation with

Marin County, California
and
The National Park Service

ENVIRONMENTAL ASSESSMENT WITH FINDING OF NO
SIGNIFICANT IMPACT AND INITIAL STUDY WITH MITIGATED
NEGATIVE DECLARATION

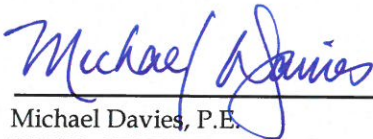
Submitted Pursuant to:

(Federal) 42 U.S.C. 4332(2)(c)
(State) Division 13, California Public Resources Code
for
Sir Francis Drake Boulevard Improvement Project
CA FLAP CR 109(1)
Marin County, CA

Additional information may be obtained from the following individuals:

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Michael Davies, P.E.
FHWA-CFLHD Director of Project Delivery

8/27/2015
Date

Ernest Klock
Marin County Principal Civil Engineer

Date

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WHAT'S IN THIS DOCUMENT

The Federal Highway Administration (FHWA) Central Federal Lands Highway Division (CFLHD), with Marin County and the National Park Service, has prepared the Sir Francis Drake Boulevard Improvement Project Environmental Assessment/Initial Study (EA/IS), which examined the potential environmental impacts of the alternatives being considered for Sir Francis Drake Boulevard located in Point Reyes National Seashore, California. This document describes why the Sir Francis Drake Boulevard Improvement Project is being proposed, alternatives for the project, the existing environment that could be affected by the project, the potential impacts from each of the alternatives, and the proposed avoidance, minimization and/or mitigation measures.

CFLHD is the lead agency for the National Environmental Policy Act (NEPA) compliance and Marin County is the lead agency for the California Environmental Quality Act (CEQA) compliance. A Finding of No Significant Impact (FONSI) and Mitigated Negative Declaration are enclosed. The EA/IS circulated for public review as well as a summary of the public and agency review process and comments received are also enclosed. Any updates to the environmental document are included in the enclosed errata. Three appendices have been added to the document. Appendix H contains all the comments received from individuals and agencies on the environmental document during the public review period, as well as responses to those comments. Appendix I contains documentation of agency coordination to satisfy CFLHD's obligations under Section 4(f) of the U.S. Department of Transportation Act of 1966. Appendix J contains the Mitigation Monitoring and Reporting Program.

In cooperation with CFLHD, the NPS developed a separate plan/EA, titled *Road Improvement and Maintenance Projects*, in 2014 to repair 22 miles of roads and adjacent parking areas in PRNS. That plan includes Lighthouse Road and Chimney Rock Road, which are both accessed via SFDB at the southern end of the Sir Francis Drake Boulevard Improvement Project study area. Although both plans focus on road improvements on the Point Reyes Peninsula, they are different and separate projects. The *Road Improvement and Maintenance Projects* plan is discussed in more detail in Section 3.18 Cumulative Impacts, below. That plan can also be found on the NPS PEPC Planning, Environment & Public Comment web site, which can be accessed from the park's web site (http://www.nps.gov/pore/getinvolved/planning_current.htm).

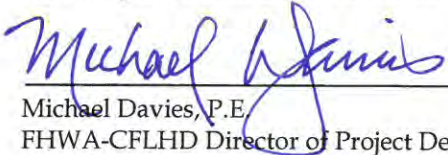
For individuals with sensory disabilities, this document can be made available in Braille, large print, on audiocassette, or on computer disk. To obtain a copy in one of these alternate formats, please call or write to Nathan Allen at (720) 963-3668 or 12300 West Dakota Ave., Ste. 280, Lakewood, CO 80228.

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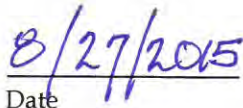
U.S. Department of Transportation
Federal Highway Administration
Central Federal Lands Highway Division
FINDING OF NO SIGNIFICANT IMPACT
for
Sir Francis Drake Boulevard
Improvement Project
POINT REYES NATIONAL SEASHORE
CA FLAP CR 109(1)
MARIN COUNTY, CA

This Finding of No Significant Impact is submitted pursuant to:
42 U.S.C. 4332 (2)(c)

The Federal Highway Administration (FHWA), Central Federal Lands Highway Division, has determined that this project, for which the Preferred Alternative has been selected, will have no significant impact on the human or natural environment. Principal areas of public controversy have been addressed, and there are no major unresolved issues outstanding. This finding is based on the attached Environmental Assessment, coordination with local and Federal agencies, public involvement, and applicable laws, executive orders, and regulations. The Environmental Assessment, with revisions contained herein, accurately and adequately discusses the need, environmental issues, and impacts of the proposed project and appropriate mitigation measures. It lists environmental commitments to be carried out by the FHWA in order to minimize unavoidable impacts. The Environmental Assessment provides sufficient evidence and analysis for determining that an Environmental Impact Statement is not required. The Federal Highway Administration takes full responsibility for the accuracy, scope, and content of the following Environmental Assessment.



Michael Davies, P.E.
FHWA-CFLHD Director of Project Delivery



Date

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MITIGATED NEGATIVE DECLARATION

Marin County

Environmental Coordination and Review

Pursuant to Section 21000 et. seq. of the Public Resources Code and Marin County Environmental Impact Review Guidelines and Procedures, a Negative Declaration is hereby granted for the following project.

1. Project Name:

Sir Francis Drake Boulevard Improvement Project

2. Location and Description:

The Federal Highway Administration (FHWA) Central Federal Lands Highway Division (CFLHD), in cooperation with Marin County and the National Park Service (NPS), is proposing improvements to Sir Francis Drake Boulevard (SFDB) in Point Reyes National Seashore (PRNS). The project includes improvements to approximately 12 miles of SFDB. The project begins at the intersection with Pierce Point Road and continues south and west to the intersection with Chimney Rock Road.

Proposed improvements consist of resurfacing, restoring, and rehabilitating SFDB in a manner that will closely follow the existing roadway in order to minimize impacts to the natural terrain. In general, the project would widen the roadway 1 to 6 feet to maintain a consistent 24-foot width with two 11-foot travel lanes and 1-foot shoulders. The total pavement width would be 4 to 8 feet less than published NPS and American Association of State Highway and Transportation Officials (AASHTO) guidelines for the designated roadway classification. The proposed width is intended to allow much of the construction to occur within the existing roadway bench and the existing Marin County easement while providing a rehabilitated pavement section.

Roadway widening would include pulverizing the existing asphalt pavement, overlaying with 4 inches of asphalt pavement, striping, and ditch reconditioning (regrading with dense vegetation removal as needed). Paved ditches between 2 and 4 feet wide with asphalt curbs are proposed in specific areas to minimize cut slopes, which would minimize overall ground disturbance. Existing 15- and 18-inch culverts within the project area would generally be replaced with 24-inch culverts where feasible. At existing pullouts along the project corridor, a 5-foot asphalt apron (edge) would be added over the existing aggregate surface, and some pullouts would be resurfaced with aggregate. The clear zone, which is the area available for safe use by errant vehicles, would be improved through removal of obstructions, as feasible. The clear zone would vary between 3 feet wide and the AASHTO minimum design standard width of 12 feet in order to minimize ground disturbance.

3. Project Sponsor:

Marin County is the lead agency for compliance with the California Environmental Quality Act (CEQA).

4. Finding:

Based on the attached Initial Study and without a public hearing, it is my judgment that:

☐ The project will not have a significant effect on the environment.

- ☒ The significant effects of the project noted in the Initial Study attached have been mitigated by modifications to the project so that the potential adverse effects are reduced to a point where no significant effects would occur.

_____ Date: _____

Environmental Planning Manager

Based on the attached Initial Study and the testimony received at a duly noticed public hearing, a Negative Declaration is granted.

_____ Date: _____

Chairperson, Planning Commission

_____ Date: _____

Hearing Officer

_____ Date: _____

President, Board of Supervisors

1. Mitigation Measures:

- ☐ No potential adverse impacts were identified; therefore, no mitigation measures are required.
- ☒ Please refer to mitigation measures in the attached Environmental Assessment/Initial Study.
- ☐ The potential adverse impacts have been found to be mitigable as noted under the following factors in the Initial Study attached.

All of the mitigation measures for the above effects have been incorporated into the project and are embodied in conditions of approval recommended by the Marin County Department of Public Works.

Other conditions of approval in support of these measures may also be advanced.

2. Preparation:

This Negative Declaration was prepared by Jacobs Engineering, Inc., under the supervision of Ernest Klock, Principal Civil Engineer of the Marin County Department of Public Works. Copies may be obtained at the address listed below.

Marin County Department Public Works
3501 Civic Center Drive, Suite 404
San Rafael, CA 94903
(415) 473-4399
Monday-Friday, 8:00 a.m. to 5:00 p.m.

PUBLIC REVIEW OF ENVIRONMENTAL DOCUMENT

This EA/IS was circulated for public and agency review for a 30-day period from July 15 to August 13 2015. The draft document was available for review online at <http://parkplanning.nps.gov/projectHome.cfm?projectID=53489> and at the following locations: Point Reyes Public Library (11435 CA-1, Point Reyes Station, CA) and Civic Center Library (3501 Civic Center Drive, Room 427, San Rafael, CA). Written comments were accepted via mail at SFDB Improvement Project EA c/o Superintendent, Point Reyes National Seashore, 1 Bear Valley Road, Point Reyes National Seashore, CA 94956 as well as hand delivery to the Seashore Headquarters at 1 Bear Valley Road, Point Reyes Station. Comments were also accepted through the National Park Service Planning, Environment, and Public Comment (PEPC) website: <http://parkplanning.nps.gov/PORE>.

A Notice of Completion was prepared and submitted to the California State Office of Planning and Research State Clearinghouse pursuant to CEQA on July 14, 2015. Notices of availability of the EA/IS and Proposed MND were published in the Marin Independent Journal on July 15, 2015. A total of 15 individuals, four private organizations, and two state agencies submitted comments on the EA/IS. Three commenters expressed support for the project; one rancher requested cattle under-crossings at Historic B Ranch; and 15 commenters expressed concern regarding access and safety for birdwatching near Historic A Ranch and Historic B Ranch. The California Department of Fish and Wildlife (CDFW) submitted a letter noting clarifications and topics to be addressed in the EA/IS. The California Department of Transportation submitted a letter noting that a Transportation Management Plan may be required if traffic restrictions or detours during construction would affect State Route 1. These comments and responses to each comment are presented in Appendix H.

ERRATA

The following corrections and revisions apply to the Environmental Assessment (EA) and Initial Study (IS) for the Sir Francis Drake Boulevard Improvement Project. The EA/IS was released for a 30-day public review on July 14, 2015. These changes do not change the conclusions of the EA/IS but serve to correct errors or clarify points in the document. Table 1 lists the corrections and revisions to the EA/IS text. Text strikethroughs indicate text that has been deleted (e.g., ~~deleted text~~). Underlined text indicates added text (e.g., new text). Clarifications for text corrections and/or revisions are provided as needed in italicized text.

Table 1: Text Corrections and Revisions to the EA/IS

Chapter/Section/ Table	Page No.	Text Revisions						
Section 2.1.2.1	12	Construction is anticipated to occur over two construction seasons in order to accommodate environmental timing restrictions and seasonal constraints. At least one lane of traffic would remain open during construction with a maximum 30-minute delay. If any delay longer than 30 minutes is anticipated to accomplish specific construction activities, then notice must be provided to PRNS staff, ranchers, the public, relevant local agencies, the school district, and emergency service providers. All construction would occur on weekdays, <u>unless prior approval is obtained for weekend work, and during daylight hours.</u>						
Table 1	15	<p><i>Revise row 5 as follows to account for potential incidental take of Point Reyes meadowfoam, a California endangered species:</i></p> <table border="1"> <tr> <td>California Department of Fish and Wildlife</td><td>Section 2080.1 Agreement for threatened and endangered species that are both state and federally listed</td><td>Section 2080.1 agreement anticipated August 2015 and a California Endangered Species Act Permit will be obtained following NEPA and CEQA decision documents</td></tr> <tr> <td></td><td>California Endangered Species Act Permit for take of state-listed species</td><td></td></tr> </table>	California Department of Fish and Wildlife	Section 2080.1 Agreement for threatened and endangered species that are both state and federally listed	Section 2080.1 agreement anticipated August 2015 and a California Endangered Species Act Permit will be obtained following NEPA and CEQA decision documents		California Endangered Species Act Permit for take of state-listed species	
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	California Endangered Species Act Permit for take of state-listed species							
Chapter 3	17	In addition, the EA/IS will serve to support that <u>as the consistency determination for the proposed project in accordance is conceptually in conformance with the California Coastal Management Program. Following issuance of a decision document under NEPA and CEQA, CFLHD will submit a consistency determination, with a request for concurrence from the California Coastal Commission, as required by the federal Coastal Zone Management Act (CZMA) of 1972.</u>						
Section 3.1.6	19	<p><i>The following text is added to the end of this section describing new information regarding archeological resources in the project area:</i></p> <p><u>Subsequent to the archaeological survey conducted for the project, and the review and approval of the study report by the NPS and CFLHD, a previously unknown archaeological site, PORE00037, was identified within the vicinity of the Project's area of potential effect (APE). Lithic artifacts were first observed by the park's wetland ecologist, and follow up survey and site recording was conducted by PRNS staff. The PRNS prepared a memo and site record to alert CFLHD of the site's presence and provide descriptive information about the site and its relationship to the project. CFLHD included the PRNS memo and site record in its resubmittal to the SHPO seeking concurrence in a No Adverse Effect finding for the undertaking. CFLHD's letter to SHPO, dated August 19, 2015, is included in Appendix A.</u></p> <p><u>PORE00037 consists of a low density lithic scatter extending across an extensive area. The site also includes two loci characterized by a low density surface scatter of marine shell. The documented site boundary of PORE00037 crosses SFDB at two locations. At the eastern intersection with SFDB, no cultural materials were observed within 40 meters of the SFDB roadway; rather, the site boundary joins surface deposits seen on both sides of the roadway outside of the project's APE. At the western intersection with SFDB, Locus 2 occurs within the project's APE. Locus 2 is a low density scatter of marine shell on either side of the road where a cattle underpass crosses under the road. The observed marine shell was fragmentary but both clam and oyster shell appeared to be represented. Based on the distribution of the marine shell, it seems that the relatively light deposit of marine shell was likely disturbed by the construction of the roadway and cattle underpass, and further disturbed by high winds and shifting sands. A series of six auger units were conducted by the PRNS to determine if more substantial deposits may occur below the surface at Locus 2 but no cultural materials were encountered.</u></p>						

Chapter/Section/ Table	Page No.	Text Revisions
		<u>Based on the PRNS investigation and documentation of PORE00037, CFLHD made the determination that cultural deposits associated with PORE00037 Locus 2 within the APE for the proposed undertaking lack integrity and do not support eligibility of the resource. The eligibility of the resource outside the project APE remains unevaluated and will not be impacted by the project. Temporary protective fencing is already included in the project design to delineate construction activities around the cattle crossing, including the area where the PORE00037 site boundaries intersect with the project. No additional avoidance or mitigation measures for PORE00037 are necessary.</u>
Section 3.2.2.3	23	SFDB also provides access to roads that serve a <u>historic</u> wireless telegraphy receiving station (RCA station), a Coast Guard communications center and historic cemetery, and the Drakes Bay Oyster Company (now closed and planned to be <u>will be referred to as Drakes Estero</u> , which is managed as wilderness by the NPS).
Section 3.2.4	25	<ul style="list-style-type: none"> ▪ <u>All eConstruction shall occur on weekdays. If weekend work is proposed, the contractor shall provide notification to the Contract Oversight Engineer two weeks prior to the proposed work. No weekend work shall be conducted without Contract Oversight Engineer approval.</u> ▪ <u>Construction shall only occur during daylight hours (1/2 hour after sunrise to 1/2 hour before sunset).</u>
Section 3.4.2.1	32	<i>Add the following text below the second bullet:</i> <u>In addition to the designated recreation sites discussed above, many birdwatchers frequent PRNS. Within the study area, birdwatchers use informal, undesignated pullouts near Historic A Ranch and Historic B Ranch to view migrant and vagrant birds within the windbreaks.</u>
Section 3.4.2.2	32	Visitation at the park varies with the seasons. Over the past 10 years (2004 through 2013), the park's highest visitation has occurred during the months of July through September, primarily on weekends (NPS n.d.a). Gray whale migration also draws visitors from December through April. President's Day weekend in February is popular because it often coincides with the peak whale watching season, and is typically a weekend when both locals and San Francisco Bay Area visitors come to Point Reyes (Nelson/Nygaard 2009, NCPA 2009). <u>Visitors also come to the Headlands area of PRNS to birdwatch, particularly in fall/winter during migration (pers. com. Dell'Osso 2015).</u>
Section 3.4.3.2	33–34	<p><i>Based on public comments received concerning impacts to recreational birdwatchers, the following revisions were made to the Action Alternative analysis:</i></p> <p>The Action Alternative would improve the convenience, safety, and reliability of SFDB for access to park visitor centers and other popular destinations in PRNS. Resurfacing and rehabilitating the road would preserve this highly traveled transportation route for continued visitor use. Improved sight distance, widened shoulders, and curve modifications would enhance safety. In addition, raising and realigning the roadway between PM 9 and PM 10 would improve safety in this area where accidents are most common. Roadway closures due to flooding would also be less likely, thereby providing a more reliable transportation route for park visitors. Resurfacing and widening the shoulders would improve safety and riding experience for cyclists, which may encourage more cyclists to visit the park. Improvements to <u>existing designated pullouts</u> would provide safer areas for visitors to pull over while safely allowing traffic to pass. <u>However, widening the roadway would also reduce the size of informal, undesignated roadside pullouts near Historic A Ranch and Historic B Ranch that are used as parking by birdwatchers. While this may reduce the potential capacity of these sites, no barriers or curbs are proposed adjacent to these areas that would limit access to the area or preclude birdwatchers from using the informal roadside pullouts. In addition, no impacts to the windbreaks that draw birdwatchers would occur, and protective measures, such as fencing, would be implemented during construction to avoid inadvertent impacts to the windbreaks. For these reasons, impacts to recreational birdwatchers is anticipated to be negligible and, overall, the roadway improvements proposed under the Action Alternative would have long term beneficial impacts for park visitors accessing the destinations served by SFDB.</u></p>

Chapter/Section/ Table	Page No.	Text Revisions
		Short-term, adverse impacts would occur during construction. Project construction could coincide with peak visitation (July through September), and construction-related delays could discourage some people from visiting the peninsula. However, such delays would <u>primarily</u> occur during weekdays, when visitation is lower, and for short periods of time. In addition, at least one lane of traffic would remain open during construction with a maximum 30-minute delay, as described under Avoidance, Minimization, and/or Mitigation Measures, below. <u>Access to the informal, undesignated roadside pullouts near Historic A Ranch and Historic B Ranch may also be restricted during periods of construction, but this would be short term in nature and would not persist throughout construction.</u>
Section 3.4.3.2	34	Conclusion Impacts to recreation and visitor use would be beneficial, as the Action Alternative would improve the convenience, safety, and reliability of SFDB for access to park visitor centers and other popular destinations in PRNS, including <u>existing designated</u> roadside pullouts. The Action Alternative would also support provisions of the California Coastal Act. Short-term, adverse impacts that would occur during construction will be minimized with implementation of measures described below.
Section 3.4.4	34	<ul style="list-style-type: none"> ▪ <u>All</u> eConstruction shall occur on weekdays. <u>If weekend work is proposed, the contractor shall provide notification to the Contract Oversight Engineer two weeks prior to the proposed work. No weekend work shall be conducted without Contract Oversight Engineer approval.</u> ▪ Construction shall only occur during daylight hours (1/2 hour after sunrise to 1/2 hour before sunset).
Section 3.5.5	42	<i>The text in this section has been updated to reflect the current status of SHPO consultation:</i> The request for concurrence on eligibility and effect determinations was transmitted to SHPO along with the cultural report prepared for this project on July 3, 2015 (cover letter included in Appendix A). Coordination with SHPO is ongoing and will be completed prior to issuance of decision documents. In a letter dated July 1, 2015 (See Appendix A), the California SHPO was consulted on FHWA's determination that the proposed project would have no adverse effect on historic properties. On August 7, 2015, the SHPO requested additional information. FHWA responded to the SHPO request on August 19, 2015 (See Appendix A). The information supplied did not alter the determination of no adverse effect to historic properties. CFLHD anticipates SHPO concurrence with this finding by September 19, 2015. Once concurrence from the SHPO under Section 106 of the National Historic Preservation Act is received, the <i>de minimis</i> coordination requirements in 23 CFR 774 will have been met. As such, it is anticipated that FHWA will make a <i>de minimis</i> determination and that an analysis of feasible and prudent avoidance alternatives under Section 4(f) is not required.
Section 3.6.3.2	49	Construction of proposed improvements would result in temporary visual changes, including views of construction equipment operations, dust, increased construction worker traffic, and construction signage. All construction would occur on weekdays during daylight hours.
Section 3.7.3.2	52	The noise levels presented in Table 4 represent maximum noise levels at varying distances adjusted for time-usage factors and would not be continuous noise sources. Construction equipment use would be intermittent throughout the course of a normal work period. The entire construction period for the Action Alternative is anticipated to last approximately 18 months, although construction would be suspended as necessary during the rainy season. Construction activities would be temporary and would occur during weekday daytime hours <u>only and primarily on weekdays, unless prior authorization is obtained.</u>
Section 3.7.4	53	<ul style="list-style-type: none"> ▪ <u>Construction shall occur on weekdays. If weekend work is proposed, the contractor shall provide notification to the Contract Oversight Engineer two weeks prior to the proposed work. No weekend work shall be conducted without Contract Oversight Engineer approval.</u> ▪ <u>Construction shall occur during daylight hours (1/2 hour after sunrise to 1/2 hour before sunset).</u>
Section 3.11.1	65	<i>Records reviews were completed, as noted in the EA/IS, and no sites were initially found based on records searches. For these reasons and</i>

Chapter/Section/ Table	Page No.	Text Revisions
		<p><i>based on discussions with PRNS staff, no Initial Site Assessment was completed; however, a reconnaissance survey was conducted that identified one site as discussed in the EA/IS. Based on a public comment concerning a potential aboveground storage tank within the study area, further coordination efforts were completed with the Regional Water Quality Control Board and Marin County. Based on these efforts, the following revisions were made:</i></p> <p>Environmental regulatory records were reviewed to evaluate whether the Action Alternative corridor or nearby properties have faced, or are currently facing, any regulatory actions, fines, or notices of violation for conditions that may have an environmental impact on the project. The following records were reviewed: California Department of Toxic Substances Control Envirostor Database, California Environmental Protection Agency Cortese List Data Resources, and Environmental Protection Agency My Maps for My Environment. Additionally, the Regional Water Quality Control Board and Marin County were contacted. No <u>Seven listed</u> sites in or near the study area were listed <u>identified</u> in the regulatory records reviewed for the Action Alternative.</p> <ul style="list-style-type: none"> ▪ Point Reyes Lighthouse, Point Reyes Gunnery Range, Point Reyes Dat & Access Road – These sites are listed in the Military Evaluation database and are located at least one mile from the proposed improvements. <u>No further action is required for these sites.</u> ▪ NPS, North District Operations Center – This site is located at 17400 Sir Francis Drake Boulevard, adjacent to the proposed improvements. <u>This site is listed as a leaking underground storage tank cleanup site. Site assessments and groundwater monitoring and sampling have been conducted on-site. The leaking underground storage tank and monitoring wells on site are located approximately ¼ mile north to northwest from the proposed improvements. The groundwater flows in a westerly direction towards the ocean and away from the proposed improvements. The monitoring report in 2010 recommended case closure. Due to on-going remediation and the groundwater flow away from the project, this site is not likely to impact the project.</u> ▪ NAT Park Service Grossi Ranch – This site is located at 15000 Sir Francis Drake Boulevard, adjacent to the proposed improvements. <u>This site is listed in the leaking underground storage tank database. However, remediation is complete and the case was closed in 2000. No further action is required for this site at this time.</u> ▪ California Department of Parks and Recreation – This site is located along Pierce Point Road and appears to be located within the study area. <u>This site is listed in the underground storage tank database as having one permitted underground storage tank. There have been no reported violations for this site.</u> ▪ US Coast Guard, CAMSPAC – Receiver – This site is located at 17000 Sir Francis Drake Boulevard, adjacent to the proposed improvements. <u>This site is listed in the Marin County database as having an active aboveground storage tank. There have been no reported violations for this site.</u>
Section 3.11.2	66	One aboveground storage tank was observed along the access road/driveway adjacent to the Nunez Family Farm Ranch A.
Section 3.11.3.2	66–67	<p>Based on the environmental database research, contact with the Regional Water Quality Board and Marin County, review of historic maps, and site reconnaissance of the study area, <u>seven listed sites and only one de minimis REC site are</u> is located on sites within or near the study area. The seven listed sites identified have no further action required, no violations reported, or are not likely to pose a risk to the proposed project. As stated above, <i>de minimis</i> findings generally do not pose a risk that would be subject of an enforcement action.</p> <p>Although <u>no listed sites were identified as a potential risk to the proposed project and only one de minimis finding was identified during the field reconnaissance, contamination could still be encountered during construction activities. Therefore, construction personnel will be trained</u></p>

Chapter/Section/ Table	Page No.	Text Revisions
		<p><u>to recognize signs of possible contamination in soil such as odors and staining.</u></p> <p>Conclusion <u>Seven listed sites and Only one de minimis REC site are is located on sites within or near the study area. The seven listed sites identified in regulatory databases have no further action required, no violations reported, or are not likely to pose a risk to the proposed project. As stated above, de minimis findings generally do not pose a risk that would be subject of an enforcement action. With the implementation of the avoidance, minimization, and mitigation measures listed below, no significant impacts would occur.</u></p>
Section 3.11.4	67	<ul style="list-style-type: none"> During Worker Environmental Awareness Training, <u>construction supervisor personnel shall be trained to recognize signs of possible contamination in soil such as odors and staining. Supervisors shall be responsible for training construction staff. Handouts shall be provided to aid construction workers in issue identification.</u>
Section 3.11.4	67	<ul style="list-style-type: none"> The contractor shall test the <u>Demolition would be required during construction for cattle under-crossings and culverts for asbestos prior to demolition. It is not anticipated that asbestos-containing materials would be encountered. However, p</u>Per the requirements of Regulation 11, Rule 2 (Asbestos Demolition, Renovation, and Manufacturing), <u>if asbestos-containing material is identified, the contractor shall provide a written plan or notification of intent to the Bay Area Air Quality Management District's Enforcement Division and Air Pollution Control Officer prior to commencing demolition of structures.</u>
Section 3.12.4	70	<ul style="list-style-type: none"> The contractor shall control dust within the construction limits in accordance with Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects (referred to as FP-03) Section 158, FP-03 Section 312, and applicable state and federal regulations.
Section 3.13.3.2	75	<p>The Action Alternative would initially result in substantial adverse effects to wetlands and other waters of the U.S. However, with the implementation of a mitigation and monitoring plan for permanent and temporary impacts to wetlands, other waters of the U.S., and riparian habitat, these impacted areas would be restored and/or mitigated such that impacts are ultimately expected to be short-term and minimal. Overall, the Action Alternative would result in no net loss of wetlands through the implementation of <u>on-site and/or off-site compensatory mitigation.</u></p>
Section 3.13.4	76	<p>Work in Schooner Creek, East Schooner Creek, and unnamed drainages between PM 9 and PM 12 shall be conducted during no- to low-flow periods of the year <u>(June 15 July 1 to October 15 or the first significant fall rainfall; i.e., 0.2 inches over a 24-hour period).</u></p>
Section 3.13.4	76	<p>CFLHD shall compensate for the permanent loss of jurisdictional features through <u>purchase of mitigation credits at an approved wetland mitigation bank and/or creation of wetland and riparian compensatory mitigation.</u></p>
Section 3.14.4	80	<ul style="list-style-type: none"> Certified weed-free permanent and temporary erosion control measures shall be used to minimize erosion and sedimentation during and after construction according to the contract erosion control plan, contract permits, FP-03 Section 107 and FP-03 Section 157.
Section 3.15.2	84	<p>The diversity of ecosystems within PRNS supports a wide variety of wildlife and plant species, including special status species. Information on special status species within the study area was obtained through literature review, GIS data review, and coordination with the USFWS, NMFS, NPS, CDFW, and Marin County. The results of this initial data collection was the identification of 37 special status wildlife species, 84 special status plant species, and six sensitive natural communities that could potentially occur within the study area. Further review of habitat requirements and occurrence data determined that four sensitive natural communities and <u>35 36</u> special status species, consisting of <u>43 14</u> birds, two fish, one amphibian, one reptile, one invertebrate, six mammals, and 11 plant species, occur or have the potential to occur within the study area (see Table 10).</p>

Chapter/Section/ Table	Page No.	Text Revisions			
Table 10	84	<p>Add the following row under "Birds":</p> <table border="1"> <tr> <td>California Black Rail (<i>Laterallus mamaicensis</i> <i>contumiculus</i>)</td><td>ST, SFP</td><td>Inhabits freshwater marshes, wet meadows, and shallow margins of saltwater marshes bordering larger bays. Needs water depth of 1 inch that does not fluctuate during the year and dense vegetation for nesting habitat (CDFW 2014b).</td></tr> </table>	California Black Rail (<i>Laterallus mamaicensis</i> <i>contumiculus</i>)	ST, SFP	Inhabits freshwater marshes, wet meadows, and shallow margins of saltwater marshes bordering larger bays. Needs water depth of 1 inch that does not fluctuate during the year and dense vegetation for nesting habitat (CDFW 2014b).
California Black Rail (<i>Laterallus mamaicensis</i> <i>contumiculus</i>)	ST, SFP	Inhabits freshwater marshes, wet meadows, and shallow margins of saltwater marshes bordering larger bays. Needs water depth of 1 inch that does not fluctuate during the year and dense vegetation for nesting habitat (CDFW 2014b).			
Section 3.15.3.2	90	<p>All of the special status bird species have overlapping habitat within the study area, and the Action Alternative would have similar effects on the species. Permanent and temporary vegetation disturbance, noise and vibration from construction, as well as visual disturbances from increased project-related activity, could affect individual special status bird species if present. Vegetation removal throughout the project construction limits could degrade habitat for bird species and reduce cover, structure, and shading for them. Primary impacts to special status bird species habitat would include the permanent and temporary removal of wetlands, trees, and riparian habitat. However, existing habitat within the study area for these species is of low quality because of its proximity to the roadway, frequency of human disturbance, and the lack of adequate nesting habitat for raptors (e.g., trees, snags, etc.). Reseeding and revegetation is planned for the areas affected, although trees and shrubs would not likely return to the original condition for several years. To reduce the likelihood that breeding and nesting birds would be impacted during construction, vegetation removal would be conducted outside the nesting season (February 1–July 31). <u>If vegetation would be removed between February 1 and July 31, pre-construction surveys will be completed to identify active nests and roosts and, if identified, a no-disturbance buffer will be implemented (see Section 3.15.4). In addition, wetlands would be mitigated at a 1.5:1 (acres replaced to acres impacted) ratio or higher through on-site or off-site mitigation within PRNS, or a combination of both.</u></p>			
Section 3.15.3.2	90	<p>Based on an agency comment, it was noted that the state-listed California black rail was not included in the analysis. This was in error, and impacts to the rail were assessed in the biological evaluation prepared for the project. General project effects, and the effects described for special status bird species, are also applicable to the California black rail. Therefore, the text was revised as follows:</p> <ul style="list-style-type: none"> ▪ <u>With the implementation of avoidance, minimization and mitigation measures,</u> the Action Alternative may impact individual species, but is not likely to result in a trend toward federal listing or loss of viability of: <ul style="list-style-type: none"> ▪ Tricolored blackbird ▪ Yellow warbler ▪ Saltmarsh common yellowthroats ▪ Golden eagle ▪ Burrowing owl ▪ Swainson's hawk ▪ California black rail ▪ Northern harrier ▪ White-tailed kite ▪ Cooper's hawk ▪ Sharp-shinned hawk ▪ Bald eagle ▪ Osprey ▪ <u>With the implementation of avoidance, minimization and mitigation measures,</u> the Action Alternative may affect, but is not likely to adversely affect, northern spotted owl. ▪ <u>With the implementation of avoidance, minimization and mitigation measures,</u> the Action Alternative would not result in a "take" of California black rail, as defined by the California Endangered Species Act. 			

Chapter/Section/ Table	Page No.	Text Revisions
Section 3.15.3.2	96–97	<p><i>Based on an agency comment concerning impacts to Point Reyes meadowfoam, potential impacts to the meadowfoam were elaborated upon as follows:</i></p> <p>With regard to the state-listed Point Reyes meadowfoam, <u>there are fewer than 15 populations known from Marin and San Mateo Counties. Impacts would occur to a portion of three separate populations along the peninsula between approximately PM 1.0 and PM 3.0. Impacts would result from roadway widening and/or installation of paved ditches (permanent impacts) and potential trampling by equipment and foot traffic during construction (temporary impacts). In addition, minor changes in roadway superelevation (raised outside edge of a roadway curve) near PM 1.2 and PM 2.0 may result in changes in the hydroperiod (e.g., seasonal water levels) for two of the populations. Changes in hydroperiod have the potential to indirectly impact the populations. However, considerations were made to reduce hydroperiod impacts to the populations, particularly in the location of PM 1.2, where a culvert originally proposed for upsizing will be replaced in-kind in order to maintain current hydrologic conditions onsite.</u></p> <p><u>Based on a review of corresponding population data from the California Natural Diversity Database and NPS at each impact location, these populations range between 12 and 82 acres in size. Therefore, the impacts of the project to these populations would represent a very small percentage of the presumed population—accounting for less than 0.1 percent of each population. In addition, based on field surveys and a review of aerial photography, it is presumed that the population located near PM 1.2 receives water from several sources, including roadside runoff, hillslope seepage, and ponding from an erosional gully at the culvert inlet near the population. Furthermore, the Action Alternative would be designed to perpetuate hydrologic conditions to the greatest extent practicable. A more detailed assessment of impacts will be determined through final design and consultation with CDFW. If impacts to Point Reyes meadowfoam cannot be fully avoided during final design, a California Endangered Species Act permit for take of Point Reyes meadowfoam will be obtained from CDFW prior to construction.</u></p>
Section 3.15.4	98	<ul style="list-style-type: none"> ▪ The contractor shall ensure that food scraps and other trash from the project are deposited in covered or closed trash containers. The trash containers shall be removed from the project site <u>stored and secured at the end of each working day to prevent wildlife access.</u>
Section 3.15.4	100	<ul style="list-style-type: none"> ▪ A biological monitor shall be present on site to monitor for California red-legged frog during construction <u>within suitable aquatic breeding habitat areas, including any drainage or identified wetland within the project area.</u> The monitor shall be approved by the USFWS at least 15 days before construction begins. Credentials and experience must be supplied to the USFWS. ▪ A USFWS-approved biologist shall search all suitable <u>aquatic breeding habitat areas within the proposed construction limits, including within 300 feet of any drainage or identified wetland within the project area, for California red-legged frogs, prior to project activities each day and after rain events, and shall be present on site during all project activities. The approved biologist shall have the authority to stop any work that may result in the take of any California red-legged frogs. Specifically, surveys will occur during the following periods: one time prior to initial groundbreaking activities; daily during the initial ground disturbing phase of construction; daily during rainy periods; and periodically during the remaining times.</u>
Section 3.15.4	101	<ul style="list-style-type: none"> ▪ A qualified botanist shall conduct <u>a preconstruction surveys of the construction limits for western dog violet plants within one year prior to project implementation. Preconstruction surveys shall be conducted within the blooming period between April and August. Identified plant populations shall be marked prior to project construction for avoidance during construction. If a plant population(s) cannot be feasibly avoided, individual plants shall be relocated by a qualified botanist to a location adjacent to the project disturbance limits.</u>

Chapter/Section/ Table	Page No.	Text Revisions
Section 3.15.4	103	<ul style="list-style-type: none"> ▪ <u>CFLHD shall comply with the conservation measures set forth by the National Marine Fisheries Service as a result of informal Section 7 consultation.</u> ▪ <u>CFLHD shall comply with the terms and conditions of the California Endangered Species Act incidental take permit for Point Reyes meadowfoam.</u>
Section 3.17.3.2	109	Construction of the Action Alternative would require permanent and temporary disturbance of vegetation in order to construct a consistent 24-foot-wide paved roadway, as well as implement localized improvements, such as realignment of the roadway within the flood-prone area. In addition, the Action Alternative would involve clearing and grubbing of vegetation adjacent to the roadway (between 3 feet and 12 feet from the proposed edge of pavement). Soil removal, grading, paving, trampling by equipment and personnel, and overall removal of habitat would adversely affect vegetation. Based on conceptual design, the Action Alternative would require the permanent disturbance of approximately 32 acres and temporary disturbance of 24 acres of vegetation (excluding existing urban disturbance; see Error! Reference source not found.). Design is still in the preliminary stages and the impact estimates represent a worst-case scenario. Refinements through the final design process are anticipated to lessen the quantity of impacts to vegetation in the study area. <u>Areas temporarily impacted by the project would be restored shortly after construction in accordance with a revegetation plan, which will include the collection and use of native seeds or plants from the watershed or nearby watershed.</u>
Section 3.18.2	112	<ul style="list-style-type: none"> ▪ California red-legged frog: <u>Subwatersheds on the Point Reyes peninsula (Figure 16) PRNS watershed (synonymous with the boundaries of PRNS)</u>
Section 3.15.2	114	Remove Figure 16, Subwatersheds. The analysis was completed using the PRNS watershed for the study area and should not have shown the subwatersheds as drawn. The figure shown reflects boundaries constructed solely to provide an organizational structure for discussion purposes in the wetland delineation report.
Chapter 4	123	Mitigation Measure VA-3: If historic <u>wayfinding</u> markers are temporarily removed during construction, the contractor shall reinstall the marker at the right-of-way line.
Chapter 4	125	Mitigation Measure AQ-2: The contractor shall control dust within the construction limits in accordance with FP-03 Section 158, FP-03 Section 312, and applicable state and federal regulations.
Chapter 4	128	Mitigation Measure BIO-5: The contractor shall ensure that food scraps and other trash from the project are deposited in covered or closed trash containers. The trash containers shall be <u>removed from the project site stored and secured at the end of each working day to prevent wildlife access.</u>
Chapter 4	129–130	<p>Mitigation Measure BIO-17: A biological monitor shall be present on site to monitor for California red-legged frog during construction <u>within suitable aquatic breeding habitat areas, including any drainage or identified wetland within the project area.</u> The monitor shall be approved by the USFWS at least 15 days before construction begins. Credentials and experience must be supplied to the USFWS.</p> <p>Mitigation Measure BIO-18: A USFWS-approved <u>qualified biologist shall search all suitable aquatic breeding habitat areas within the proposed construction limits, including within 300 feet of any drainage or identified wetland within the project area, for California red-legged frogs, prior to project activities each day and after rain events, and shall be present on site during all project activities. The approved biologist shall have the authority to stop any work that may result in the take of any California red-legged frogs. Specifically, surveys will occur during the following periods: one time prior to initial groundbreaking activities; daily during the initial ground disturbing phase of construction; daily during rainy periods; and periodically during the remaining times.</u></p>
Chapter 4	130	Mitigation Measure BIO-22: No construction staging shall occur in wetlands <u>or riparian habitat.</u>

Chapter/Section/ Table	Page No.	Text Revisions
Chapter 4	131	Mitigation Measure BIO-29: Work in Schooner Creek, East Schooner Creek, and unnamed drainages between PM 9 and PM 12 shall be conducted during no- to low-flow periods of the year (June 15 <u>July 1</u> to October 15 or the first significant fall rainfall; i.e., 0.2 inches over a 24-hour period). For the remainder of the project corridor, culvert repair or replacement and associated work shall be completed during the dry season—typically between April 15 and October 15 or the first significant fall rainfall. All construction-related work within waterways that cross the project area shall be done in accordance with permit conditions.
Chapter 4	132	Mitigation Measure BIO-33: A qualified botanist shall conduct <u>a</u> preconstruction surveys of the construction limits for western dog violet plants <u>within one year</u> prior to project implementation. <u>Preconstruction surveys shall be conducted within the blooming period between April and August.</u> Identified plant populations shall be marked prior to project construction for avoidance during construction. If a plant population(s) cannot be feasibly avoided, individual plants shall be relocated by a qualified botanist to a location adjacent to the project disturbance limits.
Chapter 4	133	Mitigation Measure BIO-43: CFLHD shall comply with the conservation measures set forth by the National Marine Fisheries Service as a result of informal Section 7 consultation. Mitigation Measure BIO-44: CFLHD shall comply with the terms and conditions of the California Endangered Species Act incidental take permit for Point Reyes meadowfoam.
Chapter 4	134	Mitigation Measure BIO-43-45: CFLHD shall compensate for the permanent loss of jurisdictional features through purchase of mitigation credits at an approved wetland mitigation bank and/or creation of wetland and riparian compensatory mitigation. The replacement ratio shall be 1.5:1 (acres replaced to acres impacted) or higher, in accordance with permit terms and conditions. A mitigation and monitoring plan shall be developed for on-site restoration of temporarily impacted wetlands <u>and riparian habitat</u> , on-site restoration or mitigation of permanently and temporarily impacted riparian habitat, and mitigation of permanently impacted wetlands.
Chapter 4	135	Mitigation Measure BIO-44-46: All material and debris generated as a result of project construction shall be removed from the site and disposed in an approved location outside of USACE jurisdiction. Mitigation Measure BIO-45-47: Concrete and asphalt piles shall be stockpiled outside and away from wetland resource areas, surrounded with fiber rolls, and covered with plastic. Mitigation Measure BIO-46-48: Temporarily impacted wetlands shall be restored on-site to pre-construction conditions through planting vegetation and hydroseeding with a native seed mix from the watershed or nearby watersheds under guidance from the PRNS biologists. <i>The following measure is deleted because it is a duplicate of BIO-9:</i> Mitigation Measure BIO-47: The construction contractor shall use best management practices to prevent the discharge of equipment fluids. All equipment shall be stored, repaired, maintained, and fueled at least 65 feet away from waterways, wetlands, and riparian habitat. A plan for prompt and effective response to any accidental spills shall be developed prior to construction.
Chapter 4	136	Mitigation Measure HR-1: The <u>Historic E Ranch corral at E Ranch, Historic A Ranch main house, Historic B Ranch main house, and Historic B Ranch hay barn</u> shall be protected from inadvertent damage by placement of fencing or concrete barriers.

Chapter/Section/ Table	Page No.	Text Revisions
Chapter 4	137	<p><i>The following section has been revised to reflect new information regarding archeological resources in the project area:</i></p> <p>No archaeological resources have been identified within the area of potential affect (APE). <u>However, subsequent archaeological survey conducted for the project, and the review and approval of the study report by the NPS and CFLHD, a previously unknown archaeological site (PORE00037) was identified within the vicinity of the APE. The documented site boundary crosses SFDB at two locations. The first locus showed no cultural materials within 40 meters of SFDB. The other locus is a low density scatter of marine shell on either side of the road where a cattle underpass crosses under the road. Please refer to Section 3.1.6 for a more detailed description of the site. In addition, Only a small area of the project corridor (0.6%) has a high or very high potential for buried deposits.</u></p> <p>No Impact. In the area that has a high or very high potential for buried deposits, surface widening and paving is proposed, entailing less than one foot of vertical disturbance. This will not affect potentially buried resources because work would be conducted within the in the layer of previously disturbed sediments. Based on the PRNS investigation and documentation of PORE00037, CFLHD made the determination that cultural deposits associated with PORE00037 Locus 2 within the APE for the proposed undertaking lack integrity and do not support eligibility of the resource. The eligibility of the resource outside the project APE remains unevaluated and will not be impacted by the project. Temporary protective fencing is already included in the project design to delineate construction activities around the cattle crossing, including the area where the PORE00037 site boundaries intersect with the project. No additional avoidance or mitigation measures for PORE00037 are necessary.</p>
Chapter 4	138	<p>Less than Significant Impact with Mitigation. Impacts to soils would result from roadway widening, paving existing pullouts, vegetation clearing, constructing cut and fill slopes and walls, and installing box and arch culverts. Impacts to soils, including soil erosion, effects on soil productivity, or the ability of the soil to support vegetation, would be minimal. Implementation of the following mitigation measures would reduce soil erosion potential to a less than significant level.</p>
Chapter 4	140	<p>Less than Significant Impact with Mitigation. <u>Seven listed sites and Only one de minimis REC site are is-located on sites within the study area. The seven listed sites identified in regulatory databases have no further action required, no violation reported, or are not likely to pose a risk to the proposed project. De minimis findings generally do not pose a risk that would be subject of an enforcement action.</u></p>
Chapter 4	140	<p>Mitigation Measure HM-2: <u>The contractor shall test the Demolition would be required during construction for cattle under-crossings and culverts for asbestos prior to demolition. It is not anticipated that asbestos-containing materials would be encountered. However, pPer the requirements of Regulation 11, Rule 2 (Asbestos Demolition, Renovation, and Manufacturing), if asbestos-containing material is identified, the contractor shall provide a written plan or notification of intent to the Bay Area Air Quality Management District's Enforcement Division and Air Pollution Control Officer prior to commencing demolition of structures.</u></p> <p>Mitigation Measure HM-3: During Worker Environmental Awareness Training, construction supervisor personnel shall be trained to recognize signs of possible contamination in soil such as odors and staining. Supervisors shall be responsible for training construction staff. Handouts shall be provided to aid construction workers in issue identification.</p>
Chapter 4	146	<p>Mitigation Measure N-3: <u>All eConstruction shall occur on weekdays. If weekend work is proposed, the contractor shall provide notification to the Contract Oversight Engineer two weeks prior to the proposed work. No weekend work shall be conducted without Contract Oversight Engineer approval.</u></p>
Section 5.3.1.1	158	<p>The permanent easement modifications and temporary easements would be minor and would not adversely affect the activities, features, or attributes of PRNS. PRNS and its associated recreational activities, including its scenic landscape, would continue to function during</p>

Chapter/Section/ Table	Page No.	Text Revisions
		construction and throughout the life of the roadway. Therefore, FHWA anticipates has made a finding of <i>de minimis</i> impact. The <i>de minimis</i> finding is subject to public review and, following this review, FHWA will make a final impact determination. Public review and comment on the <i>de minimis</i> finding was solicited through public review of the EA/IS. In addition, written concurrence from the NPS regarding the <i>de minimis</i> impact finding will be obtained prior to issuance of the decision documents. <u>was received on August 26, 2015 and is included in Appendix I.</u>
Section 5.4	160	<ul style="list-style-type: none"> ▪ All <u>Construction shall occur on weekdays. If weekend work is proposed, the contractor shall provide notification to the Contract Oversight Engineer two weeks prior to the proposed work. No weekend work shall be conducted without Contract Oversight Engineer approval.</u> ▪ <u>All construction shall occur during daylight hours (1/2 hour after sunrise to 1/2 hour before sunset).</u>
Chapter 8	170	<u>Dell'Osso, J.A. Chief of Interpretation and Resource Education, Point Reyes National Seashore. 2015. Email correspondence to T. Belish, CFLHD. August 16.</u>

ACRONYM LIST

AASHTO	American Association of State Highway and Transportation Officials
APE	Area of Potential Effect
ASTM	American Society for Testing and Materials
BA	biological assessment
BAAQMD	Bay Area Air Quality Management District
BMP	best management practices
CAA	Clean Air Act
CARB	California Air Resource Board
CCC	Central California Coast
CCR	California Code of Regulations
CDC	California Department of Conservation
CDFA	California Department of Food and Agriculture
CDFW	California Department of Fish and Wildlife
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CESA	California Endangered Species Act
CFLHD	Central Federal Lands Highway Division
CFR	Code of Federal Regulations
CMP	corrugated metal pipe
CNPS	California Native Plant Society
CO	carbon monoxide
CRLF	California red-legged frog
CWA	Clean Water Act
CZMA	Coastal Zone Management Act
CZMP	Coastal Zone Management Program
dBA	A-weighted decibels
DPS	distinct population segment
EA	environmental assessment
EPA	Environmental Protection Agency
ESU	Evolutionary significant unit
FAC	Food and Agricultural Code
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Map
FLAP	Federal Lands Access Program
FMMP	Farmland Mapping and Monitoring Program
FPPA	Farmland Protection Policy Act
GIS	Geographic Informational Systems
GMP	General Management Plan
GPS	Global Positioning System
HAPC	Habitat Areas of Particular Concern
IS	initial study
MBTA	Migratory Bird Treaty Act
mph	miles per hour
n.d.	no date

NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NO ₂	nitrogen dioxide
NOAA	National Oceanic and Atmospheric Administration
NO _x	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NPS	National Park Service
NRCS	National Resources Conservation Service
NRHP	National Register of Historic Places
Pb	lead
PM	project mile
PM ₁₀	particulate matter less than 10 micrometers in diameter
PM _{2.5}	particulate matter less than 2.5 micrometers in diameter
PRC	Public Resource Code
PRNS	Point Reyes National Seashore
RCEM	Roadway Construction Emission Model
RCRA	Resource Conservation and Recovery Act
REAP	rain event action plan
REC	recognized environmental conditions
RHR	Regional Haze Rule
ROW	right-of-way
SFDB	Sir Francis Drake Boulevard
SHPO	State Historic Preservation Office
SLR	sea level rise
SMAQMD	Sacramento Metropolitan Air Quality Management District
SMCA	State Marine Conservation Area
SMR	State Marine Reserve
SO ₂	sulfur dioxide
SWPPP	stormwater pollution prevention plan
SWRCB	State Water Resources Control Board
USACE	United States Army Corps of Engineers
USDOT	United States Department of Transportation
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Society
WEAT	Worker Environmental Awareness Training
WRCC	Western Regional Climate Center

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CHAPTER 1: PURPOSE AND NEED

1.1 Introduction

The Federal Highway Administration (FHWA) Central Federal Lands Highway Division (CFLHD), in cooperation with Marin County and the National Park Service (NPS), is proposing improvements to Sir Francis Drake Boulevard (SFDB) in Point Reyes National Seashore (PRNS), which is a unit of the NPS within Marin County, California. The proposed project includes improvements to approximately 12 miles of SFDB within PRNS. The project begins at the intersection with Pierce Point Road and

continues south and west to the intersection with Chimney Rock Road (see Figure 1). The proposed improvements primarily consist of resurfacing, restoring, and rehabilitating a 12-mile segment of SFDB in a manner that will closely follow the existing roadway in order to minimize impacts to the natural terrain. In general, the roadway would be widened 1 to 6 feet to maintain a consistent 24-foot width with two 11-foot travel lanes and 1-foot shoulders.

This joint Environmental Assessment (EA) and Initial Study (IS) has been developed to meet CFLHD's obligations as the lead agency under the National Environmental Policy Act (NEPA) of 1969, as amended, and Marin County's obligations as the lead agency under the California Environmental Quality Act (CEQA). The analysis in this document concentrates on aspects of the project that could have a significant effect on the environment, and identifies feasible measures to mitigate (i.e., reduce or avoid) these impacts. The CEQA Guidelines define "significant effect on the environment" as a "substantial or potentially substantial adverse change in any of the physical conditions within the area affected by the project...." (CEQA Guidelines, Section 15382).

As the agency responsible for managing lands surrounding SFDB in the study area, the National Park Service has been involved in all aspects of planning for this project. Both Marin County and NPS staff attended the project kickoff meeting, staffed the public scoping meeting, and attended on-site design reviews. Both agencies also provided input into development of this EA/IS, and reviewed and commented on the document before it was released to the public. However, as the lead agency for this project, CFLHD is responsible for selecting the Preferred Alternative, taking into consideration input from Marin County, the NPS, and the public.

In cooperation with CFLHD, the NPS developed a separate plan/EA, titled *Road Improvement and Maintenance Projects*, in 2014 to repair 22 miles of roads and adjacent parking areas in PRNS. That plan includes Lighthouse Road and Chimney Rock Road, which are both accessed via SFDB at the southern end of the Sir Francis Drake Boulevard Improvement Project study area. Although both plans focus on road improvements on the Point Reyes Peninsula, they are different and separate projects. The *Road Improvement and Maintenance Projects* plan is discussed in more detail in Section 3.18 Cumulative Impacts, below. That plan can also be found on the NPS PEPC Planning, Environment & Public Comment web site, which can be accessed from the park's web site (http://www.nps.gov/pore/getinvolved/planning_current.htm).

The general scope of roadway improvements includes new pavement surfaces on 12 miles of Sir Francis Drake Boulevard with minor widening in some areas.

Figure 1: Project Location



1.2 Federal Lands Access Program

The proposed improvements are administered under the Federal Lands Access Program (FLAP), which provides funds for projects on “access transportation facilities.” An access transportation facility is a public highway, road, bridge, trail, or transit system that is located on, is adjacent to, or provides access to federal lands for which title or maintenance responsibility is vested in a state, county, town, township, tribal, municipal, or local government. The FLAP supplements state and local resources for public roads, transit systems, and other transportation facilities, with an emphasis on high-use recreation sites and economic generators.

The proposed project was placed in the FLAP in 2013 with matching funds from Marin County. The estimated cost of construction is approximately \$14 million (2016 dollars). Funding for the project is currently programmed for 2018, but may be accelerated to 2016.

FLAP funds are distributed among states that have federal lands managed by the NPS, U.S. Forest Service, U.S. Fish and Wildlife Service, U.S. Bureau of Land Management, and U.S. Army Corps of Engineers. These funds are allocated from the Highway Account of the Highway Trust Fund, and provide for transportation planning, research, engineering, preventative maintenance, rehabilitation, restoration, construction, and reconstruction of federal lands access transportation facilities that are located on or adjacent to, or that provide access to, federal lands.

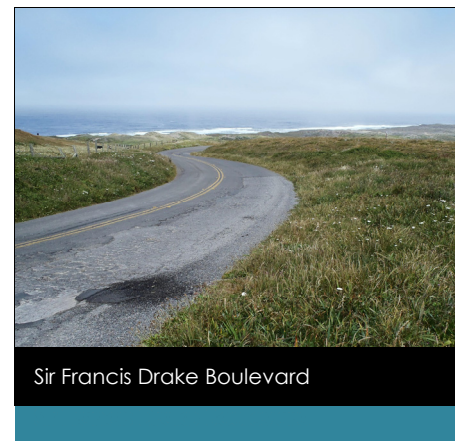
1.3 Route Description

SFDB extends from Route 101 in Greenbrae, north of San Francisco, westward approximately 43 miles to the Y-intersection with Chimney Rock Road and Lighthouse Road. The junction with Pierce Point Road is the approximate boundary of PRNS and is approximately 2 miles west of Inverness. The 12-mile portion of SFDB to be improved is between Pierce Point Road and the Y-intersection, and is maintained by Marin County.

SFDB is the primary north-south roadway within PRNS, which is located on the Point Reyes Peninsula. The peninsula is edged by beaches, sea cliffs, and intertidal zones that gradually transition into the Pacific Ocean, Drakes Bay, and Drakes Estero (NPS, 2009). The roadway traverses a number of waterways and drainages, including East Schooner Creek, Schooner Creek, and their tributaries. Within the project area, SFDB is primarily surrounded by agricultural lands used for cattle grazing, and passes through numerous ranches that are scattered across the peninsula. SFDB provides primary access to both ranching facilities and PRNS destinations, and is therefore used by a variety of travelers. Typical SFDB users include park visitors in personal vehicles, park shuttle buses, tourist buses, school buses, milk trucks, hay trucks, recreational vehicles, and bicyclists.

Based on NPS standards (1984), SFDB is classified as a public use park road and a Class I Principal Park Road/Rural Parkway, a designation for primary access roads or tour routes through parks. In addition, current American Association of State Highway and Transportation Officials (AASHTO) standards (2011) classify SFDB as a Minor Collector Road. There are no designated bike lanes along SFDB, although the route is classified by Marin County as a Class III bike shared route.

Average daily traffic along the project corridor is 1,369 vehicles (2014), with projected 2034 traffic volumes of 1,452 vehicles (County of Marin, 2014). The roadway width within the project area varies between 18 feet and 24 feet, and consists of two variable width travel lanes with no



Sir Francis Drake Boulevard

shoulders. Posted speeds along SFDB within the project area vary between 35 miles per hour (mph) and 40 mph.

1.4 Purpose of the Proposed Project

The purpose of the project is to restore the structural integrity of SFDB and enhance safety for all users while reducing ongoing maintenance requirements.

1.5 Need for the Proposed Project

Within the project area, SFDB is narrow and deteriorating at an accelerated pace. The declining condition may necessitate vehicle restrictions or closures if not rehabilitated in the near future. Between project mile (PM) 9 and PM 10, a 0.5-mile section of the roadway also floods seasonally, which restricts access because the road becomes impassible. SFDB was originally an unimproved dirt road that was chip sealed and has never undergone major rehabilitation. The existing pavement was not designed to handle the current traffic loads. Marin County has carried out partial and temporary repair projects over the years to keep the road operational and to meet the needs of the traveling public. SFDB is now at an age where a comprehensive repair project is needed to ensure continued service. The specific elements driving the need for the project are described in the subsections below.

1.5.1 Pavement Deterioration

The existing pavement was not designed for the current traffic loads. Pavement along SFDB is badly oxidized, heavily patched, lacks shoulder support, and demonstrates significant cracking and edge damage in some sections. Potholes, edge raveling, and rutting in the wheel paths also exist. Standing water in shallow ditches has contributed to pavement failures between the Schooner Creek crossing and Rogers Ranch (approximately PM 10). The current deteriorating state of the roadway requires maintenance beyond normal pavement preservation, including frequent patching of potholes, patching of edge failures, and installing tubular traffic marker posts on the edge of the road to mark unsafe pavement edges undercut by water erosion. Maintenance can no longer keep the road open to vehicles at all times. One section of road is currently limited to two-way alternating traffic due to an edge failure and standing water on the road. The lack of a stable road shoulder is routinely causing vehicles to drop tires into roadside ditches (pers. comm. Mills 2015).



1.5.2 Substandard Roadway Width

Existing pavement widths on SFDB generally vary from 18 feet to 24 feet, with isolated areas as wide as 27 feet along switchbacks. The existing roadway has no shoulders in many areas.

These narrow conditions provide little or no room for errant vehicles to correct without running off the edge of the road. Switchbacks on hills and flood-prone areas show evidence of tires dropping off pavement edges.

The road width does not provide sufficient clearance for vehicles and bicycles to safely pass each other without traveling into opposing lanes. Larger vehicles, such as recreational vehicles, school buses, park shuttles, and milk



trucks, frequently encroach into the opposing travel lane due to the narrow width of the road. This scenario not only creates safety concerns, but puts stress on the pavement edges, requiring additional maintenance.

Drivers typically expect uniform or consistent roadway design, which can improve their ability to respond to situations on the roadway. The inconsistent widths along the project route present safety concerns because the roadway lacks the predictability users expect, particularly users who are not familiar with the roadway, such as tourists.

1.5.3 Flooding

Seasonal flooding along a 0.5-mile section of the roadway between PM 9 and PM 10 restricts access to various destinations and affects staff, visitors, and ranchers. Because of the existing narrow roadway width, vehicles are susceptible to running off the road and into ditches during flooding. In addition, East Schooner Creek crosses this section of SFDB through a culvert and flows through heavy brush and trees on the north side of the roadway until it flows into Schooner Creek. As a result of sediment deposits, the elevation of the creek channel has increased and is now nearly the same level as the roadway, resulting in standing water that has damaged pavement. Dredging the channel regularly as a maintenance measure is not feasible due to the presence of wetlands and potential for California red-legged frog (*Rana draytonii*), which is a species listed as threatened under the federal Endangered Species Act.



Large rut caused by vehicle running off the road in flood-prone area

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CHAPTER 2: ALTERNATIVES

This section describes the proposed action and the project alternatives that were developed pursuant to NEPA to meet the project purpose and need while avoiding or minimizing environmental impacts. The alternatives evaluated in this EA/IS include the No Action Alternative and the Action Alternative.

2.1 Alternatives

One No Action Alternative and one Action Alternative are analyzed in this EA/IS. The National Environmental Policy Act requires agencies to analyze the consequences of taking no action, which is represented by the No Action Alternative. In addition, the No Action Alternative provides a baseline for comparing the consequences of the Action Alternative.

2.1.1 No Action Alternative

Under the No Action Alternative, the proposed activity would not take place.

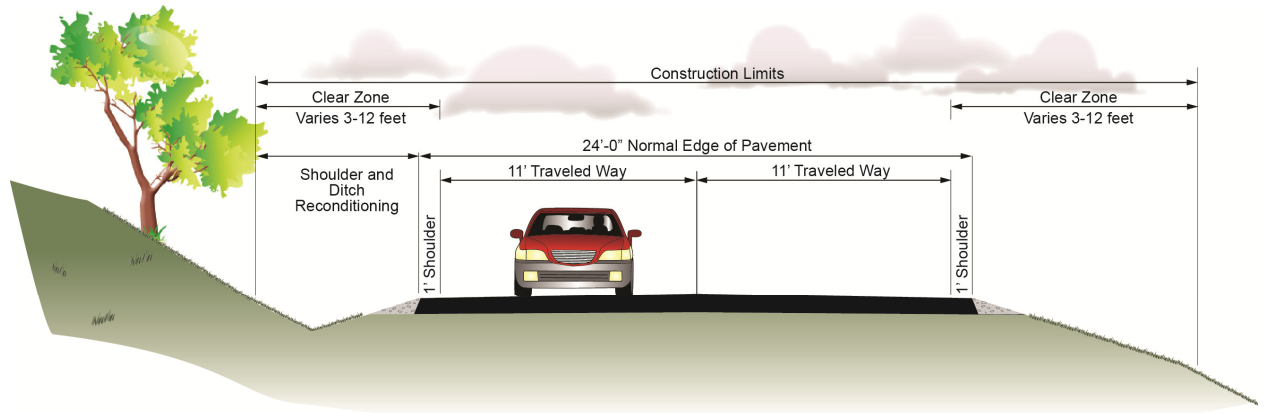
- Ongoing maintenance activities would continue to repair pavement edges due to substandard roadway widths and to repair general pavement damage, such as potholes, cracking, and rutting.
- No actions to address pavement conditions, other than minor patching and overlays, would be implemented.
- No actions would be taken to reduce flood damage to the roadway. Standing water in the channel that has formed along the roadside would continue to damage pavement, requiring ongoing maintenance. The road would continue to be closed to traffic during flood events and associated repair activities.
- No actions to address safety, other than pavement repair as described in the bullets above, would be implemented. Delineated shoulders would not be provided. No changes would be made to diminish sharp curves, remove hazards from the clear zone, address limited sight distance, add striping, or implement other measures to enhance safety.

2.1.2 Action Alternative

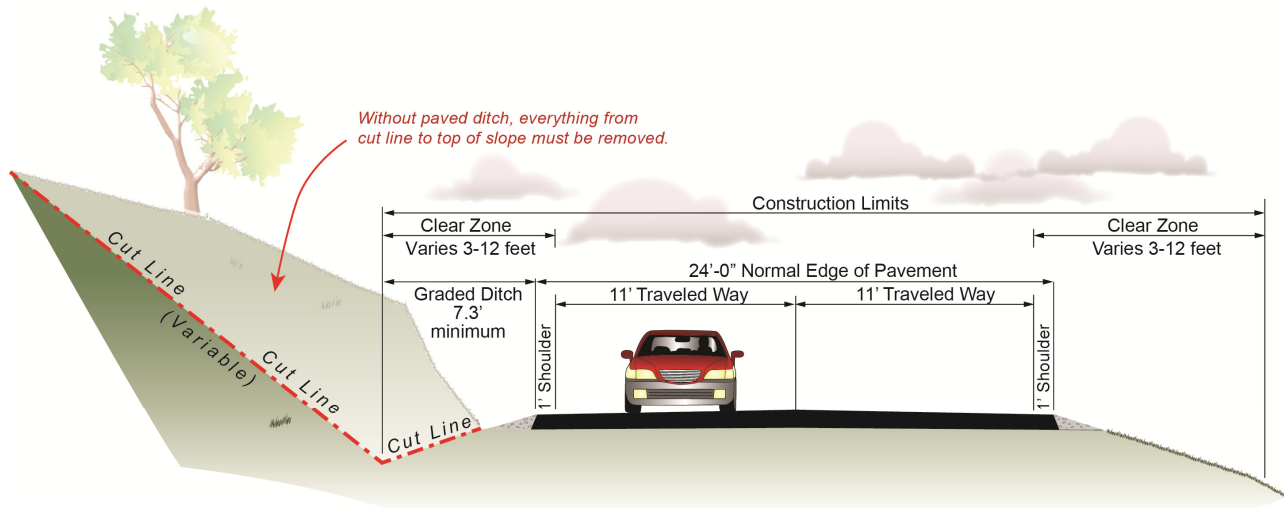
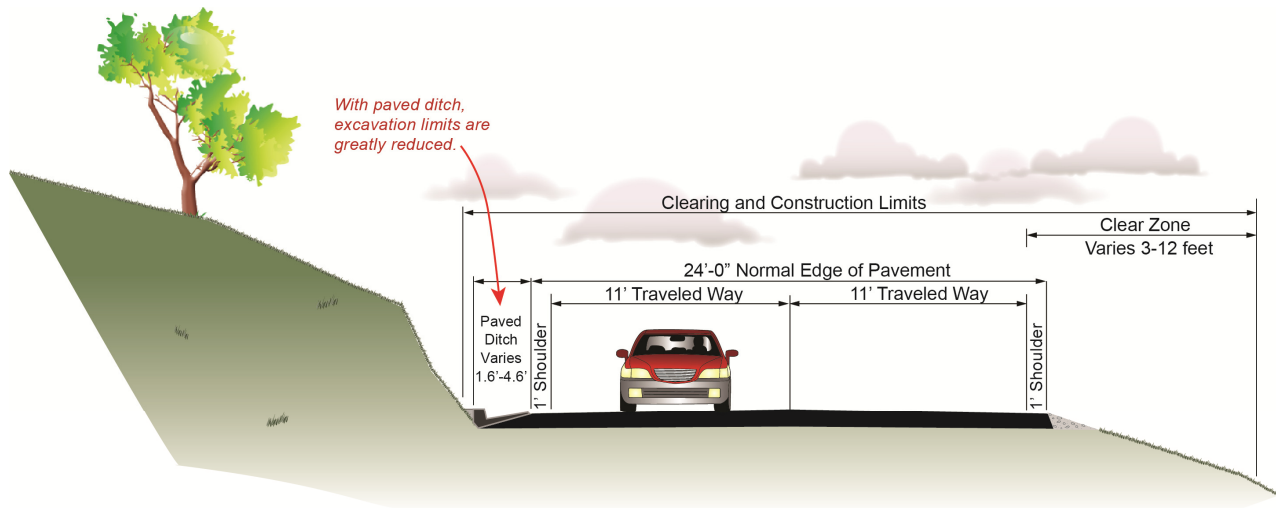
The Action Alternative primarily consists of resurfacing, restoring, and rehabilitating a 12-mile segment of SFDB in a manner that will closely follow the existing roadway in order to minimize impacts to the natural terrain. In general, the Action Alternative would widen the roadway 1 to 6 feet to maintain a consistent 24-foot width with two 11-foot travel lanes, 1-foot shoulders, and 1-foot wide graveled areas on each side of the paved surface of the road (see Figure 2). The total pavement width would be 4 to 8 feet less than published guidelines¹ (AASHTO 2011, NPS 1984). Given the sensitive environment, the proposed width is intended to allow much of the construction to occur within the existing roadway bench and the existing Marin County easement while providing a rehabilitated pavement section.

Roadway widening would include pulverizing the existing asphalt pavement, overlaying with 4 inches of asphalt pavement, striping, and ditch reconditioning (regrading with dense vegetation removal as needed). Paved ditches between 2 and 4 feet wide with asphalt curbs are proposed in specific areas to minimize cut slopes, which would minimize overall ground disturbance as shown in Figure 3 and Figure 4. It is anticipated paved ditches would be installed along the roadway on up to 15 percent of the corridor.

¹ Referenced guidelines are based on AASHTO and NPS classifications for Sir Francis Drake Boulevard. The AASHTO classification is minor collector. The NPS classification is public use park road with a class I principal park road/rural parkway with topography classification of rolling terrain

Figure 2: Proposed Typical Section

Note: Typical section may vary in areas of localized improvements.

Figure 3: Typical Section at Steep Slopes without Paved Ditch (Not Proposed)**Figure 4: Typical Section at Steep Slopes with Paved Ditch (Proposed)**

Existing 15- and 18-inch culverts within the project area would generally be replaced with 24-inch culverts where feasible. Approximately 70 culverts would be replaced, most of which would not require armoring because they are located in relatively flat areas where anticipated flows and thick vegetation would preclude the need for riprap.

At existing pullouts along the project corridor, a 5-foot asphalt apron (edge) would be added over the existing aggregate surface, and some pullouts would be resurfaced with aggregate. As noted below in the localized reconstruction and safety improvements, one pull-out may be paved.

The clear zone, which is the area available for safe use by errant vehicles, would be improved through removal of obstructions, including clearing vegetation adjacent to the roadway as feasible. The clear zone would vary between 3 feet wide and the AASHTO minimum design standard width of 12 feet in order to minimize ground disturbance.

Based on conceptual project design, a total of 4.3 acres of impervious surface would be added as a result of increased road surface and paved ditches adjacent to the road. However, paving additional ditch sections to minimize cut slopes and reduce construction limits would increase the amount of impervious surface to a total of 6.0 acres. Because project design is still in preliminary stages, the area of disturbance and the amount of increased impervious surface anticipated represents a worst-case scenario. Refinements undertaken through the design process are anticipated to lessen the area of impact.

All traffic control signs within the study area would be reviewed and replaced, if needed, to meet current standards. Advanced warning signs would also be considered and may be included at approaches to areas where speed limits would be reduced, such as ranches and sharp turns.

The Action Alternative includes localized reconstruction and safety improvements in certain areas, as described below and shown on Figure 5 and Figure 6 below:

- Between PM 0.8 and PM 1.2, the vertical alignment of the roadway would be flattened and side slopes would be cut back, as needed, to improve sight distance.
- Between PM 1.8 and PM 2.1, near Historic B Ranch, the existing slope on the west side of the roadway would be cut back and a retaining wall less than 6 feet high may be constructed, if determined needed, to accommodate the wider roadway.
- Between PM 4.0 and PM 4.1, the surface of the roadway would be tilted or banked through the curve to improve driver safety, and side slopes may be cut back to improve sight distance.
- The two existing 6-foot by 10- to 11-foot wooden deck cattle under-crossings at PM 7.1 and PM 7.3 would be replaced with concrete box culverts approximately 8 feet high and 13 feet wide. The box culverts would be installed 2 feet below the existing ground surface to maintain a natural dirt floor.

Figure 5: Proposed Action Localized Improvements PM 0.0 to PM 6.0

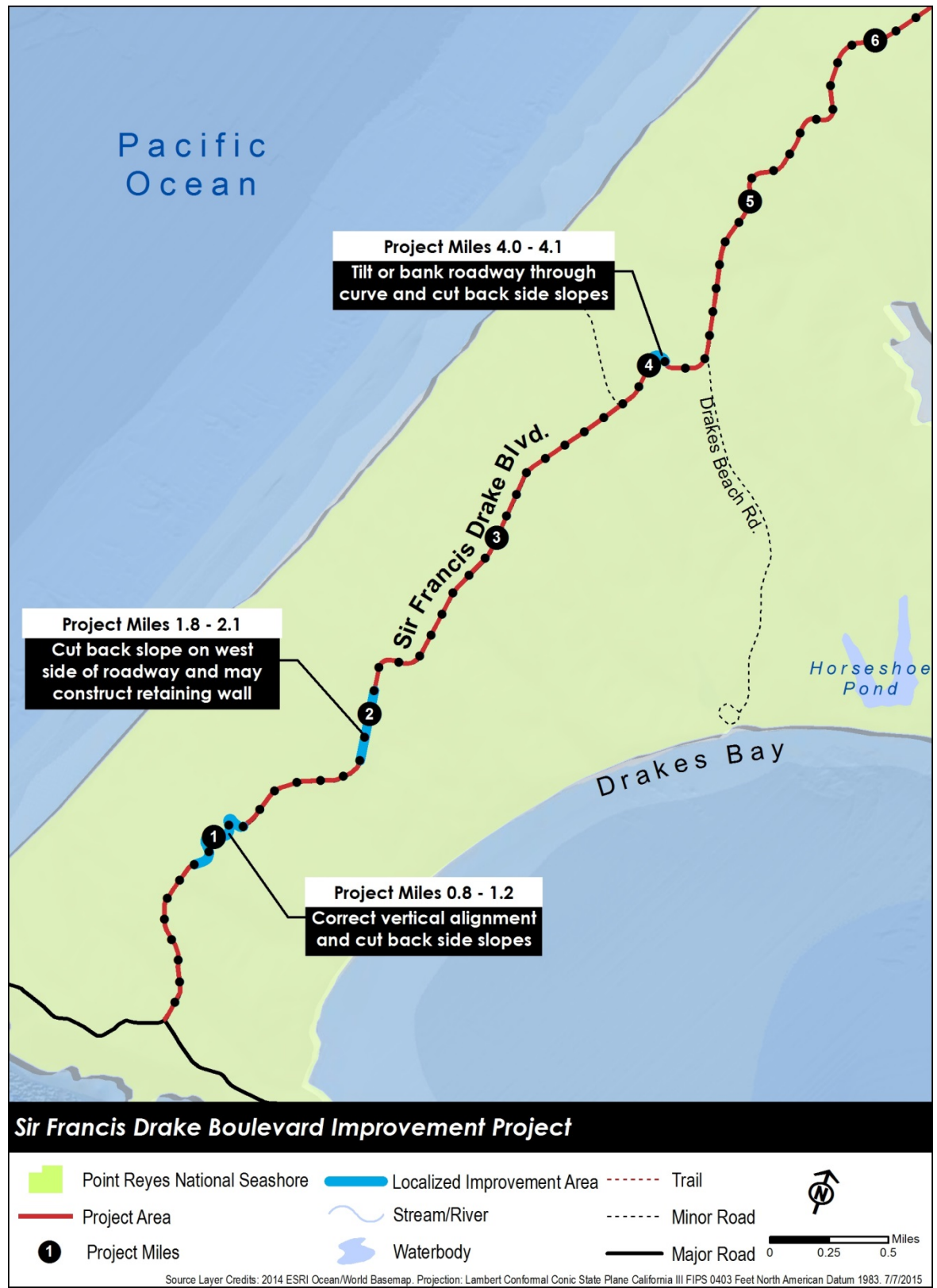
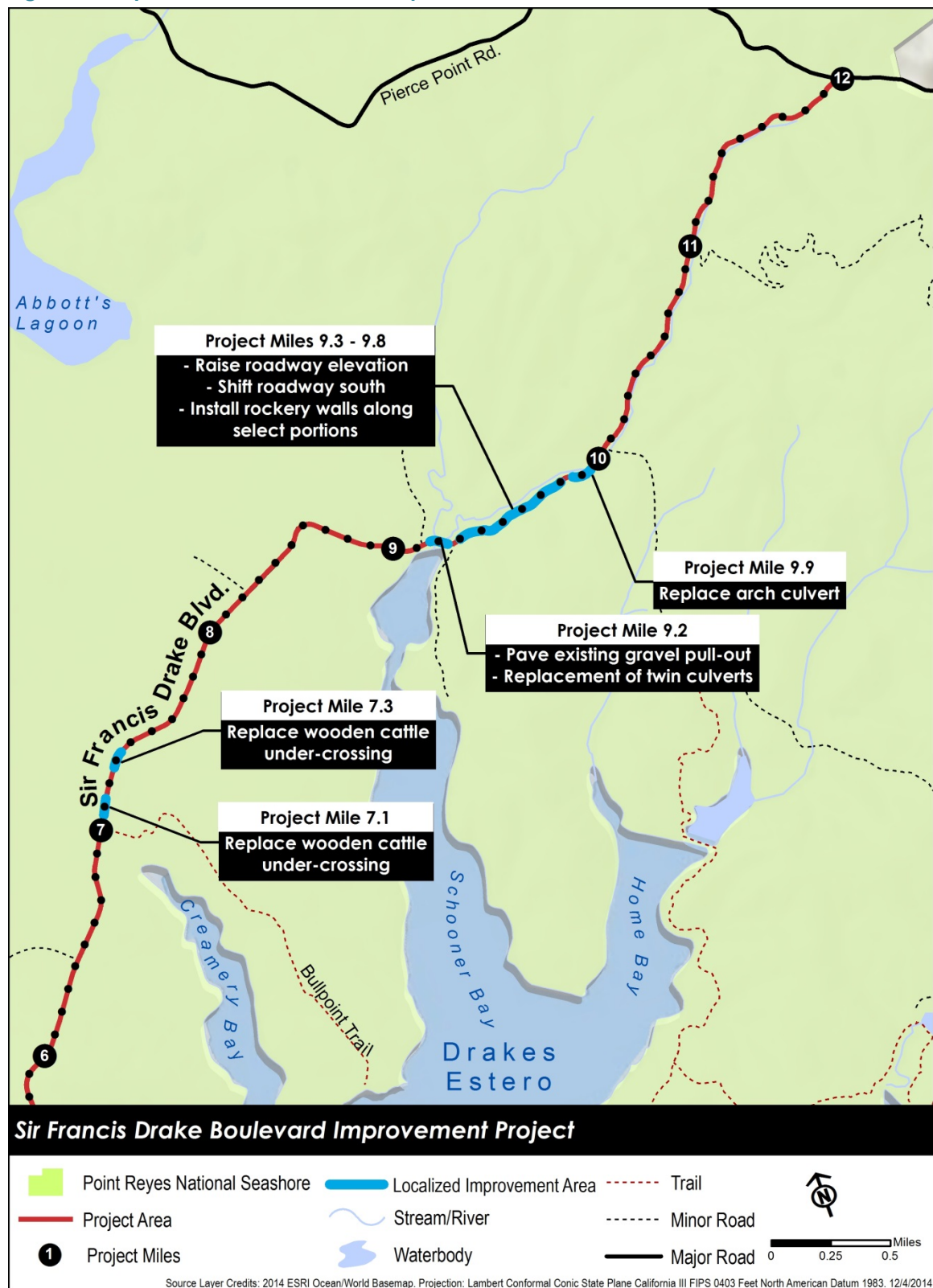
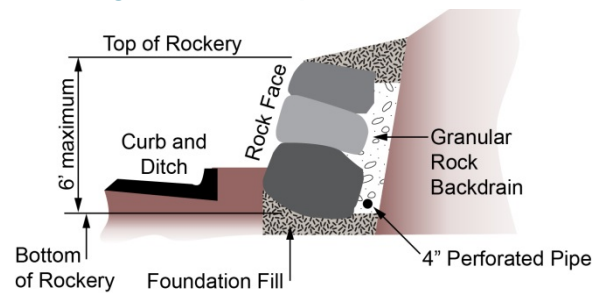


Figure 6: Proposed Action Localized Improvements PM 6.0 to PM 12.0



- The two existing 84-inch diameter corrugated metal culverts at Schooner Creek (PM 9.2) would be replaced with an open-bottom arch structure with an approximately 32-foot-wide opening. The structure length would be determined during final design and would be designed to provide improved fish passage by reducing tidal and stormwater flow velocities.
- The existing gravel pullout (approximately 0.06 acre in size) at PM 9.2 by Schooner Bay may be paved with 4 inches of asphalt pavement to reduce erosion and maintenance.
- Between approximately PM 9.3 and PM 9.8, the roadway would be raised 1 to 4 feet and shifted approximately 12 feet to the south to reduce flooding of the roadway. Asphalt curb and gutter would be installed along the length of this section. Rockery walls², approximately 6 feet high, would be constructed along portions of this section to accommodate the wider roadway and minimize impacts to vegetation and sensitive resources on the adjacent slopes (see Figure 7).
- The existing 60-inch diameter elliptical arch culvert at PM 9.9 would be replaced with a concrete box culvert up to 6 feet high and 12 feet wide. The culvert would be installed at least one foot below the existing channel bed to accommodate fish and other wildlife passage within East Schooner Creek.

Figure 7: Rockery Wall Detail



The proposed improvements, including construction-related activities and staging areas, would generally occur within the existing 60-foot Marin County roadway easement. However, the easement may be shifted or expanded to accommodate some of the localized improvements discussed above.

2.1.2.1 Construction

Construction is anticipated to occur over two construction seasons in order to accommodate environmental timing restrictions and seasonal constraints. At least one lane of traffic would remain open during construction with a maximum 30-minute delay. If any delay longer than 30 minutes is anticipated to accomplish specific construction activities, then notice must be provided to PRNS staff, ranchers, the public, relevant local agencies, the school district, and emergency service providers. All construction would occur on weekdays during daylight hours.

Because of the numerous sensitive resources (e.g., threatened and endangered species and migratory birds) within the project area, timing restrictions on vegetation removal and construction activities are proposed. Chapter 3 discusses the timing restrictions and applicable locations of construction timing restrictions proposed to minimize potential impacts to special-status species, as well as measures to be undertaken if it is infeasible to adhere to timing restrictions.

Earthwork to construct the project is anticipated to be fairly balanced between excavation of material and fill of material. However, a net import of embankment material is anticipated. Pulverized asphalt from the existing road would remain on site and used as aggregate base course for construction of the new roadway.

Construction staging areas have not been identified at this time. Construction staging would be sited in previously disturbed areas and, if not feasible, would be sited to avoid sensitive

² This type of rockery wall would be used to hold back the slope and would be constructed of stacked rocks that are not mortared together.

resources, such as areas of intact native plant communities, wetlands, and special-status species habitat.

2.1.3 Preferred Alternative

The benefits and impacts of the No Action Alternative and Action Alternative, as further discussed in Chapter 3, were analyzed and considered in the identification of a preferred alternative. Based on this analysis and the ability of each alternative to meet the purpose and need of the project, CFLHD has identified the Action Alternative as the Preferred Alternative. This determination is subject to public review and final selection of a Preferred Alternative will occur following the public review and comment period.

After the 30-day public comment period, all comments will be considered and CFLHD will select the Preferred Alternative. A final determination of the project's effects on the environment will be identified at that time. If it is determined the proposed action would not significantly impact the environment, a Finding of No Significant Impact will be issued in accordance with NEPA, and a Mitigated Negative Declaration will be adopted in accordance with CEQA.

2.2 Alternatives Considered but Dismissed from Evaluation

The deteriorating structural condition of the roadway, narrow and inconsistent roadway widths, and flooding were identified through project scoping as issues the project needs to resolve. During the scoping process conducted July 1 through August 30, 2014 including a public open house held on July 22, 2014, it also became apparent that options for addressing these issues would be constrained by the project location, which contains adjacent sensitive environmental resources, such as wetlands and threatened and endangered species habitat. Based on this information, the following alternatives or options were considered during preliminary design, but were dismissed either because they were beyond the scope of the project, had unacceptable impacts, or had unacceptable safety concerns.

- **AASHTO and NPS design standard improvements.** To meet AASHTO or NPS design standards along SFDB, the roadway would need a pavement width between 28 feet and 32 feet, shoulder widths between 3 feet and 5 feet, and a clear zone width between 10 feet and 12 feet. In addition, 44 of the 136 curves in the project area do not meet the 40 mph speed limit design standard, and 32 of the 136 curves have a horizontal stopping sight distance below design standards. Widening the roadway and improving all substandard horizontal curves to meet current design standards would require a substantial amount of ground disturbance. The roadway traverses or is adjacent to special status species habitat, including designated California red-legged frog critical habitat, populations of state listed rare plants, numerous wetlands and other waterbodies, and visual landscapes that are valued and intended for preservation within PRNS. Because of the context-sensitive nature of the project area, improving the roadway to meet current design standards would result in unacceptable impacts to PRNS resources, and was not considered further.
- **Narrower, consistent pavement width.** Alternatives that could provide a consistent pavement width, which would be less than 24 feet wide, were not considered during preliminary design. Widths narrower than 24 feet wide would not accommodate safe vehicle passage, particularly the large vehicles that use SFDB.
- **Dedicated bike lanes.** Adding dedicated bike lanes along the roadway was considered to be outside the scope and purpose of this project. The project is intended to improve the structural pavement condition of the roadway and reduce flooding. In order to accommodate dedicated bike lanes, the roadway would need to be widened further, which would result in additional impacts to PRNS resources. Because of this, dedicated bike lanes were dismissed from consideration. However, widening the roadway to a consistent 24-foot width, providing

a delineated shoulder and fog lines, and improving localized sight distance would provide incidental safety improvements for bicyclists.

- **On-alignment grade raise between PM 9.3 and PM 9.8.** An option was considered in the flood-prone area that would raise the roadway elevation 3 to 4 feet and would maintain the existing horizontal alignment. This option would result in impacts to wetlands on both the north and south sides of the roadway, with major impacts to wetlands and other waters of the U.S. on the north where East Schooner Creek parallels the road. In order to maintain traffic flow, this option would also likely require a detour during construction that would parallel the existing roadway, which would increase temporary impacts to sensitive PRNS resources. In an effort to minimize impacts, this option was eliminated from further consideration.
- **Causeway between approximately PM 9.3 and PM 9.8.** An option was considered to reconstruct the roadway in the flood prone area on a causeway (i.e., viaduct) in order to minimize impacts to sensitive habitat while reducing flooding potential. This would consist of removing the existing roadway and reconstructing the new roadway approximately 4 feet above the existing grade on 24-inch diameter piers placed every 20 to 40 feet. The horizontal alignment of the road would be shifted as much as 65 feet to the north of the existing road alignment in this segment. Additionally, temporary detours would be established at the locations where the causeway would tie into the existing road alignment. This would allow the road to remain open to the public during construction of the causeway.

Assuming only the 24-inch diameter piers would account for permanent impacts, and the piers would be spaced 40 feet apart for approximately 2,000 feet, it is anticipated this option would reduce permanent impacts to wetlands and other waters of the U.S. by approximately 24 percent. This option would also reduce permanent impacts to California red-legged frog habitat by approximately 5 percent. However, temporary impacts to wetlands and red-legged frog habitat are likely to increase because (1) temporary detours may be required on new alignments to maintain one lane of traffic at tie-in locations and (2) temporary matting and/or gravel would need to be placed in wetlands and other waters to allow equipment and personnel access to pier locations for construction.

While the causeway would reduce permanent impacts to wetlands and California red-legged frog habitat, it would increase impacts to the viewshed and historic resources. The causeway would be a new inconsistent visual element to the cultural landscape, causing substantial visual intrusion. This option would alter the existing road, which has a low profile and blends easily into the surrounding landscape. A new roadway alignment within fairly intact vegetation, along with the addition of railing, may make the presence of the road more visually obvious. With this option, visual impacts are expected to be higher and viewer response may be more negative. Additionally, the visual modification is expected to adversely affect SFDB, which is a contributor to a number of historic districts. This would adversely impact a contributing element and likely result in an adverse effect to one or more of the historic districts.

Construction costs for incorporating this option would be approximately 75 percent higher than the Action Alternative and are substantially higher than the available funds for the project. Although permanent impacts to sensitive habitat would be reduced, temporary construction impacts to sensitive habitat, tourists, ranchers, and wildlife would be increased because the duration of construction would be increased and exposure to construction-related impacts such as visual intrusion, noise, and traffic delays would be lengthened. For these reasons, this option was eliminated from further consideration.

2.3 Permits and Approvals Needed

Table 1 summarizes the permits and approvals required prior to construction.

Table 1: Permits and Approvals

Agency	Permit/Approval	Status
U.S. Army Corps of Engineers, San Francisco District	Individual Section 404 Permit for filling or dredging waters of the United States Section 10 permit for construction in or over a navigable water of the United States	Permits addressing both the project and mitigation sites to be submitted following NEPA and CEQA decision documents
U.S. Fish & Wildlife Service and National Marine Fisheries Service	Formal Endangered Species Act Section 7 consultation for adverse effects to threatened and endangered species	Non-jeopardy Biological Opinion from USFWS anticipated August 2015
National Park Service	USDOT Highway Easement Deed for expansion or alteration of existing easement	Modifications to the existing easement deed would be needed to accommodate temporary construction impacts and permanent improvements outside of the existing Marin County easement. A USDOT Highway Easement Deed application will be submitted following NEPA and CEQA decision documents. Existing utilities impacted by construction within the easement may need to be relocated but will remain within the easement.
California Coastal Commission	Consistency determination with the federally approved California Coastal Management Program, including the Coastal Act (PRC 30330, and 30400)	A determination that the project is conceptually consistent with the California Coastal Act will be received prior to NEPA and CEQA decision documents. Concurrence regarding the Consistency Determination will be obtained following NEPA and CEQA decision documents.
California Department of Fish and Wildlife	Section 2080.1 Agreement for threatened and endangered species that are both state and federally listed	Section 2080.1 agreement anticipated August 2015
California Office of Historic Preservation	Section 106 consultation for potential effects to historic resources	Section 106 consultation will be completed prior to NEPA and CEQA decision documents
San Francisco Bay Regional Water Quality Control Board	Section 401 Water Quality Certification for discharge of dredged or fill materials into waters of the United States National Pollutant Discharge Elimination System Permit for discharge of materials from a point source Construction General Permit/Stormwater Pollution Prevention Plan for discharge of stormwater related to construction activities	Permits and application for water quality certification for both the project and mitigation sites to be submitted following NEPA and CEQA decision documents

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CHAPTER 3: ENVIRONMENTAL CONSEQUENCES

This chapter describes the resources that could be affected by the Action Alternative and an analysis of the impacts that are expected to result from its construction and implementation. The No Action Alternative is also analyzed as a baseline for comparison.

Under NEPA, an EA is used to determine if significant effects to the environment would result from the proposed actions. If yes, then an Environmental Impact Statement must be prepared; if no, then a Finding of No Significant Impact is prepared to document the decision of the NEPA

lead agency. Under NEPA, significance is based on the context and intensity of an impact. Context refers to who and what would be affected by the action. Intensity refers to the severity of the impact. The Affected Environment sections prepared for each resource, below, describe the context. The Environmental Consequences sections analyze the intensity.

Similarly, under CEQA, an IS is used to provide a preliminary analysis of a proposed action to determine whether a Negative Declaration or an Environmental Impact Report should be prepared. Chapter 4: CEQA Mandatory Findings of Significance includes the CEQA Environmental Checklist and corresponding analysis used to determine level of impact significance under CEQA.

In addition, the EA/IS will serve as the consistency determination for the proposed project in accordance with the Coastal Zone Management Act (CZMA) of 1972. California participates in the federal Coastal Zone Management Program established under the federal CZMA; this program encourages coastal states to develop and implement coastal zone management plans. California has developed a coastal zone management plan and enacted its own law, the California Coastal Act of 1976, to protect the coastline. The policies established by the California Coastal Act are similar to those for the CZMA; they include the protection and expansion of public access and recreation, the protection, enhancement and restoration of environmentally sensitive areas, protection of agricultural lands, and the protection of scenic beauty. The California Coastal Commission is responsible for implementation and oversight under the California Coastal Act (Caltrans 2014). Analysis of the project's consistency with the California Coastal Act is provided in Chapter 3, Environmental Consequences.

The analyses that follow incorporate a conservative worst-case scenario based on conceptual design of the Action Alternative. The level of impact reported in this EA/IS is expected to decrease as design progresses.

A project area and individual study areas unique to each resource were defined in order to conduct the impact analyses that follow. For all resources, the project area is the construction limits of the Action Alternative, as described in Chapter 2 and depicted in Figure 2. Because the nature and extent of an impact differs by resource, individual study areas were defined to evaluate the existing condition and potential impact to each resource appropriately. For example, the study area for historic resources is a 60-foot wide corridor following the SFDB centerline. The study area for recreation and visitor experience is defined by destinations that are served by SFDB.

The analyses that follow incorporate a conservative worst-case scenario based on conceptual design of the Action Alternative. The level of impact reported in this EA/IS is expected to decrease as design progresses.

3.1 Resources with Negligible to No Impacts or Not Existing in the Project Area

The 1992 *Regulations for Implementing the Procedural Provisions of NEPA* direct federal agencies to “concentrate on the issues that are truly significant to the action in question” (40 Code of Federal Regulations [CFR] Part 1500.1(b)), “focus on significant environmental issues” (40 CFR Part 1502.1), and include “only brief discussion of other than significant issues” (40 CFR 1502.2(b)). Consideration and analysis was given to the resources listed below. These resources either do not occur in the project area or would have negligible or no impacts as a result of the project. The EA/IS includes a summary statement describing why impacts to these resources will not be discussed further during the NEPA process.

See also Chapter 4: CEQA Mandatory Findings of Significance, for an analysis of impacts pursuant to CEQA.

3.1.1 Gateway Communities

National parks can play an important economic role for local communities. Gateway communities are communities in proximity to national parks that provide food, lodging, transportation and other business support for visitors, and act as portals to national park landscapes.

Point Reyes is located approximately 30 miles north of San Francisco, and is “a major source of economic activity in Marin County, and one of the largest generators of economic activity in West Marin County” (Bay Area Economics 2006). However, improvements to SFDB are not expected to affect the economics of Marin County or the Bay Area, as there would be no changes to food, lodging, transportation, and other visitor services.

3.1.2 Environmental Justice

FHWA projects must comply with Executive Order 12898 of February 11, 1994 titled *Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations*. This executive order strives to avoid, minimize, or mitigate disproportionately high and adverse human health and environmental effects on minority or low-income populations. Some inholdings (private dairy farms) within the study area are served by SFDB. Their status as low-income and minority populations is currently unknown. However, the actions proposed under this project are not expected to result in a disproportionately high adverse impact to any populations.

3.1.3 Land Use

The planning, design, and construction of roads is often based on land use development patterns and trends, and affects existing land uses and plans and proposals for future development. Induced growth is an indirect impact that occurs when a project causes changes in the intensity and integrity, location, or pattern of land use.

The project is located within a unit of the NPS, which controls the majority of the land surrounding SFDB. Therefore, no change to land use and no induced growth is expected. The proposed improvements would primarily follow an existing roadway easement that Marin County has for purposes of maintaining the roadway. The county does not own any of the land in the project area. Short sections of roadway may be realigned to avoid sensitive areas, which would convert those small sections of existing park land to transportation use. However, this conversion would be consistent with the park’s general management plan (GMP) to improve auto access and transit service. The 1980 GMP identifies the majority of the project area as “Pastoral Landscape Management,” with a small section identified as “Special Use” for private lands “over which the NPS does not have complete jurisdiction.” Pastoral Lands are defined as a

subzone under the Special Use zone to permit the continued use of existing ranchlands for ranching and dairying purposes. The proposed action would improve access to these ranchlands, and would therefore be consistent with the GMP.

Although Land Use was dismissed from NEPA analysis, Chapter 4 includes the Land Use/Planning Environmental Checklist required under CEQA.

3.1.4 Wild and Scenic Rivers

No rivers officially designated as wild, scenic, or recreational exist within the project study area.

3.1.5 Floodplains

A 0.5-mile stretch of roadway within the project area is prone to flooding due to aggradation in the adjacent tributary. This area is shown on Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map Panel 06041CO210D, but is designated as Zone D, which states that flood hazards are undetermined but possible. This area is not a FEMA regulated floodplain. However, seasonal flooding occurs each year. Therefore, impacts associated with flooding are analyzed under the Water Quality section.

3.1.6 Archeological Resources

Archaeological surveys conducted for the project in May 2014 identified a single prehistoric isolate—an obsidian flake—within the area of potential effect. A previously recorded archaeological site could not be found. Isolates are, by definition, ineligible for listing on the National Register of Historic Places and the California Register of Historical Resources, and do not constitute historic properties for the sake of Section 106. No other artifacts were found within the area. Only a small area of the project corridor (0.6%) has a high or very high potential for buried deposits. In this area, surface widening and paving is proposed, entailing less than 1 foot of vertical disturbance, which will not affect potentially buried resources because work would be conducted within the road prism in previously disturbed sediments. In addition, no new excavation would occur in this area.

3.1.7 Cultural Landscapes

Cultural landscapes are addressed under the Historic Resources section.

3.1.8 Ethnographic Resources

Ethnographic resources are landscapes, objects, plants and animals, or sites and structures that are important to a people's sense of purpose or way of life. These resources link people to a park through religion, legend, deep historical attachment, subsistence use, or other aspects of their culture. The proposed roadway improvements would primarily adhere to an existing roadway. Therefore, no impacts to ethnographic resources are expected.

Native American consultation was conducted by CFLHD as part of ongoing Government-to-Government consultation. CFLHD requested a search of the Sacred Lands files from the Native American Heritage Commission in June 2014, but as of July 2015, had not received a response.

CFLHD contacted the Federated Indians of Grafton Rancheria in March 2015, describing the project and requesting feedback and information on cultural resources that might be affected by the project. Mr. Nick Tipon of the Sacred Sites Protection Committee, Grafton Rancheria, responded in April 2015. He requested a copy of the cultural report and stated that once they review the report they will provide comments. See correspondence in Appendix A: Section 106 Consultation.

3.1.9 Museum Collections

The project includes no actions that would affect museum collections. If any artifacts or other items are uncovered during project construction, construction will halt and the NPS would be alerted to the find.

3.1.10 Paleontological Resources

Minimal excavation of undisturbed bedrock is anticipated because the majority of construction would be related to roadway widening. However, excavation is expected along the 0.5-mile section proposed for realignment out of the flood area. A review of geological formations in this area revealed a very low propensity for fossils and other paleontological resources. If any such resource is encountered during construction, activities will cease and scientists will be brought to the site to investigate further and develop a course of action.

3.1.11 Climate Change

Because climate change has the potential to affect several resources within PRNS, it was retained for analysis under Cumulative Impacts rather than a separate resource.

3.1.12 Right-of-Way

The proposed action will not require the acquisition of NPS land. No residential home or businesses would be acquired or relocated as a result of the proposed action. The proposed action, including conducting construction-related activities and creating staging areas, would generally occur within the existing 60-foot Marin County roadway easement. The easement may be shifted to accommodate some of the localized improvements, but no acquisition of land is proposed. Therefore, this topic was dismissed from detailed analysis.

3.1.13 Section 6(f) Properties

Section 6(f) of the Land and Water Conservation Act requires that the conversion of lands or facilities acquired with Land and Water Conservation Act funds be coordinated with the Department of Interior. Usually replacement in kind is required. No lands that meet this criteria were identified within the study area.

3.2 Transportation

This section evaluates the potential impacts to access, safety, and traffic along SFDB within the study area.

3.2.1 Regulatory Setting

The segment of SFDB within the study area is maintained by Marin County. However, this segment of SFDB functions as a park road in that it provides the only method of accessing some of the park's most visited attractions. NPS *Management Policies* (2006a) state the following regarding park roads:

Park roads will be well constructed, sensitive to natural and cultural resources, reflect the highest principles of park design, and enhance the visitor experience. Park roads are generally not intended to provide fast and convenient transportation; rather, they are intended to enhance the quality of a visit while providing for safe and efficient travel with minimal or no impacts on natural and cultural resources. For most parks, a road system is already in place. When plans for meeting the transportation needs of these parks are updated, a determination must be made as to whether the road system should be maintained as is, reduced, expanded, reoriented, eliminated, or supplemented by other means of travel Park road designs are subject to NPS *Park Road Standards*, which are adaptable to each park's unique character and resource limitations. Although some existing roads do not meet current engineering standards, they may be important cultural resources whose values can and should be preserved with attention to visitor safety.

The NPS has developed road standards for national park units as a guide for the planning, design, construction, and maintenance of park roads. Applicable standards include the following (NPS 1984):

- Park roads are intended to enhance the visitor experience while providing safe and efficient accommodation of park visitors and to serve essential management access needs.
- Park roads should have a surface that will adequately support the planned volume and weights of vehicles without failure in order to keep non-routine maintenance to a minimum.
- For projects that involve roadway resurfacing, restoring, and rehabilitating, all hazardous locations along a roadway should be identified, and accident records should be analyzed to determine if roadway features are contributing to accidents.
- If bicycling is encouraged, consideration must be given to provide safe travel ways. Where separate bikeways are not practical, and where a wider road section can be accommodated, shoulder areas may be improved to provide reasonable separation of bicycles from high-speed traffic.

In addition, the California Coastal Act, Article 6, Section 30254 requires that expanded public works facilities, which includes public roadways, "be designed and limited to accommodate needs generated by development or uses permitted consistent with the provisions of this division[.]"

3.2.2 Affected Environment

3.2.2.1 Traffic

In 2014, average daily traffic within the study area was 1,369 vehicles. Average daily traffic for 2034 is projected to be 1,452 (pers. comm. R.J. Suokko 2014), an approximate 6 percent increase over 2014. Park roads within PRNS generally provide an acceptable level of service to automobiles. However, congestion and insufficient parking occurs near the Point Reyes

Lighthouse on weekends and holidays during whale migration season (December to April). Seasonal restrictions are put into effect during winter months to address these issues at this time of high visitation, when visitors must ride a shuttle. Shuttle buses operate 20 days per year with 20-25 trips daily. All winter passengers board the shuttle at the Kenneth C. Patrick Visitor Center, meaning that they drive more than half of SFDB before boarding the shuttle (Nelson/Nygaard 2009, Jacobs n.d.).

3.2.2.2 Safety

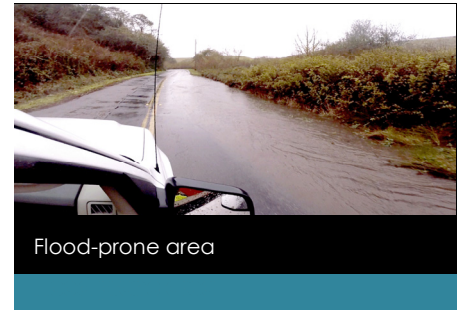
Because SFDB travels through PRNS, most accidents are reported to the NPS rather than California Highway Patrol. Therefore, NPS accident data was used for this analysis. The NPS provided accident data for SFDB for 2009, 2010, and 2012 through mid-June 2014. During this time period, a total of 44 accidents were reported, 9 of which resulted in injuries. Most accidents occur during the daytime, especially Saturday and Sunday evenings when visitors are going home. Seventeen of the reported 44 accidents occurred approximately between the intersection with Pierce Point Road (PM 12) and the turnoff for Drakes Estero (PM 10), representing about 39 percent of the accidents along SFDB (pers. comm. N. Knight 2014). This is the flood-prone section of the roadway, which was identified by NPS law enforcement as “by far the most problematic section of road in the park.” According to Marin County Maintenance staff, this section of SFDB is particularly bad during winter, when water remains on the road all season and gets deeper with rain runoff (pers. comm. P. Maendele 2014).

Wheel rutting, edge failures and drop-offs, potholes, and large pavement patches exist in the area subject to annual flooding. South of the Drakes Beach access road, severe wear and degradation is evident, such as rutting in the wheel paths, potholes, and edge raveling. Areas near the ranches at the southern end of the study area exhibit some of the highest pavement distress (Jacobs n.d.). These conditions pose safety issues for drivers in the study area.

Large commercial vehicles that serve the ranches along SFDB mix with passenger vehicles, as well as cyclists traveling the road. Due to the narrow width of the road, drivers of some of the larger commercial vehicles are forced to use both lanes, creating a safety hazard for other users.

The park operates a mandatory shuttle service during whale migration season (December to April) from the Kenneth C. Patrick Visitor Center to the Point Reyes Lighthouse and back (Nelson/Nygaard 2009, Jacobs n.d.). The sections of road between the Kenneth C. Patrick Visitor Center to the Point Reyes Lighthouse and back are not suitable for buses because of the road’s narrow width, radius, and pitch. Buses are unable to stay in lane to negotiate turns, which has resulted in some near misses with bicyclists (pers. comm. N. Knight 2015).

SFDB is currently classified as Class III bike shared use route, however, the PRNS web site notes that the park’s narrow and winding roadways do not safely accommodate large numbers of bicyclists. The park limits the maximum number of bicyclists in any one group to 10



Flood-prone area



Large commercial truck on SFDB



Hay truck occupying both travel lanes

(Jacobs n.d., NPS 2015a). The 2007 *Marin Countywide Plan* and the NPS 1980 *General Management Plan*, as well as more recent general management planning documents, do not recommend additional infrastructure for bicycles along SFDB (Marin County 2007, NPS 1980).

3.2.2.3 Access

Several public and private access points exist along SFDB, including Chimney Rock Road at the southern end of the study area and Mount Vision Road at the northern end, as well as Drakes Beach Road and the roads to Point Reyes Beach North and Point Reyes Beach South. These roads provide public access to recreation destinations. Additional public recreation access points include the Bullpoint Trail and Estero trailheads. SFDB also provides access to roads that serve a wireless telegraphy receiving station (RCA station), a Coast Guard communications center and historic cemetery, and the Drakes Bay Oyster Company (now closed and planned to be managed as wilderness by the NPS). Additional private access points include a driveway to an unmarked destination (23250 SFDB), driveways for eight ranches (denoted by letters A-G and M), which can include driveways to homes, as well as separate driveways to ranching operations and fields.

3.2.3 Environmental Consequences

3.2.3.1 No Action Alternative

Under the No Action Alternative, no changes to the capacity of the roadway, no safety improvements, and no changes to access points along the road would occur. The road would continue to be narrow, with poor pavement conditions, poor sight distance in certain areas, and prone to periodic flooding between PM 10 and PM 12. Large vehicles, such as school buses, shuttle buses, and commercial trucks transporting goods to and from the ranches, would continue to occupy both travel lanes, particularly where the road is narrow and curves are sharp. This would create hazardous situations for cyclists and other travelers. These conditions would not support the NPS *Management Policies* or the NPS road standards to provide for safe and efficient travel/accommodation of park visitors, a surface that will adequately support the weights of vehicles without failure, and to provide safe travel ways for bicycling (NPS 1984, NPS 2006a).

Under the No Action Alternative, SFDB would not fully support guidance from the NPS *Management Policies 2006* calling for park roads to be “well constructed, sensitive to natural and cultural resources, reflect the highest principles of park design, and enhance the visitor experience.” The deteriorating quality of SFDB would not “enhance the quality of a visit while providing for safe and efficient travel with minimal or no impacts on natural and cultural resources.” In addition, the No Action Alternative would not support NPS road standards, as SFDB would not have “a surface that will adequately support the planned volume and weights of vehicles without failure,” would not address deficiencies that may be contributing to accidents, and would not provide shoulders to accommodate cyclists and keep them separate from traffic.

3.2.3.2 Action Alternative

Traffic

The existing and projected traffic volumes in the study area do not warrant capacity improvements. The proposed improvements to SFDB within the study area would not change the capacity of the roadway.

Construction activities to implement the Action Alternative would temporarily impact access and traffic during weekdays. A maximum 30-minute delay would affect visitors; NPS employees and service providers; and ranchers, their families and employees enroute to destinations on the peninsula. This delay and a reduction to one operating travel lane would also create temporary traffic lines and congestion, which would be particularly intensified during whale watching

season. However, construction would occur on weekdays, to avoid peak travel times. Avoidance, minimization, and mitigation measures described below would help offset these impacts.

Safety

The Action Alternative would improve safety by replacing the deteriorating pavement, providing a consistent 24-foot width including paved shoulders, improving sight distance, reducing the risk of flooding on the roadway, and improving the clear zone adjacent to the road. The Action Alternative would support the NPS *Management Policies* to provide for safe and efficient travel/accommodation of park visitors and the NPS road standards to provide a surface that will adequately support the weights of vehicles without failure, to keep non-routine maintenance to a minimum, and to provide safe travel ways for bicycling (NPS 1984, NPS 2006a).

Resurfacing, restoring, and rehabilitating SFDB would remove existing potholes and other damaged areas of the road. This would eliminate the swerving action drivers take to avoid these hazards, reducing the potential for accidents, including driving off the road and head-on collisions. Potholes, cracks and other uneven roadway surfaces can be particularly hazardous for bicyclists. The smoother roadway surface would improve safety for these users.

The slightly wider paved surface and improved clear zone would provide a recovery area for errant vehicles and help prevent them from driving off the road. The paved shoulders would also improve the safety of bicyclists by providing some degree of separation from vehicles. As a result, the road would more properly function as a Class III bike shared use facility. The wider road and improved clear zone would better accommodate large vehicles such as school buses, shuttle buses, and commercial trucks. These vehicles would not need to occupy two lanes as they do currently, particularly on curves. Safety would be improved not only for drivers and passengers of these vehicles, but for other travelers and cyclists sharing the road with these large vehicles.

Improvements to curves and vertical alignments at various locations along the road would improve sight distance in certain areas, which would reduce the potential for head-on collisions and vehicle-animal collisions, particularly during foggy weather. These improvements would also reduce the potential for accidents where straight roadway sections lead to sharp curves.

Raising and realigning the road in the flood prone segment, as well as installing rockery walls on the south side of the road, would reduce the risk of flooding and help keep mud and water from encroaching upon SFDB. These improvements would not only help keep the road open but would create safer driving conditions. Other improvements that would prevent water, mud, and debris from entering the roadway include installation of asphalt curb and gutter in certain locations and reconditioning of shoulders and ditches along the entire roadway alignment.

The road would be restriped to clearly demarcate the roadway centerline and the edge of travel lanes. Asphalt curb and gutter in certain locations would also serve as a clear demarcation of the edge of the road. All traffic control signs within the study area would be reviewed and replaced, if needed, to meet current standards. Advanced warning signs would also be considered and may be included at approaches to areas where speed limits would be reduced, such as ranches.

Under the Action Alternative, SFDB would support guidance from the NPS *Management Policies* 2006 described above. The improved road would “enhance the quality of a visit while providing for safe and efficient travel with minimal or no impacts on natural and cultural resources.” In addition, the Action Alternative would support NPS road standards, as resurfacing and widening SFDB would “adequately support the planned volume and weights of vehicles [including the mandatory seasonal shuttle] without failure,” and would address deficiencies that may be contributing to accidents. The new shoulders would more safely accommodate cyclists.

California Coastal Act Policies

The Action Alternative is intended to restore the structural integrity of the roadway and enhance safety for all users while also reducing ongoing maintenance requirements. To accomplish this, the Action Alternative has been designed to widen the roadway to a consistent 24-foot width and generally follow the existing roadway alignment, except in localized areas where it is necessary to soften curves, improve sight distance, or reduce flooding. For these reasons, the Action Alternative would be maximally consistent with the provisions of the California Coastal Act and the expansion of the facility would be limited to improvements needed to accommodate the existing user needs and purpose of the roadway.

Conclusion

The Action Alternative would result in overall long-term beneficial impacts to safety for the reasons described above. Localized reconstruction and safety improvements would reduce the effect of existing hazards, such as flattening a vertical alignment, banking the roadway through a curve, and cutting back a side slope to improve driver safety and sight distance. The wider roadway would also better accommodate ranch equipment and trucks that currently occupy both travel lanes. In addition, the Action Alternative would support the NPS *Management Policies* and NPS road standards. Construction impacts would be mitigated to less than significant levels with implementation of the measures described below.

3.2.4 Avoidance, Minimization, and/or Mitigation Measures

The following measures would be implemented to minimize impacts:

- At least one lane of traffic shall remain open during construction with a maximum 30-minute delay. If any delay longer than 30 minutes is anticipated to accomplish specific construction activities, then notice shall be provided to the public, relevant local agencies, school districts, and emergency service providers.
- Emergency vehicles shall be permitted to pass through the construction limits during construction without delay.
- All construction shall occur on weekdays during daylight hours (1/2 hour after sunrise to 1/2 hour before sunset).

3.3 Socioeconomics

This section addresses potential social and economic impacts to ranching operations, community services, and visitor expenditures as a result of the project. The study area includes residences and commercial operations that are served by SFDB on the Point Reyes peninsula.

3.3.1 Regulatory Setting

NEPA policy (40 CFR § 1500.2) requires federal agencies to “...restore and enhance the quality of the human environment and avoid or minimize any possible adverse effects of their actions upon the quality of the human environment.” NEPA regulations (40 CFR § 1508.14) define human environment as “the natural and physical environment and the relationship of people with that environment.” Economic or social effects are to be addressed in a NEPA document when they are interrelated with natural or physical effects.

3.3.2 Affected Environment**3.3.2.1 Community and Emergency Services**

The West Marin Elementary School and two private preschools are located in the town of Point Reyes Station, east of the study area. School bus service is provided to the ranches along SFDB (Jacobs n.d.). Both the NPS and the California Highway Patrol respond to motor vehicle accidents on the road, and NPS law enforcement also responds to other emergency situations within the

peninsula. The Point Reyes Fire Station, located in the town of Point Reyes Station, protects over 100 square miles of parkland, ranchland, and rural communities, providing fire, medical, and rescue emergency services to citizens and visitors. Partners include United States Park Service Rangers and Firefighters from the Point Reyes National Seashore (County of Marin 2014).

3.3.2.2 Ranching

Ranching families have lived and worked on the Point Reyes peninsula for several generations. Ranching is still an important industry on the peninsula, and Point Reyes National Seashore's enabling legislation allows for ranching operations to continue. Livestock currently graze about 24,000 acres within Point Reyes and the Northern District of Golden Gate National Recreation Area, while an additional 1,000 acres are cultivated as silage feed for livestock. About 6,000 cattle reside year-round on the 6 dairies and 24 beef ranches that operate within the park (NPCA 2009). These ranches provide a "vital source of income for the local community" (NPCA 2009). However, the park's agricultural activities comprise a small percentage of total agricultural value in Marin and Sonoma counties, approximately 0.9 percent (BAE 2006).

SFDB provides primary access to the various beef and dairy ranches still in operation on the Point Reyes peninsula. With the exception of specific visitor use destinations, much of the land on either side of SFDB is a historic working ranch (see map at Figure 9) (NPS 2009). Ranchers rely on SFDB for conducting ranch operations and transportation of goods. Bulk milk hauler trucks use SFDB on a daily basis to pick up milk from dairy ranches along the road. Sections of SFDB in the vicinity of the ranches exhibit some of the highest pavement distress, as well as highest frequency of patching and pavement overlays. The large, heavy commercial trucks that transport goods to and from the ranches likely contribute to pavement degradation (Jacobs n.d.).

Some elements of ranch operations are located within the existing county roadway easement, including cattle under-crossings, fences, and irrigation lines. Two cattle under-crossings associated with Historic F Ranch exist between PM 7 and PM 8 (see Figure 9). The under-crossings are constructed with wood girders and concrete retaining wall bridges that do not meet national transportation standards, and the insides of supporting log "wing walls" are starting to rot. These under-crossings are not maintained by Marin County or the NPS. Cattle fences line SFDB and are within the county roadway easement in some areas. Ranchers use existing culverts to convey irrigation lines underneath the roadway. In the northern end of the study area, a section of culvert pipe has become separated from the culvert due to heavy trucks passing over poorly constructed culverts (Jacobs n.d.).

Requests for improvements to SFDB have been received for many years from visitors and ranchers. The road's narrow width, poor site distance, and the deteriorated pavement create difficult conditions for large commercial vehicles to navigate. Standing water on the roadway is



School bus stop along SFDB for ranch families



Cattle fencing along SFDB



Cattle under-crossing along SFDB

also a hazard and periodic closures during flood events impede commercial deliveries (Jacobs n.d.).

3.3.2.3 Visitor Expenditures

Trip-related spending by NPS visitors generates and supports a considerable amount of economic activity for park concessionaires and adjacent communities throughout the NPS. At PRNS, total visitor spending was \$109,588,900 in 2013 (NPS 2014b). As mentioned in the Recreation and Visitor Use section, SFDB also provides access to two of the park's three visitor centers, which are operated by concessionaires. However, no specific data is available for the visitor centers served by SFDB. Concession receipts parkwide for 2005 (the most recent year available) totaled \$436,000 (BAE 2006). Based on visitation trends (described under Recreation and Visitor Use), current concession receipts are likely similar or higher.



Detached culvert pipe adjacent to roadway

3.3.3 Environmental Consequences

3.3.3.1 No Action Alternative

Under the No Action Alternative, SFDB would continue to deteriorate and road closures would occur during flood events. As roadway conditions worsen, ongoing maintenance would increase, particularly where standing water further damages pavement. Ranchers who rely on SFDB as their sole access and means of transporting goods could experience adverse economic impacts primarily related to road closures. Ranch residents, their workers, and emergency service providers would experience similar impacts, including school bus delays and safety issues, while traveling to and from their homes, places of employment, and during emergency situations. However, no specific economic data is available related to impacts of road closures to ranchers. Although precise impacts cannot be quantified, impacts are expected to be slight.

As mentioned under Recreation and Visitor Use, visitors to some of the park's most popular destinations would be adversely impacted under the No Action Alternative, which could affect visitor spending. Visitors on a limited schedule may not reach these destinations at all during road closures due to flooding, which could adversely impact the concessionaire at the Kenneth C. Patrick Visitor Center at Drakes Beach. Continued deterioration of the roadway could also dissuade cyclists from visiting the park, potentially reducing concessionaire revenues. However, no specific economic data is available for this visitor center. Although precise impacts cannot be quantified, impacts are expected to be slight. In addition, concessionaire and park employees would continue to be impacted by road closures and may not be able to reach their work destinations.

3.3.3.2 Action Alternative

Community and Emergency Services

Under the Action Alternative, improved sight distance, a wider roadway, and an improved surface would help bus drivers and emergency service providers use the road more safely and efficiently. The improvements would reduce the amount of ongoing roadway maintenance and repair, which would likely increase as the road continues to deteriorate. As a result, school bus and emergency services would experience beneficial impacts from reduced delay. Periodic roadway closures due to flooding would also be less likely, thereby providing a more reliable transportation route for these community services. Traffic delays during construction, as discussed in the Transportation Section, could temporarily affect school bus service. Emergency service providers would be given priority to travel with minimal or no delay.

Ranching

Commercial drivers servicing the ranches along SFDB would experience the same benefits as the school bus drivers and emergency providers discussed above.

No right-of-way acquisitions would be required under the Action Alternative. If cattle fences that are within the road right-of-way need to be removed to accommodate construction, they would generally be replaced in-kind at the edge of the road right-of-way. Therefore, no right-of-way or permanent fencing impacts would occur.

Temporary disruption to ranch operations could occur during construction. In addition to the traffic delays discussed in the Transportation Section, traffic could be disrupted when the cattle crossings and any culverts containing irrigation lines are replaced. Additionally, cattle may need to be temporarily moved to other ranch areas if fences within the existing roadway right-of-way need to be moved.

Visitor Expenditure

As a result of the Action Alternative, increased visitor spending could occur at the two visitor centers served by SFDB. Road closures resulting from flooding would be reduced, thereby reducing an impediment to visitor access. Ongoing maintenance tasks for repairing pavement and other roadway damage, which could result in transportation delays, would also be reduced. Additionally, creating a safer environment for cyclists by providing wider shoulders, better sight distance for drivers, and a smoother riding surface may draw more cyclists to the park. During construction, the traffic delays discussed in the Transportation Section could reduce visitation, resulting in a temporary reduction in visitor expenditures.

Conclusion

The Action Alternative would improve the convenience, safety, and reliability of the roadway for access to park visitor centers, school bus and emergency services, transport of goods, and access to surrounding communities and services for ranch residents. Increased visitor expenditure could also occur. The result would be long-term, beneficial impacts. Traffic delays during construction would be mitigated by the measures described below.

3.3.4 Avoidance, Minimization, and/or Mitigation Measures

The following measures would be implemented to minimize impacts to the public:

- At least one lane of traffic shall remain open during construction, with a maximum 30-minute delay. If any delay longer than 30 minutes is anticipated to accomplish specific construction activities, then notice shall be provided to PRNS, the public, relevant local agencies, school districts, and emergency service providers.
- Emergency vehicles shall be permitted to pass through the construction limits during construction without delay.
- The contractor shall provide the construction schedule to residences within or adjacent to the construction limits and notify adjacent residences at least 48 hours in advance of construction work.

3.4 Recreation and Visitor Experience

This section describes impacts to people visiting and recreating at PRNS destinations that are served by SFDB (the study area). SFDB serves popular visitor destinations within PRNS, specifically those on the Point Reyes



View of natural and cultural resource attractions accessed via SFDB

peninsula. No other road provides such access.

3.4.1 Regulatory Setting

The NPS *Management Policies 2006* directives regarding visitor use, safety, and roads (NPS 2006a) include:

- The NPS is committed to providing appropriate, high-quality opportunities for visitors to enjoy the parks, and the Service will maintain within the parks an atmosphere that is open, inviting, and accessible.
- The NPS strives to protect human life and provide for injury-free visits. The NPS will seek to provide a safe environment for visitors and employees, and will work cooperatively with other agencies, organizations, and individuals to carry out this responsibility. The NPS will strive to identify and prevent injuries from recognizable threats to the safety of persons and to the protection of property. When practicable and consistent with congressionally designated purposes and mandates, the NPS will reduce or remove known hazards and apply other appropriate measures.
- Park roads³ will be well constructed, sensitive to natural and cultural resources, reflect the highest principles of park design, and enhance the visitor experience. Park roads are generally not intended to provide fast and convenient transportation; rather, they are intended to enhance the quality of a visit while providing for safe and efficient travel with minimal or no impacts on natural and cultural resources.

California Coastal Act Policies

The California Coastal Act, described in Chapter 1, identifies policies for public access and recreation. Applicable policies are listed below (California Coastal Commission 2012).

- Section 30210. Maximum access . . . and recreational opportunities shall be provided for all the people consistent with public safety needs and the need to protect public rights, rights of private property owners, and natural resource areas from overuse.
- Section 30252. The location and amount of new development should maintain and enhance public access to the coast by . . . providing non-automobile circulation . . .

3.4.2 Affected Environment

3.4.2.1 Recreation

Point Reyes National Seashore offers San Francisco Bay Area residents and visitors the opportunity to experience beaches, hiking, bird watching, and other outdoor activities and interpretive programs in an unspoiled natural setting. The park is also a prime location for observing marine mammals, including northern elephant seals and whales. Although the Seashore's ocean beaches are not safe for swimming, they remain a primary attraction to visitors who come for their natural beauty. Bird watching, visiting visitor centers, picnicking, photography, and whale watching also attract substantial numbers of visitors (Nelson/Nygaard 2009). In addition, park roads are also often "an end in themselves, rather than just a means to an end" by providing unique driving experiences for visitors (NPS 1984).



Warnings at North Beach and South Beach

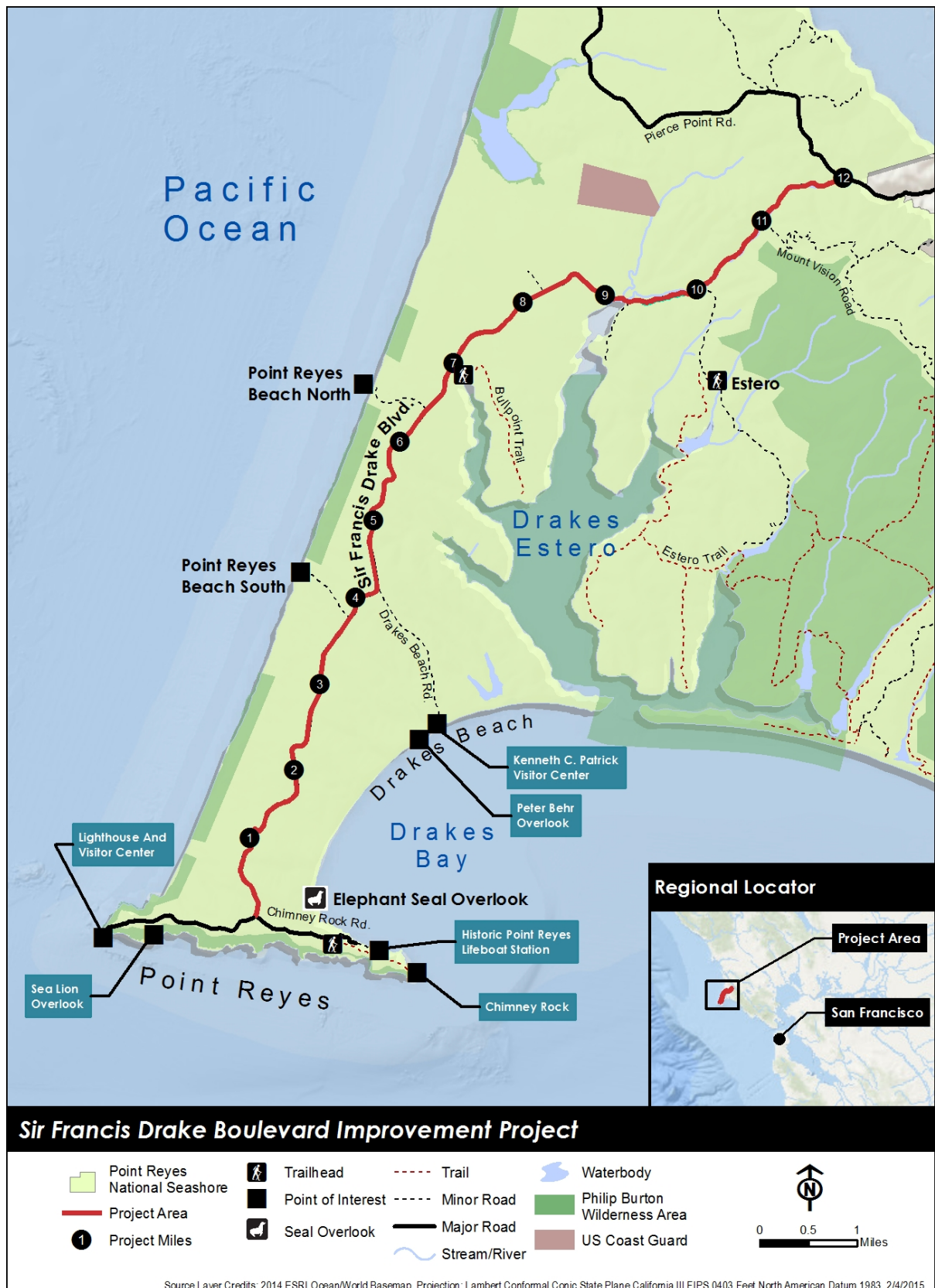
³ Although SFDB is maintained by Marin County rather than the NPS, it provides access to some of the park's most popular attractions.

SFDB provides access to several popular recreation destinations within PRNS, including two of the park's three visitor centers (see Figure 8). According to a transit study prepared for the park, "large numbers" of visitors come to Point Reyes Lighthouse and Visitor Center, particularly during whale migration season (December through mid-April). The Kenneth C. Patrick Visitor Center at Drakes Beach draws visitors with an aquarium, whale fossils, and a cross-section of a sixteenth century cargo ship. Other major destinations include a diverse network of hiking trails, beaches, and several museum and educational facilities, many of which are accessed through SFDB (Nelson/Nygaard 2009), including:

- Point Reyes Beach North, which is the northern access point to the 11-mile long Point Reyes Beach on the Pacific Ocean. The parking area and beach are surrounded by dunes, giving the area a remote feeling. Signs posted at the beach advise against surfing, wading, and swimming for a variety of reasons. However, visitors do swim and surf at this beach, and also fish, beach comb, and play in the sand.
- Point Reyes Beach South, which is the southern access point to Point Reyes Beach and is similar to North Beach.
- Point Reyes Lighthouse and Lighthouse Visitor Center (shown together as the Lighthouse Visitor Center on Figure 8), which is a "major attraction" and the destination of the Point Reyes Headlands shuttle (Nelson/Nygaard 2009). Attractions include the visitor center, lighthouse, coastal scenery, wildflowers, seabirds, sea lions, and whales. The lighthouse is also a popular location for watching Pacific gray whales migrating along the coast from December to April, and is one of the locations the NPS recommends visitors to view whales (NPS 2014b).
- Sea Lion Overlook, where sightings of California and Steller sea lions, although extremely rare in the park, have been recorded (Point Reyes National Seashore Association 2013).
- Chimney Rock, which is popular in winter and spring, when visitors can see sea lions, elephant seals, harbor seals, and seabirds. The NPS recommends Chimney Rock as one of the best locations to see whales. The Chimney Rock Trail offers "a spectacular hike with views of Drakes Bay and the Pacific Ocean and [is] renowned for great spring wildflowers" (NPS 2014c, 2014d).
- Historic Point Reyes Lifeboat Station, which is used as an educational facility for non-profit groups learning about the park's natural and cultural resources (NPS 2014c).
- Elephant Seal Overlook, which is the best location within the park to view elephant seals, particularly February through March (NPS 2014d).
- Drakes Beach, which is very popular for its wide stretch of beach backed by dramatic white sandstone cliffs, a small cafe, and a visitor center. The NPS recommends Drakes Beach as one of the best locations to view whales in the park (NPS 2014c, 2014d).
- Peter Behr Overlook, which is on a bluff top overlooking Drakes Bay south of the Kenneth C. Patrick Visitor Center, and is accessed by a short trail along Drakes Beach.
- Several trails around Drakes Estero. The Estero Trail offers "excellent bird watching opportunities and the possibility of seeing bat rays and leopard sharks swimming just below the water's surface" (NPS 2014d).



Figure 8: Recreation Destinations Served by SFDB



- The Inverness Ridge Trail, accessed from Mount Vision Road, which provides access to the Philip Burton Wilderness Area and Research Natural Area, a primitive zone managed in accordance with the Wilderness Act. These lands offer a sense of immersion in nature and a minimum of noise or visual intrusion (NPS 2014c). (This trail is at the east end of Mount Vision Road and is not shown on the map in Figure 8.)
- Drakes Estero, which is popular with birdwatchers. This area can be accessed from trails originating along SFDB (Nelson/Nygaard 2009). Drakes Estero is also designated as Sir Francis Drake's most probable landing location; a historical marker has been placed on Drakes Beach and the landing is interpreted at the Kenneth C. Patrick Visitor Center (Point Reyes National Seashore Association 2013).

3.4.2.2 Visitation

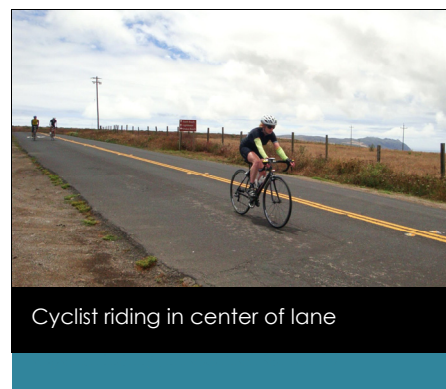
Despite a few decreases in certain years, PRNS visitation has steadily increased over the past 10 years (2004-2014), demonstrating a 24.2 percent increase. The most recent years have shown substantial change. Visitation increased by 13.9 percent in 2012 and by 24.7 percent in 2013, reaching the highest visitation ever recorded. Visitation for 2014 decreased by 7.8 percent, but was still above 2012 levels (NPS n.d.a).

Visitation at the park varies with the seasons. Over the past 10 years (2004 through 2013), the park's highest visitation has occurred during the months of July through September, primarily on weekends (NPS n.d.a). Gray whale migration also draws visitors from December through April. President's Day weekend in February is popular because it often coincides with the peak whale watching season, and is typically a weekend when both locals and San Francisco Bay Area visitors come to Point Reyes (Nelson/Nygaard 2009, NCPA 2009).

Nearly 60 percent of all visitors spend between two and six hours in the park. One in 10 visitors stay less than two hours, and visitors tend to stay longer during warmer weather seasons. About one-third of visitors stay overnight at or near the park (Nelson/Nygaard 2009).

The vast majority of PRNS visitors arrive by private automobile. Auto traffic tends to be higher in the afternoon than the morning. About seven percent of visitors arrive by tour bus and two percent arrive by bicycle. The park and surrounding area draws some long-distance cyclists who use SFDB, particularly on weekends (Nelson Nygaard 2009); however, the NPS has no data about visitors who bike on SFDB. There are no designated bike lanes in the park, although the route is classified by Marin County as a Class III bike shared route (Jacobs n.d.). Bicycling and walking on SFDB can be difficult because of the narrow shoulder, which presents a safety hazard to bicyclists (Nelson/Nygaard 2009).

The park experiences auto congestion and effects of insufficient parking near the Point Reyes Lighthouse on weekends and holidays during whale migration season (December to April). Seasonal restrictions due to limited parking at the Chimney Rock and Lighthouse parking areas are put into effect during winter months when visitation is high due to whale watching. During these times, visitors must ride a shuttle. Shuttle buses operate 20 days per year with 20 to 25 trips daily. Like general park visitors, the vast majority of shuttle users come to the park in private



Cyclist riding in center of lane



Overflow parking on roadsides leading to the lighthouse

vehicles. All winter shuttle passengers board the shuttle at the Kenneth C. Patrick Visitor Center on Drakes Beach, meaning that they drive more than half of SFDB before boarding the shuttle (Nelson/Nygaard 2009, Jacobs n.d.).

As mentioned in the Transportation section, SFDB experiences the highest traffic counts of all park roads based on average annual data from 2003 through 2013. Traffic counts along SFDB have been relatively steady from 2003 through 2011. A substantial increase occurred in 2012 and 2013, by 25.8 percent and 44.8 percent, respectively, despite the 16-week government shutdown in 2013 that resulted in a decline of over 6.4 million visitors NPS-wide (NPS n.d.a). However, traffic volumes decreased by 13.7 percent in 2014 based on data from Marin County (pers. com. R.J. Suokko 2014).



3.4.3 Environmental Consequences

3.4.3.1 No Action Alternative

Under the No Action Alternative, SFDB would continue to deteriorate and road access restrictions would occur during flood events. As roadway conditions worsen, ongoing maintenance would increase, particularly where standing water further damages pavement. Visitors to some of the park's most popular destinations would be adversely impacted, particularly as traffic counts on SFDB continue to increase.

As mentioned above, most visitors typically spend two to six hours in the park. Visitors on a limited schedule, particularly those who spend less than two hours at the park, may not reach these destinations at all during potential road closures due to flooding. Although other areas of the park would remain open to visitors, many of the park's most iconic destinations and experiences, such as visiting the lighthouse and participating in whale watching, may be missed. Because standing water on the flood-prone section of SFDB is most prevalent during winter, visitors who come to the peninsula to watch whales could be especially affected. Wildlife-viewing opportunities are particularly time-sensitive, so a delay of a few hours could mean the difference between experiencing an animal sighting or not. No data on flooding frequency exists; therefore, it is not possible to predict how often and for how long these impacts would occur.

No adverse impacts are expected under CEQA. Ongoing maintenance activities would not increase the use of, or substantially deteriorate, the park's recreational facilities. In addition, ongoing maintenance does not include the construction or expansion of recreational facilities. Therefore, there would be no adverse physical effect on the environment.

The No Action Alternative would not support the provisions of the California Coastal Act. The Coastal Act states that accessways at PRNS should be maintained open to the public, which is not the case when the SFDB is closed due to flooding. In addition, this alternative would not improve safety or road conditions for cyclists or seasonal shuttles.

3.4.3.2 Action Alternative

The Action Alternative would improve the convenience, safety, and reliability of SFDB for access to park visitor centers and other popular destinations in PRNS. Resurfacing and rehabilitating the road would preserve this highly traveled transportation route for continued visitor use. Improved sight distance, widened shoulders, and curve modifications would enhance safety. In addition, raising and realigning the roadway between PM 9 and PM 10 would improve safety in this area where accidents are most common. Roadway closures due to flooding would also be less likely, thereby providing a more reliable transportation route for park visitors. Resurfacing

and widening the shoulders would improve safety and riding experience for cyclists, which may encourage more cyclists to visit the park. Improvements to pullouts would provide safer areas for visitors to pull over while safely allowing traffic to pass. The roadway improvements proposed under the Action Alternative would have long term beneficial impacts for park visitors accessing the destinations served by SFDB.

Short-term, adverse impacts would occur during construction. Project construction could coincide with peak visitation (July through September), and construction-related delays could discourage some people from visiting the peninsula. However, such delays would occur during weekdays, when visitation is lower, and for short periods of time. In addition, at least one lane of traffic would remain open during construction with a maximum 30-minute delay, as described under Avoidance, Minimization, and/or Mitigation Measures, below.

California Coastal Act Policies

The Action Alternative would support the provisions of the California Coastal Act by helping ensure convenient, safe, and reliable access to coastal recreational opportunities. This alternative would also provide safer options for non-automobile use by improving shoulders and the roadway surface for cyclists, and by improving the road for seasonal shuttles.

Conclusion

Impacts to recreation and visitor use would be beneficial, as the Action Alternative would improve the convenience, safety, and reliability of SFDB for access to park visitor centers and other popular destinations in PRNS, including roadside pullouts. The Action Alternative would also support the provisions of the California Coastal Act. Short-term, adverse impacts that would occur during construction will be minimized with implementation of the measures described below.

3.4.4 Avoidance, Minimization, and/or Mitigation Measures

The following measures would be implemented to minimize impacts:

- At least one lane of traffic shall remain open during construction with a maximum 30-minute delay. If any delay longer than 30 minutes is anticipated to accomplish specific construction activities, then notice shall be provided to the public, relevant local agencies, school districts, and emergency service providers.
- Emergency vehicles shall be permitted to pass through the construction limits during construction without delay.
- All construction shall occur during on weekdays during daylight hours (1/2 hour after sunrise to 1/2 hour before sunset).

3.5 Historic Resources

This section describes impacts expected to historic resources. SFDB provides the only access to several historic working ranches that are the predominant land use on the Point Reyes peninsula. SFDB itself has been identified as a contributing feature of eligible historic districts on the peninsula. The ranching structures that could be affected by the Action Alternative were identified within the Area of Potential Effects (APE) defined for this project. The APE is the geographic area within which actions may change the character or use of historic properties, and also serves as the study area for historic resources. The APE for this project is a 60-foot wide corridor following the SFDB centerline. The APE was expanded to include pull-outs and parking areas, as well as right-of-way and easements in which construction would occur. Historic resources in the study area are shown on Figure 9.

3.5.1 Regulatory Setting

NEPA establishes that the federal government use all practicable means to “assure for all Americans . . . culturally pleasing surroundings,” and “preserve important historic, cultural, and natural aspects of our national heritage . . .” (42 United States Code [USC] 4331[b][2]).

The National Historic Preservation Act (NHPA) of 1966, as amended (54 USC 300101 - 307108), and its implementing regulations, Protection of Historic Properties (36 CFR 800), requires federal agencies to take into account the effects of their actions on historic properties for any federal undertaking. Historic properties are defined as those that are included in the National Register of Historic Places (NRHP) or that meet specific criteria (are “eligible”) for listing in the NRHP, which is the official list of America’s historic places worthy of preservation. An effect on a historic property is “an alteration to the characteristics of a historic property qualifying it for inclusion or eligibility for the NRHP” (36 CFR 800.16).

The NPS *Management Policies 2006* states that “the Park Service will provide for the long-term preservation of, public access to, and appreciation of the features, materials, and qualities contributing to the significance of cultural resources.” In particular:

The treatment of a cultural landscape will preserve significant physical attributes, biotic systems, and uses when those uses contribute to historical significance....Many cultural landscapes are significant because of their historic land use and practices. When land use is a primary reason for the significance of a landscape, the objective of treatment will be to balance the perpetuation of use with the retention of the tangible evidence that represents its history. Contemporary alterations and additions to a cultural landscape must not radically change, obscure, or destroy its significant spatial organization, materials, and features.

According to the NPS *Management Policies 2006*, new buildings, structures, landscape features, and utilities may be constructed in a cultural landscape if:

- new construction is designed and sited to preserve the landscape’s integrity and historic character; and
- the alterations, additions, or related new construction is differentiated from, yet compatible with, the landscape’s historic character

Under CEQA, a historical resource is defined as one that is listed in, or eligible for listing in, the California Register of Historical Resources (which includes resources listed on the NRHP); included in a local register of historical resources; or determined by a lead agency to be significant. An effect that may cause a substantial adverse change in the significance of an historical resource is considered a significant effect on the environment (CA Code of Regulations, Title 14, Division 6, Chapter 3, §15000–15387). For purposes of this project, CEQA requires determining whether the project would cause a substantial adverse change in the significance of a historical resource.

California Coastal Act Policies

The California Coastal Act Policies state that, where development would adversely impact archaeological or paleontological resources as identified by the State Historic Preservation Officer, reasonable mitigation measures shall be required (California Coastal Commission 2012).

3.5.2 Affected Environment

3.5.2.1 History

Point Reyes' cool, moist climate, which provides near-ideal conditions for growing abundant grass and feed for dairy cows, attracted early American settlers in the 1850s.

Abundant grass and forbs, a long growing season, and sufficient fresh water supplies promised productivity well in excess of domestic need, and small dairy ranches proliferated. In 1857, a San Francisco law firm obtained title to over 50,000 acres on the Point Reyes peninsula, which they divided into a tenant dairy enterprise in 1866. The land was further subdivided into 33 ranches, which were named by letters of the alphabet from A to Z. Each ranch had a similar layout that consisted of a house, milking yard, dairy house, horse barn, calf shed, pig pens, and other outbuildings as needed. Large milk barns were added later. Gum eucalyptus windbreaks were a common feature, but most were later replaced with Monterey Cypress.

Portions of what is now SFDB were developed between 1857 and 1877 to connect the peninsula's tenant ranches. In 1874 a new road was constructed between Tomales Bay and Drakes Estero, near Historic G Ranch. By 1916 the road from Inverness had been improved as far as Historic G Ranch (see Figure 9). The road was paved in the 1920s and rerouted around the core of the Historic F Ranch. Residents requested road improvements from Historic G Ranch to the Point Reyes Lighthouse in 1924, and a bond was passed in 1925 to build a permanent road. Road construction quickly ensued, and by 1931 the road that is now SFDB took on its current alignment (NPS 2014e, Leach-Palm et al. 2015).

Beginning in 1935, conservationists proposed purchasing the dairy properties on the peninsula to create recreational areas along the coast. A number of acres were deeded and purchased for a state park in the 1930s and 1940s. In 1952, the NPS announced plans to establish Point Reyes National Seashore, which received strong opposition from private dairy owners. Dairy farmers felt that their way of life had become threatened due to expansive growth in Marin County that led to dramatically increased property taxes, coupled with decreased prices for dairy products and new environmental regulations. When Point Reyes National Seashore was created in 1962, its enabling legislation provided for retention of ranches in a designated pastoral zone. Ranchers signed 25 to 30 year reservations of use and occupancy leases, and special use permits for cattle grazing (Leach-Palm et al. 2015, NPS 2014e).

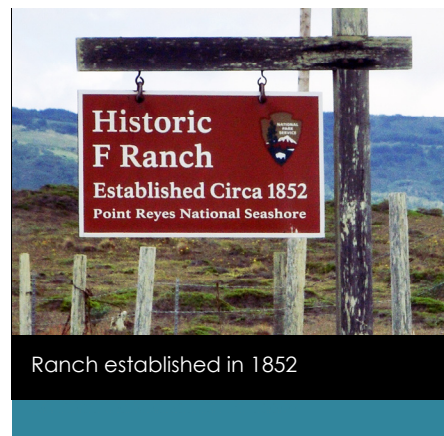


Figure 9: Cultural Resources



3.5.2.1 Current Conditions

SFDB provides the primary access to the numerous beef and dairy ranches still in operation on the Point Reyes peninsula. Coordination with NPS indicated they have implemented a phased approach to identifying historic properties associated with the history and development of dairy ranching on the Point Reyes peninsula. This approach has resulted in three separate district evaluations with variation in terms of applicable significance criterion, contributing resources, and period of significance among other things. The APE is encompassed by the three historic districts that are eligible for listing on the NRHP – the Point Reyes Dairy Historic District, the Point Reyes Historic Ranches District, and the Shafter/Howard Tenant Ranches Historic District. The Point Reyes Dairy District was not formally nominated or listed in the NRHP. However, SFDB is a contributor to the eligibility of the Point Reyes Ranches Historic District and Shafter/Howard Tenant Ranches Historic District. Other contributors to one or more of these historic districts include cattle under-crossings, ranch roads that intersect SFDB, fences and corrals, windbreaks, and ranch buildings. None of the contributors to the historic districts that are located within the APE (described below) are individually eligible for listing in the NRHP (Leach-Palm et al. 2015). Table 2 lists each resource (including SFDB) within the APE that contributes to the eligibility of the historic districts for listing on the NRHP.

Table 2: Contributors to NRHP-eligible Historic District(s)

Contributing Building, Structure, or Object(s)	Contributes to NRHP-eligible Historic District (indicated by X)		
	Point Reyes Ranches Historic District	Point Reyes Dairy District	Shafter/Howard Tenant Ranches Historic District
Sir Francis Drake Boulevard (segment within APE)	X		X
North cattle under-crossing at F Ranch			X
South cattle under-crossing at F Ranch			X
Fencing at Historic A, B, C, E, G, and M Ranches	X	X	X
Historic E Ranch corral (along Sir Francis Drake Boulevard)	X	X	X
Historic B Ranch windbreak	X	X	X
Historic A Ranch main house	X		X
Historic B Ranch main house and hay barn	X	X	X
Historic A, B, and C ranch roads, livestock pavement, and paths	X		X
Historic E Ranch, Historic M Ranch, and Rogers Ranch roads	X		X
Muddy Hollow Road/Original Point Reyes Road/Home Ranch Road (segment within APE)	X	X	
Former Coast Guard Life Saving Station Road (segment within APE)	X		
Chimney Rock Road (segment within APE)	X	X	X

Source: Leach-Palm et al. 2015.

Sir Francis Drake Boulevard (including intersecting roads)

SFDB has been identified as a contributing feature of the eligible historic districts because it provides an important linkage between the ranches and the peninsula, bisecting Historic A Ranch, Historic B Ranch, and Historic C Ranch (Leach-Palm et al. 2015). See Chapter 1 for a detailed description of the existing road.

SFDB intersects 15 other roads; of which, seven have been evaluated and determined to be contributors to the eligibility of two or more of the historic districts based on the historic transportation and circulation pattern. Field work conducted for this project indicates that intersections have been paved and modernized during the districts' most extensive period of significance (Leach-Palm et al. 2015). Internal ranch roads at Historic A, B, and C Ranches are discussed further below.

Cattle Under-Crossings

The two cattle under-crossings at Historic F Ranch were constructed between 1925 and 1931 as part of rerouting SFDB around the core of the Historic F Ranch. These structures were included in the Shafter/Howard Tenant Ranches District National Register nomination (still in draft phase) as contributors to the eligibility of the district due to their associations with early and continuing dairy operations and association with the historic circulation patterns for both animals and vehicles within the landscape (Leach-Palm et al. 2015). Earth cover on the under-crossings has eroded, the abutment footings are exposed, and the bridge shoulders and bridge railings do not meet AASHTO highways and streets national transportation standards. In addition, the log "wing walls" supporting the embankment are starting to rot. No known structural bridge inspection records exist and original design plans for the under-crossings are not available to verify whether their design meets current AASHTO Highway Bridge standards. The under-crossings are not maintained by Marin County or the NPS.



Cattle under-crossing along SFDB

Ranch Fences and Historic E Ranch Corral

Fences and corrals are elements of the ranches and are intersected by the APE in several places. Fences were identified as contributing to all of the historic districts that are eligible for listing in the NRHP. The SFDB right-of-way is paralleled with barbed wire fencing on wood posts, with some metal replacement posts predominantly in the northeastern portion of the APE. Fencing shows signs of modification and replacement in-kind. Many fences have been replaced and repaired over the years, and therefore lack a prevalence of original materials. Regardless of their location, fencing shares several common characteristics between ranches. These fences lack historic integrity of material but contribute to the landscape by illustrating the general configuration and separation of working spaces at the ranches (Leach-Palm et al. 2015).



Ranch fence along SFDB

A corral is adjacent to Historic E Ranch and impinges on the SFDB right-of-way. Along with fences, the corral at Historic E Ranch is a contributor to the eligibility of all of the historic districts (Leach-Palm et al. 2015).

Windbreaks

Windbreaks formed of Monterey Cypress trees adjoin the APE at Historic B Ranch and are contributors to the eligibility of all of the historic districts. These trees are reaching the end of their natural lives and the lowest branches are often too high to block wind as intended. Natural death of the trees is leading to gaps within the windbreaks. The trees at Historic A Ranch branches over the APE, but is ultimately not located within the APE. The windbreak at Historic B Ranch parallels SFDB and portions are within the APE (Leach-Palm et al. 2015).

Historic A Ranch Main Residence and Internal Roads

The main residence of Historic A Ranch, which was built in 1945, is immediately adjacent to SFDB and is a contributor to the Point Reyes Ranches and Shafter/Howard Tenant Ranches Historic Districts. The Mediterranean-influenced building is two stories tall with a shallow U-shaped plan clad in stucco. Interior roads create large turning areas in front of building clusters. These turning areas are gravel-covered and contain small islands of grass that differentiate entries or exits. Internal roads, livestock pavement, and paths at this ranch have been found eligible as contributors to the eligibility of the Point Reyes Ranches and Shafter/Howard Tenant Ranches Historic Districts as aspects of historical circulation patterns (Leach-Palm et al. 2015).



Mediterranean style residence at Historic A Ranch adjacent to SFDB

Historic B Ranch Main Residence, Hay Barn, and Internal Roads

The main residence of Historic B Ranch, constructed from 1950 to 1951, and a portion of the walled and fenced yard, are immediately adjacent to SFDB and contribute to the historic districts. The minimal traditional residence is a single story, hip-roofed building with a roughly U-shaped plan. At the north end of Historic B Ranch, the contributing hay barn constructed from 1869 to 1870 as a part of the original dairy complex, is also immediately adjacent to the road. Similar to Historic A Ranch, interior roads create large turning areas in front of building clusters. These turning areas are gravel-covered and contain small islands of grass that differentiate entries or exits (Leach-Palm et al. 2015). Additionally, a drive north of the Historic B Ranch original residence and a second historic drive leading to the Grade A Dairy south of the main house are contributing elements to the eligible historic districts (Leach-Palm et al. 2015).



Historic B Ranch barn adjacent to SFDB

Historic C Ranch Roads

The APE does not include any standing structures at Historic C Ranch. Similar to Historic A Ranch and Historic B Ranch, interior roads create large turning areas in front of building clusters. These turning areas are gravel-covered and contain small islands of grass that differentiate entries or exits. Additionally, Historic C Ranch also includes a drive at the southwest corner of the complex in front of a former hay barn. The concrete sidewalk leading to the main residence at Historic C Ranch is the only historic pedestrian walkway in the APE. These components are contributing elements to the eligible historic districts (Leach-Palm et al. 2015).

3.5.3 Environmental Consequences

3.5.3.1 No Action Alternative

Under the No Action Alternative, SFDB would continue to deteriorate and road closures would occur during flood events. As roadway conditions worsen, ongoing maintenance would increase, particularly where standing water further damages pavement. This deterioration of the road and the increasing presence of maintenance crews would eventually become a visual detraction from the historic setting. However, no effect is expected because this would not constitute an alteration to the characteristics of a historic property qualifying it for inclusion or eligibility for the NRHP.

The No Action Alternative would support the NPS *Management Guidelines 2006* because no new construction, alterations, or additions would occur within the cultural landscape. Similarly, there would be no substantial adverse change in the significance of an historical resource, and therefore no significant effect on the environment under CEQA.

3.5.3.2 Action Alternative

The project would have no adverse effect on historic properties. Overall, the project would not have an adverse effect on the three overlapping historic districts in the APE – the Point Reyes Dairy District⁴, Point Reyes Ranches Historic District, and the Shafter/Howard Tenant Ranches National Register Historic District. Proposed refurbishing and realignment of portions of SFDB would affect only small portions of the roadway and two contributors (cattle under-crossings) of the overlapping Point Reyes Ranches and the Shafter/Howard Tenant Ranches Historic Districts that cover roughly 18,000 acres. Fencing may be replaced as a result of the Action Alternative; however, any distinctive fencing would be replaced in-kind and the alignment of ranch cattle and human circulation patterns would be maintained. Therefore, the NRHP eligibility of the three overlapping historic districts in the APE would not change.

The ranch roads that intersect SFDB would be maintained as characteristic circulation features. The F Ranch cattle under-crossings, which are contributors to the Shafter/Howard Tenant Ranches historic district, would be removed and replaced with concrete box culverts that would retain the vehicle and cattle circulation patterns in the district. The new structures would also retain the general scale of the existing under-crossings and would not introduce new visual elements into the historic landscape that could impact the larger historic district. The proposed improvements would not alter the ability of SFDB to convey its significance linking the historic ranches on the peninsula, which is its key characteristic that makes it a contributor of the Point Reyes Ranches and Shafter/Howard Tenant Ranches Historic Districts (and the cultural landscape therein).

California Coastal Act and Other Policies

Through application of avoidance and minimization measures, no impacts are expected to fences, corrals, windbreaks, or ranch buildings. Although the cattle under-crossings would be replaced under this alternative, this would not contribute to an adverse effect to the Shafter-Howard Tenant Ranches Historic District. Therefore, the Action Alternative would have no adverse effect to any of the historic districts and would support the provisions of the California Coastal Act by preserving historic structures to the extent possible.

The Action Alternative would also support the NPS *Management Policies 2006*, as the cultural landscapes and their historic land use and practices would be retained. The Action Alternative would balance the perpetuation of use by upgrading SFDB to allow it to fulfill its historic function to serve the ranches on the peninsula. The tangible evidence that represents its history would remain, as the roadway would primarily follow its historic alignment. Because the

⁴ Although the Point Reyes Dairy District was not formally nominated or listed in the NRHP, it is considered eligible for purposes of this document.

majority of the proposed actions involve resurfacing, restoring, and rehabilitating SFDB in a manner that would closely follow the existing roadway, alterations to it would not radically change, obscure, or destroy its spatial organization, materials, or features. New construction would continue to preserve the landscape's integrity and historic character, and would remain compatible with the landscape's historic character.

Conclusion

The Action Alternative would have no adverse effect to the Point Reyes Dairy District, Point Reyes Historic Ranches District, and Shafter-Howard Tenant Ranches Historic District. The Action Alternative would support the California Coastal Act and the NPS *Management Policies* 2006. For these reasons, impacts would be less than significant.

3.5.4 Avoidance, Minimization, and/or Mitigation Measures

The following measures will be implemented to reduce potential impacts to historic properties:

- The Historic E Ranch corral, Historic A Ranch main house, Historic B Ranch main house, and Historic B Ranch hay barn shall be protected from inadvertent damage by placement of fencing or concrete barriers.
- The contractor shall avoid disturbing trees and their roots within the Historic B Ranch windbreak.
- If fences within the existing SFDB easement need to be removed to accommodate construction, they shall be replaced in kind at the edge of the road right-of-way. If distinctive fencing materials, such as wood rail fencing, are affected during construction, they shall be replaced in kind and positioned to maintain the alignment of ranch cattle and human circulation patterns.
- No construction staging shall occur at Historic E Ranch corral, Historic B Ranch windbreak, Historic A Ranch main house, Historic B Ranch main house, or Historic B Ranch hay barn.

3.5.5 SHPO Concurrence

The request for concurrence on eligibility and effect determinations was transmitted to SHPO along with the cultural report prepared for this project on July 3, 2015 (cover letter included in Appendix A). Coordination with SHPO is ongoing and will be completed prior to issuance of decision documents.

3.6 Visual and Aesthetic Resources

This section describes impacts to visual and aesthetic resources expected from implementation of the No Action and Action Alternative. SFDB provides the only access to the Point Reyes peninsula, which offers views of rolling hills, pastoral farmlands, and the surrounding oceans and bays. The study area encompasses a 12-mile segment of SFDB located entirely within the Point Reyes peninsula, including views from the road and of the road.

3.6.1 Regulatory Setting

NEPA establishes that the federal government use all practicable means to ensure for all Americans . . . aesthetically and culturally pleasing surroundings (42 United States Code [USC] 4331[b][2]). To further emphasize this point, in its implementation of NEPA (23 USC 109[h]), FHWA directs that final decisions on projects are to be made in the best overall public interest, taking into account adverse environmental impacts, including the destruction or disruption of aesthetic values.

FHWA's *Visual Impact Assessment for Highway Projects* (FHWA 1981) was used to establish existing visual conditions within the project study area and evaluate the project's potential effects

to the study corridor's overall visual quality. The guidelines include assessment of existing visual character and visual quality, as follows (Caltrans 2013):

- **Identify Visual Character** – Visual character is descriptive and non-evaluative, which means it is based on defined attributes that are neither good nor bad in themselves.
- **Assess Visual Quality** – Visual quality is evaluated by identifying the vividness, intactness, and unity present in the view.

Visual quality was evaluated based on the criteria of vividness, intactness, and unity, described below. These criteria were assessed individually on a scale of very low, low, moderately low, moderate, moderately high, high, and very high.

- **Vividness** is the visual power or memorability of landscape components as they combine in striking or distinctive visual patterns.
- **Intactness** is the visual integrity of the natural and human-built landscape and its freedom from encroaching elements; this factor can be present in well-kept urban and rural landscapes, as well as natural settings.
- **Unity** is the visual coherence and compositional harmony of the landscape considered as a whole; it frequently attests to the careful design of individual components in the man-made landscape.

California Coastal Act Policies

The California Coastal Act, described under Chapter 1, identifies the following applicable policies to protect visual resources.

- Section 30251: The scenic and visual qualities of coastal areas shall be considered and protected as a resource of public importance. Permitted development shall be sited and designed to protect views to and along the ocean and scenic coastal areas, to minimize the alteration of natural land forms, to be visually compatible with the character of surrounding areas, and, where feasible, to restore and enhance visual quality in visually degraded areas. New development in highly scenic areas . . . shall be subordinate to the character of its setting (California Coastal Commission 2012).

3.6.2 Affected Environment

Preliminary design data, documented site visits, and public input were reviewed to describe the affected environment, as well as to analyze impacts. Area plans were also reviewed to identify applicable visual or scenic preservation goals or policies. These plans, and the park's enabling legislation, goals, and policies, indicate that the scenic natural and coastal wilderness qualities, as well as the agricultural and cultural landscape, are highly valued and are to be preserved for the viewing enjoyment of present and future generations.

3.6.2.1 Viewer Groups and Sensitivity

Viewer response to visual changes can be described in terms of visual sensitivity and exposure. Viewer sensitivity includes the preferences, values, and opinions of different user groups based on their activity and awareness, local values, and the cultural significance of the visual resource (FHWA 1981). The viewer groups identified within the study area are described below.

- **Residents:** Includes local farmers and ranchers who live in the park. This viewer group sees the project corridor frequently and is very familiar with the study area's existing visual conditions. Residents would view the project corridor for a longer duration than other viewer groups because it would be visible from their homes. Residents have a high sensitivity to visual change because it can affect their quality of life. This viewer group has a high level of exposure and sensitivity to visual change. Therefore, their response to visual resource changes would be high.

- **Park Staff and Frequent Visitors:** Includes park employees and nearby residents who visit the park often. Activities include sight-seeing from a vehicle; bicycling; hiking; wildlife viewing; and cultural, agricultural, or natural history interpretation. Frequent park visitors view the project corridor in different ways and durations depending on their activity, and are familiar with the study area's existing visual conditions. This viewer group has a moderately high level of exposure and high sensitivity to visual change. Therefore, this group's response to visual resource changes would be high.
- **Occasional Park Visitors:** Includes visitors who do not frequent the park. Activities for this viewer group are the same as those described for frequent visitors. The main purpose of occasional park visitor trips is recreation and sight-seeing. These visitors view the project corridor only occasionally and are not as familiar with the study area's existing visual conditions as other viewer groups. This viewer group has a moderate level of exposure and moderately high sensitivity to visual changes. Therefore, this group's response to visual changes would be moderately high.
- **Commercial Business Employees:** Includes workers at the dairy farms and ranches, milk truck drivers, shuttle bus drivers, etc. Although people in this viewer group frequent the study area and are familiar with its existing visual conditions, their travel is routine and for the purpose of work. This viewer group has a moderately high level of exposure and low sensitivity to visual change. Therefore, this group's response to visual changes would be moderate.

3.6.2.2 Project Setting and Existing Visual Resources

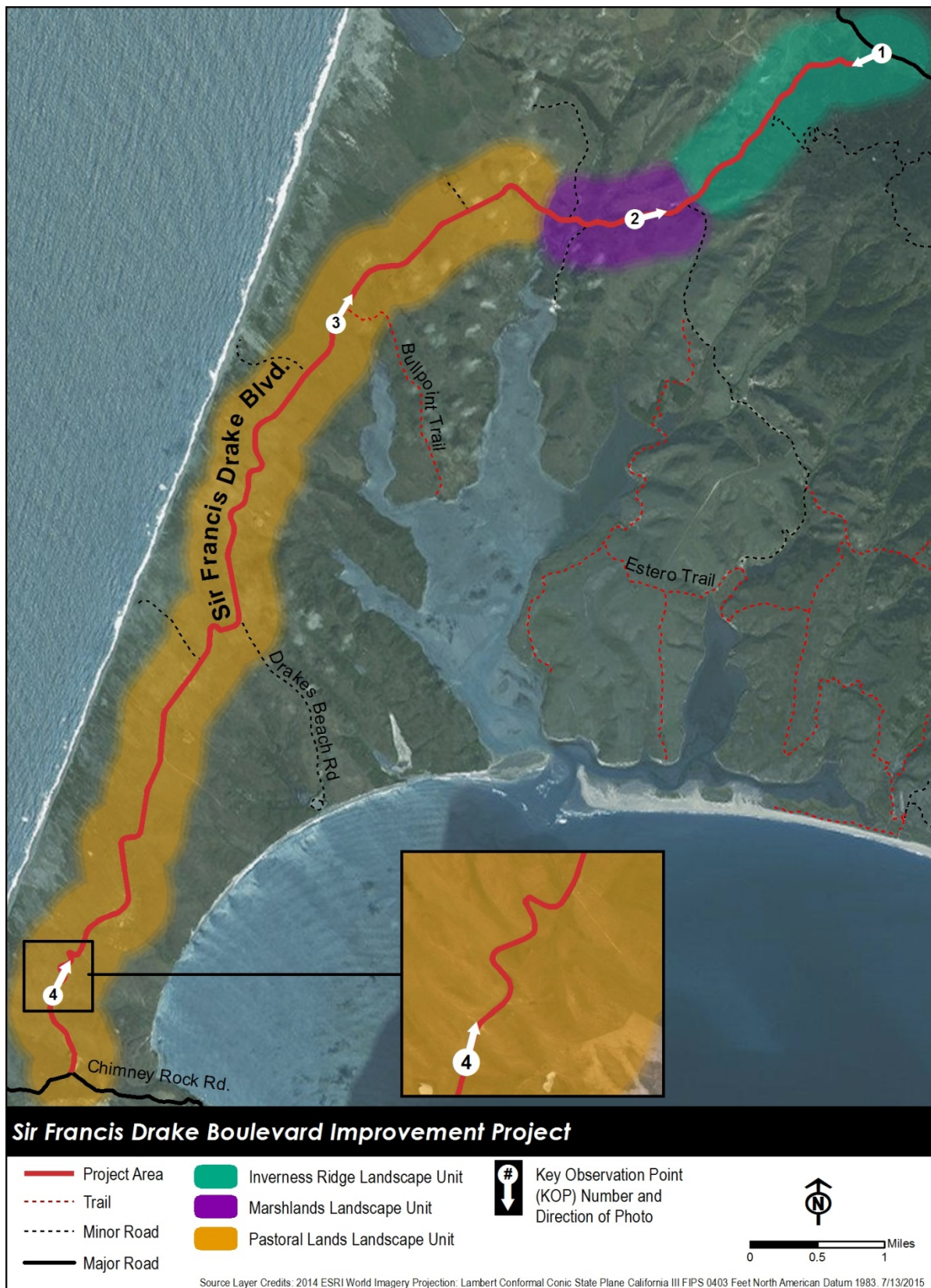
Existing Visual Character

The visual character of the northern portion of the study area consists of the densely vegetated steep hills and ravines of Inverness Ridge. The wooded hillsides include various pine trees and shrubs growing up to the edge of SFDB. The steep hills constrain views from the road to the foreground and middleground. Traveling south on SFDB, the area's visual character transitions to more open views of flatter rolling hills and the low-lying coastal salt marsh of Schooner Bay, with vegetation such as saltgrass and saltmarsh bulrush. The majority of the study area farther south is characterized by views of flatter areas and rolling hills covered with prairie grass and patches of shrubs stretching into the distance, with unobstructed views of the open sky and distant views of the Pacific Ocean and coastlines. This rural landscape includes views of large expanses of pastureland and sparsely scattered groups of farm and ranch buildings, including farmhouses and assorted outbuildings, pasture fencing, farm vehicles, and grazing livestock. Views of power poles, power lines, and wood and barbed wire fencing are common along SFDB throughout the study area.

3.6.2.3 Landscape Units

The project corridor's visual environment can be divided into distinct landscape units that contain visual characteristics such as landforms, land cover, or human-made development that help define the unit's boundaries (FHWA 1981). The landscape units identified within the project corridor are described below (see Figure 10).

Figure 10: Landscape Units and Viewpoints



- **Inverness Ridge Landscape Unit:** This landscape unit is located in the northeastern portion of the study area in Inverness Ridge, and is characterized by heavily wooded steep hills and ravines with dense tree and shrub vegetation. Views of a tree canopy over the roadway occur in some areas. Because of the hilly topography and dense vegetation in this area, views from the roadway are largely constrained to the foreground and middleground.
- **Marshlands Landscape Unit:** This landscape unit is located south of the Inverness Ridge Landscape Unit. This area transitions from the hilly Inverness Ridge to more open, flatter areas with marshes, short grasses, and wetland vegetation associated with Schooner Bay in the foreground and middleground. The flatter, more gently rolling hills in this area allow for more distant views of the grass-covered hills with sparsely scattered trees and shrubs, as well as open sky in the background.
- **Pastoral Lands Landscape Unit:** This landscape unit encompasses the majority of the southern portion of the study area. It is characterized by views of wood and barbed wire fencing, power lines and power poles, and prairie grasses in the foreground. Middle ground and background views include open views of large expanses of flat and rolling pastureland, historic dairy and ranch buildings, grazing livestock, and views of the Pacific Ocean and open sky. The flatter topography and short grassy vegetation in this area provide for distant views from the roadway.



Inverness Ridge Landscape Unit



Marshlands Landscape Unit



Pastoral Lands Landscape Unit

3.6.2.4 Scenic Routes, Visual Landmarks, and Important Vistas

Scenic Routes

Sir Francis Drake Boulevard is not designated as a scenic route.

Visual Landmarks and Vistas

Notable visual landmarks seen within the study area include the Monterey Cypress tree-lined access road to the historic RCA Receiving Station, ranch sites with historic markers near the road, and views of nearby bays. Scenic vistas include views of the Pacific Ocean. Although the study area is not within designated wilderness, wilderness is visible from the road as area topography allows.

The marshland associated with Schooner Bay is a notable visual element within the study area. A graveled visitor pull-out area with picnic table is located in this area that provides views of the marsh, rolling grassy hills, and SFDB as it crosses over Schooner Creek.

3.6.2.5 Visual Quality of Project Corridor by Viewpoint

Four viewpoints, or key observation points, were selected to represent the existing visual quality of the study area. The visual quality for each viewpoint was evaluated based on the criteria of vividness, intactness, and unity as described above. The visual quality rankings for the four

viewpoints were combined to determine the overall existing visual quality of the project corridor. As shown in Table 3, the existing visual quality of the study corridor was rated moderately high. (Details about the rankings of each viewpoint are included in the 2014 *Visual Impact Assessment* technical report prepared for this project.)

Table 3: Summary of Existing Visual Quality by Viewpoint

Viewpoint # (Landscape Unit)	Vividness Rating	Intactness Rating	Unity Rating	Overall Existing Visual Quality Rating ¹
Viewpoint #1 (Inverness Ridge Landscape Unit)	Moderately High (5.2)	Moderately high (4.9)	Moderately high (4.8)	Moderately high (5.0)
Viewpoint #2 (Marshlands Landscape Unit)	Moderately High (5.0)	Moderately high (4.8)	Moderately High (4.6)	Moderately High (4.8)
Viewpoint #3 (Pastoral Lands Landscape Unit)	Moderate/average (4.2)	Moderately high (4.9)	Moderately high (4.8)	Moderately high (4.6)
Viewpoint #4 (Pastoral Lands Landscape Unit)	Moderate/average (4.3)	Moderately high (5.1)	Moderately high (4.8)	Moderately high (4.7)
Project Corridor				Moderately high (4.8)

¹Vividness + Intactness + Unity / 3

3.6.3 Environmental Consequences

The process to determine impacts to visual resources generally follows the guidelines outlined in the publication *Visual Impact Assessment for Highway Projects* (FHWA 1981). The FHWA guidance provides a methodology to characterize the existing quality of visual resources, predict viewer response (sensitivity) to visual changes, and analyze the effects of the Action Alternative on visual resources using key observation points, referred to as viewpoints in this document. The visual effects resulting from the project are combined with the predicted viewer sensitivity to determine the overall level of visual impact that would result from the Action Alternative.

The Action Alternative effects discussed below are a summary of the visual impact assessment (Jacobs 2014a) prepared for this project.

3.6.3.1 No Action Alternative

Under the No Action Alternative, no improvements would be made to SFDB. Activities under the No Action Alternative include ongoing road maintenance activities to repair damaged pavement. No long-term visual impacts would occur within the study area under the No Action Alternative. For these reasons, the No Action Alternative would be consistent with the visual and scenic preservation goals in the park's enabling legislation, NPS management plans and policies, other area plans, the California Coastal Act, and CEQA.

3.6.3.2 Action Alternative

The overall visual quality rating for the four representative viewpoints analyzed in the study area would be slightly reduced or would experience no change, remaining moderately high. Visual quality reductions would be primarily related to slightly enlarged cut slopes and vegetation removal. The somewhat wider road would intrude on views of the natural landscape, but the improved roadway edge would be more defined, resulting in more intact views of the road. The roadway and vegetation would remain dominant features overall. Disturbed areas would be revegetated with native plants and restored to existing conditions.

The widened road would not require removal of the Monterey Cypress trees along the RCA station access road, and would not affect existing views of bays, wilderness areas, or the Pacific Ocean. The proposed improvements would generally occur within the existing 60-foot-wide Marin County roadway easement. However, the easement may be shifted or expanded to accommodate some localized improvements. Fencing located within the existing right-of-way may be removed and reconstructed at the right-of-way line. If any fencing is removed, the style of the new fence would match that of the existing fence. Further, any ranch markers removed to

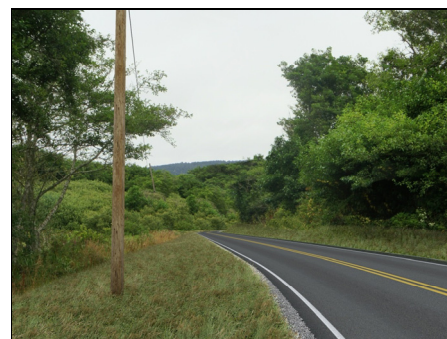
accommodate road improvements would be reinstalled at the right-of-way line upon construction completion. Therefore, the proposed improvements would not affect these visual landmarks and vistas.

The new culverts in the vicinity of Schooner Bay would be visible from the adjacent pull-out area. The pull-out area would be regraded to match the improved road grade and would be paved with four inches of asphalt pavement, resulting in a visual change. These roadway improvements would not intrude on views of the nearby marsh or rolling hills, and would result in minimal visual changes in this area. The planned improvements are anticipated to result in a low level of visual change for viewers at the pull-out area.

The photos below show existing conditions and simulated future conditions for Viewpoint #2 and Viewpoint #4. Viewpoint #2 is approximately 1,000 feet east of the East Schooner Creek crossing, looking east. Proposed roadway improvements at Viewpoint #2 include widening the existing two-lane, 20-foot-wide road to two 11-foot lanes and paved 1-foot shoulders, with a total roadway width of 24 feet. Improvements also include a paved ditch and curb on the upslope side of the road and a 1-foot gravel area on the downslope side. At this viewpoint, the roadway would be realigned to the south and raised approximately two feet to raise it out of the floodplain to eliminate existing road flooding issues. Although the paved ditch would be a slight departure from the road's existing visual character, it would avoid the need to do extensive excavation in some areas, thus better retaining visual intactness and ultimately, visual character. The visual simulation illustrates this area with five years' growth shown in disturbed areas that would be revegetated after construction completion, as well as relocation of the utility pole to the opposite side of the road. Viewpoint #4 is located at the southern end of the study area an area of tight switchbacks where the roadway traverses the hilly area. Viewpoint #4 depicts widening the existing two-lane, 20-foot-wide road to two 11-foot lanes and paved 1-foot shoulders, with a total roadway width of 24 feet. Additionally, a 1-foot-wide graveled area would be provided on both sides of the road. To improve sight distance, the roadway elevation would be lowered by approximately 2 feet, and the existing side slopes would be widened. No simulations were created for Viewpoint #1 and Viewpoint #3, as no substantial changes in road alignment are proposed in those areas.



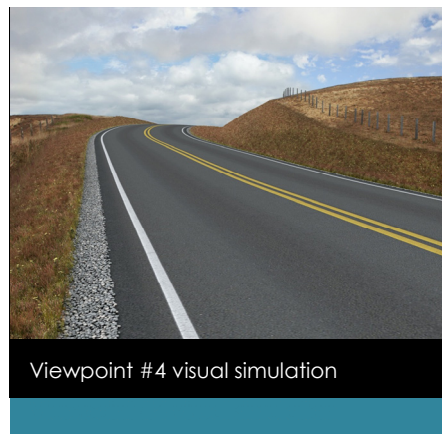
Viewpoint #2 existing conditions



Viewpoint #2 visual simulation



Viewpoint #4 existing conditions



Viewpoint #4 visual simulation

Based on the assessment of changes in visual quality by viewpoint described above, the Action Alternative would result in a minimal change in visual quality for the viewpoints and the landscape units they represent.

Construction of proposed improvements would result in temporary visual changes, including views of construction equipment operations, dust, increased construction worker traffic, and construction signage. All construction would occur on weekdays during daylight hours.

California Coastal Act and Other Policies

The Action Alternative would be consistent with the visual and scenic preservation goals in the park's enabling legislation, and NPS management plans and policies. In compliance with the California Coastal Act, views to and along the ocean and scenic coastal areas would remain intact, and the alteration of natural land forms would be minimized and would be visually compatible with the character of surrounding areas. Modifications to SFDB would remain subordinate to the character of its setting, as described above. Although slightly widened, SFDB would be maintained as a two-lane roadway, and views would not be obstructed. Revegetated roadsides would not interfere with public views to and along the coast, and native plant material would be used to restore disturbed areas to existing conditions.

Conclusion

The widened road would not affect scenic vistas, including existing views of bays, wilderness areas, and the Pacific Ocean. The Action Alternative would be consistent with park's enabling legislation, NPS management plans and policies, as well as the California Coastal Act. Impacts would be less than significant with incorporation of avoidance, minimization, and/or mitigation measures listed below.

3.6.4 Avoidance, Minimization, and/or Mitigation Measures

The Action Alternative was designed to minimize the amount of road realignment and elevation changes while meeting the project's purpose and need. The project design minimizes visual impacts in the following ways:

- Minimize the size of cut and fill slopes to the extent practicable.
- Minimize removal of trees and other vegetation to the extent practicable.
- Minimize the number of road signs.
- Design cut slopes to blend into the adjacent natural topography.
- Specify rock color that is indigenous to the area to minimize the visual intrusion.

Implementation of the following measures will offset the visual changes that would result from the proposed roadway improvements.

- The area beyond the construction limits shall not be disturbed. Abandoned segments of roadway and temporary impact areas along SFDB within the project limits that would no longer be in use shall be reclaimed and revegetated. Degraded areas impacted from construction-related activity shall be replanted with native plants from the watershed or nearby watershed under guidance from PRNS biologists. Shrubs, trees, and herbaceous perennials and annuals shall be seeded and planted along riparian corridors where impacts and vegetation removal occur. CFLHD shall prepare a restoration plan for the project in consultation with PRNS for appropriate seed mixes and plants. Revegetated areas shall be protected and cared for, including watering when needed, until restoration criteria have been met under U.S. Army Corps of Engineers (USACE) permits, the U.S. Fish and Wildlife Service (USFWS) Biological Opinion, and/or National Pollutant Discharge Elimination System (NPDES) standards. Revegetated areas shall be monitored in accordance with an approved restoration plan to ensure success criteria are met.
- If fences within the existing SFDB easement need to be removed to accommodate construction, they shall be replaced in-kind at the edge of the road right-of-way. If distinctive fencing materials, such as wood rail fencing, are affected during construction, they shall be replaced in-kind and positioned to maintain the alignment of ranch cattle and human circulation patterns.
- If historic wayfinding markers are temporarily removed during construction, the contractor shall reinstall the markers at the right-of-way line.

The following minimization measure will be implemented to minimize potential visual changes during construction.

- If construction staging areas are located near ranch or farm residences, the contractor shall visually screen the staging area(s).

3.7 Noise

This section describes temporary noise impacts that would occur during project construction. The study area for noise includes all noise sensitive receptors that could be impacted by construction activities.

3.7.1 Regulatory Setting

23 CFR 772 provides procedures for preparing operational and construction noise studies and evaluating noise abatement considered for federal and federal-aid highway projects. Under 23 CFR 772.7, projects are categorized as Type I, Type II, or Type III projects. FHWA defines a Type I project as a proposed federal or federal-aid highway project for the construction of a highway on a new location, or the physical alteration of an existing highway that significantly changes either the horizontal or vertical alignment, or increases the number of through-traffic lanes. A Type II project is a noise barrier retrofit project that involves no changes to highway capacity or alignment. A Type III project is a project that does not meet the classifications of a Type I or Type II project.

This project is considered a Type III project because it would not significantly alter the vertical or horizontal alignment of the existing roadway, and no additional traffic lanes would be provided. Therefore, the Action Alternative would not result in traffic noise impacts, and no long-term operational noise abatement is considered. However, construction of the Action Alternative would temporarily elevate noise levels in the project area, and those potential effects are evaluated below.

According to 23 CFR 772.19, the following general steps are to be performed for construction noise analysis:

- Identify land uses or activities that may be affected by noise from construction of the project during the project development studies.
- Determine the measures needed in the plans and specifications to minimize or eliminate adverse construction noise impacts to the community. This determination shall include a weighing of the benefits achieved and the overall adverse social, economic, and environmental effects and the costs of the abatement measures.
- Incorporate the needed abatement measures in the plans and specifications.

In accordance with NPS *Management Policies 2006* and *Director's Order 47: Sound Preservation and Noise Management* (DO-47), an important part of the NPS mission is preservation of natural soundscapes associated with national park system units (NPS 2006a, NPS 2000). The PRNS Soundscapes /Noise web site states that, because national parks were established to be enjoyed by the public, sounds produced by human activity are often unavoidable. "Roads, trails, facilities, visitors, and park operations represent sources of sound. And this creates a paradox - the people who visit national parks to enjoy the natural and cultural soundscape are directly or indirectly affecting the quality of the soundscape itself" (NPS 2015b).

However, DO-47 and current PRNS management plans do not identify acoustic management goals for the park. In lieu of such guidance, the noise contours in the *Marin Countywide Plan* (CWP) were used as a benchmark for identifying and assessing noise impacts. These noise contours range from 60 L_{dn} to 70 L_{dn} depending on the land use category (e.g., residential, place of worship, school). The average sound level over a 24-hour period in decibels (dB) is defined as L_{dn} .

No Coastal Act provisions apply to noise.

3.7.2 Affected Environment

The study area is located in a rural area with scattered residential and agricultural development. These residents are located throughout the study area between 25 feet and 225 feet from the nearest travel lane. The noise environment along the roadway corridor is predominantly influenced by automobiles traveling SFDB and occasional aircraft overhead.

In March 2011, the NPS and the Federal Aviation Administration collected ambient noise levels within PRNS. Data was collected for approximately 30 days during the summer and winter seasons. According to the *Baseline Ambient Sound Levels in Point Reyes National Seashore* report, the ambient noise level throughout the park during the summer season ranges from 39.9 to 40.3 A-weighted decibels⁵ (dBA) during the day (7:00 a.m. to 7:00 p.m.) and 32.1 to 40.4 dBA during the evening (7:00 p.m. to 7:00 a.m.) (NPS 2011). During the winter season, the ambient noise level throughout the park ranges from 41.6 dBA to 45.5 dBA during the day and 40.2 to 44.7 during the evening (NPS 2011).

3.7.3 Environmental Consequences

3.7.3.1 No Action Alternative

The No Action Alternative would not involve reconstruction or improvement of the roadway. Noise levels in the study area are generally low (approximately 40 dBA) and are not anticipated to substantially change with ongoing maintenance activities described in Chapter 2. Therefore, noise impacts are not anticipated as a result of this alternative.

⁵ A-weighted decibels are an expression of the relative loudness of sounds in air as perceived by the human ear.

3.7.3.2 Action Alternative

The Action Alternative would not increase the overall capacity of SFDB and would not substantially alter the vertical or horizontal alignment. Therefore, no long-term noise impacts are anticipated.

Construction activities associated with the Action Alternative would temporarily elevate noise levels in the study area. Noise resulting from construction activities would depend on the different types of equipment used, the distance between construction noise sources and sensitive noise receptors, and the timing and duration of noise-generating activities.

Construction activities would require the use of heavy equipment such as backhoes, cranes, drills, excavators, and trucks. The level of construction noises at receptor locations would depend on the loudest piece of equipment operating at the moment. According to the FHWA Roadway Construction Noise Database (FHWA 2005), noise levels from most pieces of equipment used for this project would range from 75 dBA to 90 dBA at a distance of 50 feet. Impact equipment, such as impact hammers, can generate louder noise levels up to 101 dBA. Table 4 below summarizes types of construction equipment that would operate during construction, and the maximum noise levels (L_{\max}) at varying distances.

The noise levels presented in Table 4 represent maximum noise levels at varying distances adjusted for time-usage factors and would not be continuous noise sources. Construction equipment use would be intermittent throughout the course of a normal work period. The entire construction period for the Action Alternative is anticipated to last approximately 18 months, although construction would be suspended as necessary during the rainy season. Construction activities would be temporary and would occur during weekday daytime hours only.

Trucks transporting materials and equipment to and from the project area would generate noise during construction. However, traffic associated with construction would not result in a noticeable increase in noise levels. As defined by FHWA, noise levels from an increase in traffic would only be perceptible to the human ear if there was an increase of greater than 3 dBA. In order for this to occur, traffic would have to double on SFDB in the study area. Traffic trips associated with construction would be well below the amount required to double current traffic volumes. Therefore, the additional traffic associated with construction is not anticipated to result in a noticeable increase in noise levels on SFDB in the study area.

Conclusion

As mentioned above, no changes to noise levels would occur in the long term because the Action Alternative would not increase overall capacity or substantially alter the alignment. Ambient noise levels would increase during construction, temporarily affecting residents living closest to the nearest travel lane. However, these impacts would not be significant due to their short-term and intermittent nature. In addition, the measures listed below will reduce noise levels during construction.

Table 4: Noise Attenuation (Point Source) for Standard Construction Equipment

Equipment Type	Impact Device (Y/N)	Actual Measured Average L_{max} (dBA) at 50 ft	Noise Attenuation (Point Source)			
			L_{max} (dBA) at 100 ft	L_{max} (dBA) at 200 ft	L_{max} (dBA) at 400 ft	L_{max} (dBA) at 800 ft
Auger Drill Rig	No	84	76.5	69	61.5	54
Backhoe	No	78	70.5	63	55.5	48
Chain Saw	No	84	76.5	69	61.5	54
Compactor (ground)	No	83	75.5	68	60.5	53
Compressor (air)	No	78	70.5	63	55.5	48
Concrete Mixer Truck	No	79	71.5	64	56.5	49
Concrete Pump Truck	No	81	73.5	66	58.5	51
Concrete Saw	No	90	82.5	75	67.5	60
Crane	No	81	73.5	66	58.5	57
Drill Rig Truck	No	79	71.5	64	56.5	49
Dump Truck	No	76	68.5	61	53.5	46
Excavator	No	81	73.5	66	58.5	51
Front End Loader	No	79	71.5	64	56.5	49
Grader	No	85	77.5	70	62.5	55
Impact Pile Driver	Yes	101	93.5	86	78.5	71
Pavement Scarifier	No	90	82.5	75	67.5	60
Paver	No	77	69.5	62	54.5	47
Pickup Truck	No	75	67.5	60	52.5	45
Roller	No	80	72.5	65	57.5	50
Scraper	No	84	76.5	69	61.5	54
Vibratory Pile Driver	Yes	101	93.5	86	78.5	71

Source: FHWA 2005

3.7.4 Avoidance, Minimization, and/or Mitigation Measures

During construction, the following measures will be implemented to help reduce noise levels:

- Construction equipment shall have mufflers conforming to original manufacturer specifications that are in good working order and are in constant operation to prevent excessive noise or unusual noise.
- Operators shall avoid leaving equipment idling for more than five minutes when parked or not in use.
- The contractor shall provide the construction schedule to residences within or adjacent to the construction limits and notify adjacent residences at least 48 hours in advance of construction work.

3.8 Utilities

This section evaluates the potential for the Action Alternative to impact utilities in the study area. A field survey for utilities within the SFDB easement was conducted and all visible utilities within approximately 500 feet of the SFDB easement were identified and documented. The approximate locations of several underground waterlines and underground telephone lines were also identified and documented based on personal communication with NPS staff.

3.8.1 Regulatory Setting

The Federal Water Pollution Control Act Amendments of 1972, commonly known as the Clean Water Act (CWA) (33 U.S.C. 1251 et seq.), establishes guidelines for regulating discharges of pollutants into the waters of the U.S. The CWA requires that states adopt water quality standards

to protect public health, enhance the quality of water resources, and ensure implementation of the CWA.

Division 5, Public Work and Public Purchases, Chapter 3.1 Protection of Underground Infrastructure, Articles 1 and 2 of California Public Utilities Code requires public agencies to document existing main or trunkline utility facilities within a construction area. Public agencies are also required to contact regional notification centers prior to excavation of any subsurface installations.

The State Water Resources Control Board (SWRCB) administers the National Pollutant Discharge Elimination System (NPDES) permit program. The NPDES program is authorized by the CWA and controls water pollution by regulating point sources that discharge pollutants into waters of the US. See the Water Quality section for more information.

Title 14 of the California Code of Regulations (CCR) establishes regulations pertaining to all nonhazardous waste handling and disposal in California.

No Coastal Act provisions apply to utilities.

3.8.2 Affected Environment

Pacific Gas and Electric and Marin Clean Energy provide gas and electric utility service in PRNS. Water is supplied from wells and springs, and by the North Marin Water District. AT&T provides telephone service. While PRNS does have a wastewater system, most wastewater within the ranches is treated through on-site disposal systems. These systems are typically owned by PRNS. However, ranchers and partners of the park are responsible for maintenance and repair (pers. comm. D. Brouillette 2014).

Utilities within the study area include electric lines, telephone lines, utility poles, drainage culverts, underground water lines, water tanks and water spigots. Additional utilities such as other water, sewer, natural gas pipelines, electric, telephone, and cable lines may also be buried in the vicinity of the study area.

3.8.3 Environmental Consequences

3.8.3.1 No Action Alternative

Under the No Action Alternative, improvements to the drainage features along SFDB would not occur. No additional stormwater facilities would be developed.

3.8.3.2 Action Alternative

Utilities located within the clearing and construction limits of the Action Alternative would be removed and relocated or protected in place. Temporary service disruptions could occur as utilities are removed and relocated. State law requires that the county and its contractors notify a regional notification center prior to construction of the proposed action.

Stormwater drainage improvements proposed under the Action Alternative include culvert replacement, culvert cleaning in place, and ditch reconditioning. The Action Alternative would maintain or restore drainage patterns by upsizing culverts and, in one instance, moving a culvert to fit the natural drainage pattern. The removal of excess sediment at the existing East Schooner Creek culvert and replacement with an adequately sized box culvert is expected to restore stream flows in this area. Replacement of the two existing culverts at Schooner Creek with an open bottom arch structure and increasing the channel width by 14 feet would also improve drainage and tidal dynamics. Additionally, several new catch basins would be constructed adjacent to the SFDB alignment within existing county easement.

No wastewater would be created as a result of the Action Alternative and no wastewater facilities would be constructed. The Action Alternative would comply with all federal and state water quality regulations. See the Water Quality section for more information.

Waste generated during construction would comply with federal, state, and local statutes and regulations related to solid waste disposal. The project would also be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs. The landfill would comply with federal, state, and local statutes and regulations related to solid waste (see Avoidance, Minimization, and/or Mitigation Measures, below).

Conclusion

No long-term disruption of utility services is anticipated. In addition, no wastewater would be produced as a result of the Action Alternative. Stormwater drainage improvements, including culvert replacement, culvert cleaning in place, and ditch reconditioning, would be beneficial to existing drainage patterns. A landfill with sufficient capacity to accommodate construction-related waste disposal needs would be identified. Impacts of the Action Alternative would be less than significant.

3.8.4 Avoidance, Minimization, and/or Mitigation Measures

A landfill has not yet been identified for this project. However, the construction contractor will be required to dispose of solid waste at a landfill with sufficient capacity. Disposal will be in accordance with all local, state, and federal regulations.

3.9 Geology and Soils

This section describes the soils and geologic hazards within the study area as they relate to public safety and design of the Action Alternative. The study area includes a 500-foot buffer from the SFDB centerline.

3.9.1 Regulatory Setting

Federal regulations protect geologic and topographic features under the Historic Sites Act of 1935, which establishes a national registry of natural landmarks and protects "outstanding examples of major geological features."

The *NPS Management Policies 2006* state that the NPS will "preserve and protect geologic resources as integral components of park natural systems" (NPS 2006a). Geologic resources are defined by the NPS to include both geologic features and geologic processes. Geologic features include rocks, soils and minerals, geysers, hot springs, caves, karst systems, canyons, arches, sand dunes, moraines, terraces and paleontological resources (NPS 2006a). Geologic processes can include (but are not limited to), exfoliation, erosion and sedimentation, glaciation, shoreline processes, and seismic and volcanic activity (NPS 2006a). The NPS can intervene in natural geologic processes when directed by Congress; when emergencies threaten human life and property; when there is no other feasible alternative to protect natural resources, park facilities or historic properties; and when intervention is necessary to restore impacted conditions and processes (NPS 2006a). The *NPS Management Policies 2006* also state that, before interfering with geologic processes that are potentially hazardous, superintendents will consider other alternatives (NPS 2006a).

State regulations protect topographic and geologic features under CEQA, as well as the Seismic Hazards Mapping Act of 1990 and the Alquist-Priolo Earthquake Fault Zoning Act of 1972. The Seismic Hazards Mapping Act of 1990 directs the Department of Conservation, California Geological Survey, to identify and document areas within the state that are prone to seismic hazards, including liquefaction, earthquake-induced landslides, and amplified ground shaking (California Department of Conservation 2014a).

The Alquist-Priolo Earthquake Fault Zoning Act of 1972 provides mechanisms for municipalities to prevent the construction of buildings used for human occupancy on the surface of potentially and recently active faults (California Department of Conservation 2014b). The law requires the State Geologist to establish regulatory zones (known as Earthquake Fault Zones) around the surface traces of active faults, and to issue maps of these zones (California Department of Conservation 2014b). The maps are distributed to affected municipalities and used for regulating and planning construction and development.

No Coastal Act provisions for geology and soils are relevant to roadway construction.

3.9.2 Affected Environment

3.9.2.1 Site Characteristics

The Point Reyes peninsula is a projection of the Marin County coast. The terrain along the study area is hilly, with eroded drainages, sandstone outcrops, and small valleys (YEH 2014). Tidal marshes are also present within the study area near Schooner Bay. Inverness Ridge traverses the peninsula from north to south (YEH 2014). Vegetation consists of grasses and shrubs with isolated stands of trees.

Soils characteristics are determined by proximity to water, elevation, and geology. Most soils contain clay, sand, or a combination of both. The most recent National Resources Conservation Service (NRCS) Soil Survey data for the study area indicates that the majority of soil units in the study area are hydric soils (Jacobs 2014b). Hydric soils are permanently or seasonally saturated by water and occur in areas with a high water table for a portion or the majority of the year (NRCS 2014). Soil units within the study area include the following:

- Rodeo Clay Loam: Poorly drained soil with a high water retention. This soil unit is a non-hydric soil.
- Pablo-Bayview Complex: Shallow, well-drained loamy soil with moderate permeability and water retention. This soil unit is a hydric soil.
- Hydraquents, Saline soil: Soil found in the salt marsh flats at the northern end of Drake's Estero. This soil unit is a hydric soil.
- Sirdrak Sand: Very deep, excessively drained soil with rapid permeability and low water capacity. This soil unit is a hydric soil.
- Tomales Fine, Sandy-Loams: Deep, moderately drained soils on uplands, with slow permeability and moderate water capacity. This soil unit is a hydric soil.
- Tomales-Sobega Complex: Deep, well-drained soil, with very slow to moderate permeability. This soil unit is a hydric soil.
- Tomales-Steinbeck Fine, Sandy Loam: Deep, well-drained soil, with very slow to moderate permeability. This soil unit is a hydric soil.

Aside from sedimentation within existing culverts there are no known soil erosion and sedimentation issues.

3.9.2.2 Geologic Hazards

Alquist-Priolo Earthquake Fault Zones

The California Geological Survey produces maps showing Alquist-Priolo Earthquake Fault Zones along faults that pose a potential surface-faulting hazard. The study area does not contain any Alquist-Priolo Earthquake Fault Zones. The closest of these zones is along the San Andreas Fault, which runs through the middle of Tomales Bay northeast of the study area (State of California 1974) (see Figure 11). The San Andreas Fault is the largest active fault in California and is the

tectonic plate boundary separating the Pacific Plate from the North American Plate (NPS 2014g). The only other fault in proximity to the study area is the Point Reyes Fault, a small and relatively unknown offshore fault that curves around the southern end of the Point Reyes peninsula, as shown in Figure 11 (Kotcher 2013). This fault is not considered an Alquist-Priolo Earthquake Fault Zone. Ground surface rupture due to faulting of the San Andreas Fault and the Point Reyes Fault is not expected to occur within the study area.

Ground Shaking

The intensity of ground shaking depends on the size of the earthquake (magnitude), distance from the fault, and site geologic conditions (SCEC 2014). The U.S. Geological Survey (USGS) maps earthquake probabilities to prepare for earthquakes and prevent extensive damage. These maps provide a good indication of how much ground shaking will occur in an area (SCEC 2014). The probability of a magnitude 6.0 earthquake (i.e., one defined on the Richter scale as “strong”) in the greater Marin County area in the next 30 years is between 40 and 50 percent (USGS 2009).

Liquefaction

Liquefaction is a process by which water-saturated sediment temporarily loses strength and acts as a fluid during an earthquake. The soil type most susceptible to liquefaction is loose, granular soil below the water table within approximately 50 feet of the ground surface. Liquefaction can cause buildings to sink or tilt, buried materials to rise to the ground surface, slopes to fail, surfaces to crack or cave, and ground to shift laterally (Utah Geological Survey 2013).

Marin County published liquefaction susceptibility geographic informational system (GIS) data based on data from the USGS. The liquefaction susceptibility of the study area is shown in Figure 11. Medium liquefaction susceptibility was mapped between PM 3 and PM 4. The remainder of the study area is low to very low liquefaction susceptibility rating.

Expansive Soils

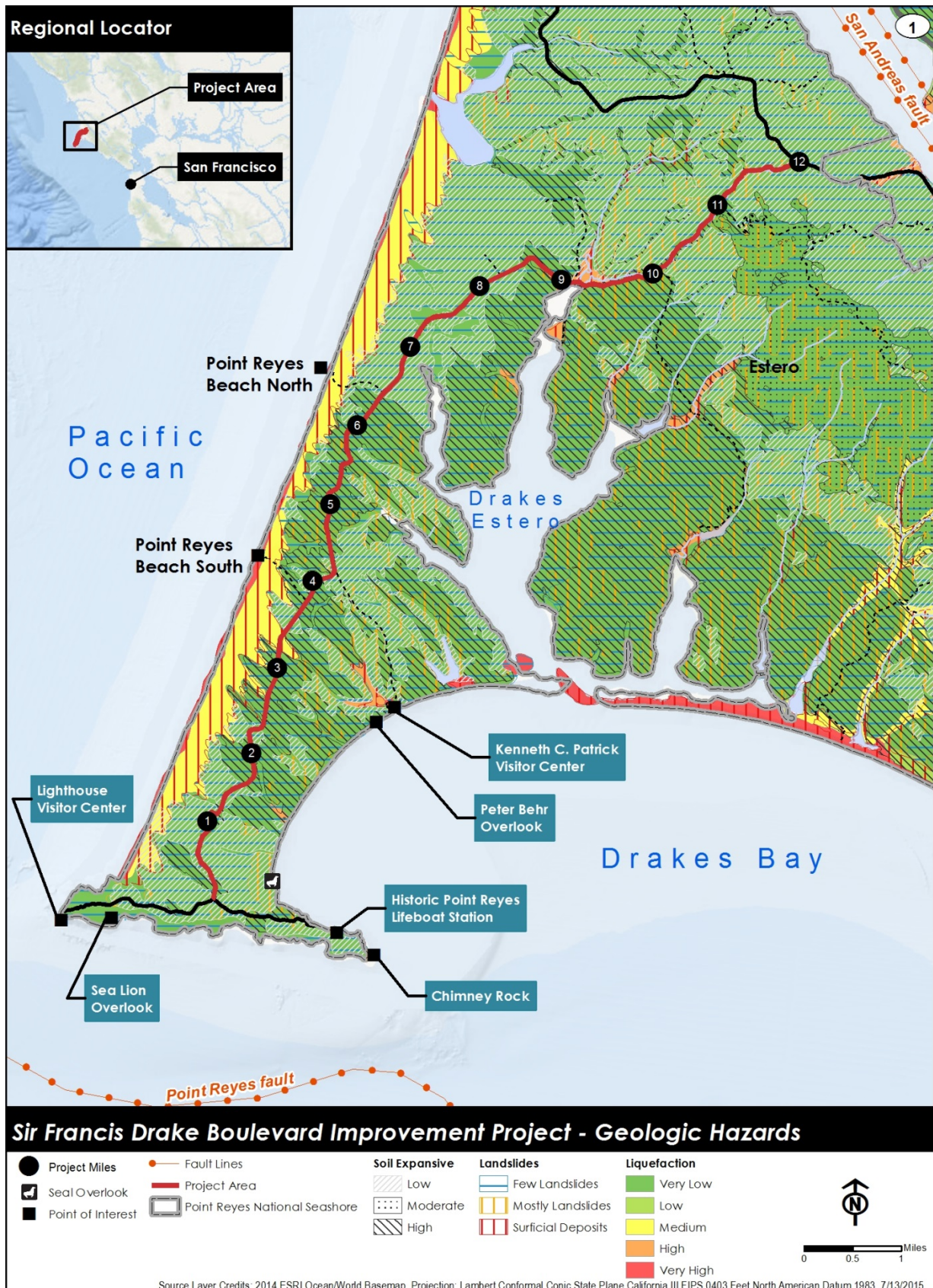
Expansive soils are characterized by the ability to undergo significant volume change (shrink and swell) as a result of a change in soil moisture content. Soil moisture content can change due to many factors, including rainfall and irrigation. Expansive soils are commonly very fine-grained, with a high to very high percentage of clay.

Marin County compiled and indexed soil data from the NRCS to create an expansive soils map as part of the *Marin Countywide Plan* update. The data indicates low potential for expansive soils between PM 0 and PM 1, and between PM 6 through PM 9 (see Figure 11). High potential for expansive soils is indicated between PM 1 and PM 6, and between PM 9 and PM 12. However, samples taken along the project corridor during a geotechnical analysis showed no swell potential, with the exception of only one sample near PM 2 that showed minimal swell potential (YEH 2014).

Landslide

A landslide is a movement of earth down a slope. Landslides are categorized by the five types of slope movement (falls, topples, slides, spreads and flows), and are further subdivided by the type of geologic material (bedrock, debris or earth) (USGS 2014). The best predictor of where a landslide might occur is the distribution and location of past landslides (USGS 1997). The USGS mapped the distribution of landslides in Marin County. The majority of the study area is located in a “few landslides” area, meaning few, if any, large mapped landslides have occurred. Portions of the study area contain previously mapped landslides and are shown in Figure 11.

Figure 11: Project Area Geologic Hazards



3.9.3 Environmental Consequences

3.9.3.1 No Action Alternative

The No Action Alternative would not resurface, restore, or rehabilitate the roadway. Regular maintenance activities would continue in order to repair pavement edges, potholes, cracking, and rutting. No impacts to geologic landforms or resources would occur. Impacts to soils would include soil compaction and increased potential for erosion due to regular maintenance activities and vehicles that inadvertently leave the roadway. The No Action Alternative would not expose people or structures to potential adverse effects involving known geological and soil hazards.

3.9.3.2 Action Alternative

Geologic Hazards

The Action Alternative would not cross or be located in proximity to identified Alquist-Priolo Earthquake Fault Zones, and would not expose people or structures to adverse effects from fault rupture. However, the study area is located in a seismically active area and has a reasonably high potential to experience strong earthquake shaking in the future. The only structures that would be replaced that could affect public safety during a seismic event are culverts and two cattle under-crossings. Most corrugated metal pipes within the study area would be replaced, larger culverts at two locations would be replaced, and two cattle under-crossings would be replaced with box culverts under the Action Alternative. Because culverts are buried underground, they typically move with the earth during seismic events. Although AASHTO standards include no seismic criteria for culvert or cattle under-crossing design, they would be constructed in compliance with Marin County standards for seismic stability. Replacement of these structures would not pose a substantial risk of loss, injury or death due to seismic activity.

Hazards related to slope instability and landslides are generally associated with foothill areas and mountain terrain, as well as steep riverbanks. The study area is considered hilly with eroded drainages, sandstone outcrops, and small valleys. However, the majority of the study area is in an area with few, if any, past landslides. Therefore, no or minimal impacts related to landslides are expected.

Soils

Impacts to soils would result from widening the roadway, paving existing pullouts, clearing vegetation, constructing cut and fill slopes and rockery walls, and replacing cattle under-crossings and box and arch culverts. Implementation of a Stormwater Pollution Prevention Plan (SWPPP) and Water Quality Construction Best Management Practices (BMPs) would reduce the impacts to soils, including soil erosion and the ability of the soil to support vegetation and impacts to soils would be less than significant.

Marin County data indicates that soils in the study area have a low potential for liquefaction, with the exception of the area between PM 3 and PM 4, which has moderate liquefaction susceptibility (see Figure 11). No improvements are proposed in this section of the study area other than resurfacing, restoring, and rehabilitating SFDB, which primarily consists of widening and repaving the roadway. No improvements to vertical alignments, slopes, or culverts would occur in this section, and no new structures, such as rockery walls, would be constructed. Because only minor changes to the roadway would occur in this section, the Action Alternative would not expose people and structures to the adverse impacts of liquefaction compared to existing conditions.

The effects of expansive soils include cracking, settlement, and uplift of structures and roads. Geotechnical analysis conducted for this project show no impact for swell potential, with one exception near PM 2 where swell potential is minimal. To avoid any potential adverse effects of expansive soils, recommendations from the final geotechnical report have been incorporated into

design of the Action Alternative. The impact of expansive soils is considered less than significant because proper engineering and construction techniques would substantially reduce this hazard.

Conclusion

The Action Alternative would not cross or be located in proximity to any earthquake fault zones, and would not expose people or structures to adverse effects from fault rupture. New culverts and cattle under-crossings would not pose a substantial risk due to seismic activity. Only minor improvements are proposed in the only section of the study area with a moderate potential for liquefaction. The majority of the study area is in an area with few, if any, past landslides, and primarily no swell potential. Recommendations provided in the *Geotechnical Investigation Report for Sir Francis Drake Boulevard* would help reduce the potential adverse impacts. For these reasons, all impacts are expected to be less than significant.

3.9.4 Avoidance, Minimization, and/or Mitigation Measures

Recommendations from the October 2014 draft version of the *Geotechnical Investigation Report for Sir Francis Drake Boulevard* have been incorporated into project design to avoid or minimize impacts. Geotechnical analyses and recommendations will continue as design progresses. To further avoid or minimize potential impacts, the following measure would be implemented:

- The area beyond the construction limits shall not be disturbed. Abandoned segments of roadway and temporary impact areas along SFDB within the project limits that would no longer be in use shall be reclaimed and revegetated. Degraded areas impacted from construction-related activity shall be replanted or reseeded with native plants from the watershed or nearby watershed under guidance from PRNS biologists. Shrubs, trees, and herbaceous perennials and annuals shall be seeded and planted along riparian corridors where impacts and vegetation removal occur. CFLHD shall prepare a restoration plan for the project in consultation with PRNS for appropriate seed mixes and plants. Revegetated areas shall be protected and cared for, including watering when needed, until restoration criteria have been met under United States Army Corps of Engineers permits, United States Fish and Wildlife Service biological opinion, and/or National Pollutant Discharge Elimination System standards. Revegetated areas shall be monitored in accordance with an approved restoration plan to ensure success criteria are met.

3.10 Farmlands

This section describes farm and grazing lands within the study area. The study area includes the construction limits of the Action Alternative (i.e., the project area).

3.10.1 Regulatory Setting

NEPA and the Farmland Protection Policy Act (FPPA, 7 United States Code [USC] 4201-4209; and its regulations, 7 CFR Part 658) require federal agencies, such as FHWA, to coordinate with NRCS if their activities may irreversibly convert farmland (directly or indirectly) to nonagricultural use. For purposes of the FPPA, farmland includes prime farmland, unique farmland, and land of statewide or local importance. Farmland subject to FPPA requirements does not have to be currently used for cropland; it can be forestland, pastureland, or cropland. The California Department of Conservation (CDC) Farmland Mapping and Monitoring Program (FMMP) defines and maps farmlands of statewide importance.

The study area is located within a Marin County prescriptive easement. Coordination with NRCS staff revealed that the Action Alternative would meet Part 523, subpart B of the FPPA, which states that construction within right-of-way (ROW) purchased on or before August 4, 1984, is not subject to the provisions of the FPPA (NRCS 2013, pers. comm. K. Oster 2015). Project impacts outside of the existing easement would be subject to the FPPA.

The California Land Conservation Act, better known as the Williamson Act, provides incentives to landowners through reduced property taxes to protect agricultural and open space land from conversion to other uses (Department of Conservation 2013). CEQA requires the review of projects that would convert Williamson Act contract land to non-agricultural uses. However, since the project occurs on federal land, no Williamson Act contract lands are located within the study area and a review is not necessary.

California Coastal Act Policies

The following California Coastal Act provisions pertain to farmlands (California Coastal Commission 2012):

- Section 30241: The maximum amount of prime agricultural land shall be maintained in agricultural production to assure the protection of the areas' agricultural economy, and conflicts shall be minimized between agricultural and urban land uses through all of the following:
 - (a) By establishing stable boundaries separating urban and rural areas, including, where necessary, clearly defined buffer areas to minimize conflicts between agricultural and urban land uses.
 - (d) By assuring that public service and facility expansions and nonagricultural development do not impair agricultural viability, either through increased assessment costs or degraded air and water quality.
 - (e) By assuring that all divisions of prime agricultural lands, except those conversions approved pursuant to subdivision (b) of this section, and all development adjacent to prime agricultural lands, shall not diminish the productivity of such prime agricultural lands.
- Section 30242: All other lands suitable for agricultural use shall not be converted to non-agricultural uses unless (1) continued or renewed agricultural use is not feasible, or (2) such conversion would preserve prime agricultural land or concentrate development consistent with Section 30250. Any such permitted conversion shall be compatible with continued agricultural use on surrounding lands.
- Section 30243: The long-term productivity of soils and timberlands shall be protected.

3.10.1 Affected Environment

The most recent PRNS *General Management Plan* (1980) identifies the majority of the land adjacent to SFDB as a pastoral zone. The pastoral zone includes approximately 15,000 acres within SFDB, most of which is on the Point Reyes peninsula, in which dairy and beef cattle are allowed to graze under permit or lease from the NPS (NPS 1980). Numerous historic beef and dairy ranches operate in this zone within the vicinity of SFDB, as listed in Table 5 and shown in Figure 12. The ranches are located on hilly terrain, with a mixture of grasses and shrubs and isolated stands of trees. Most of the ranches adjacent to SFDB have infrastructure to support ranching such as homes, barns, and water lines.

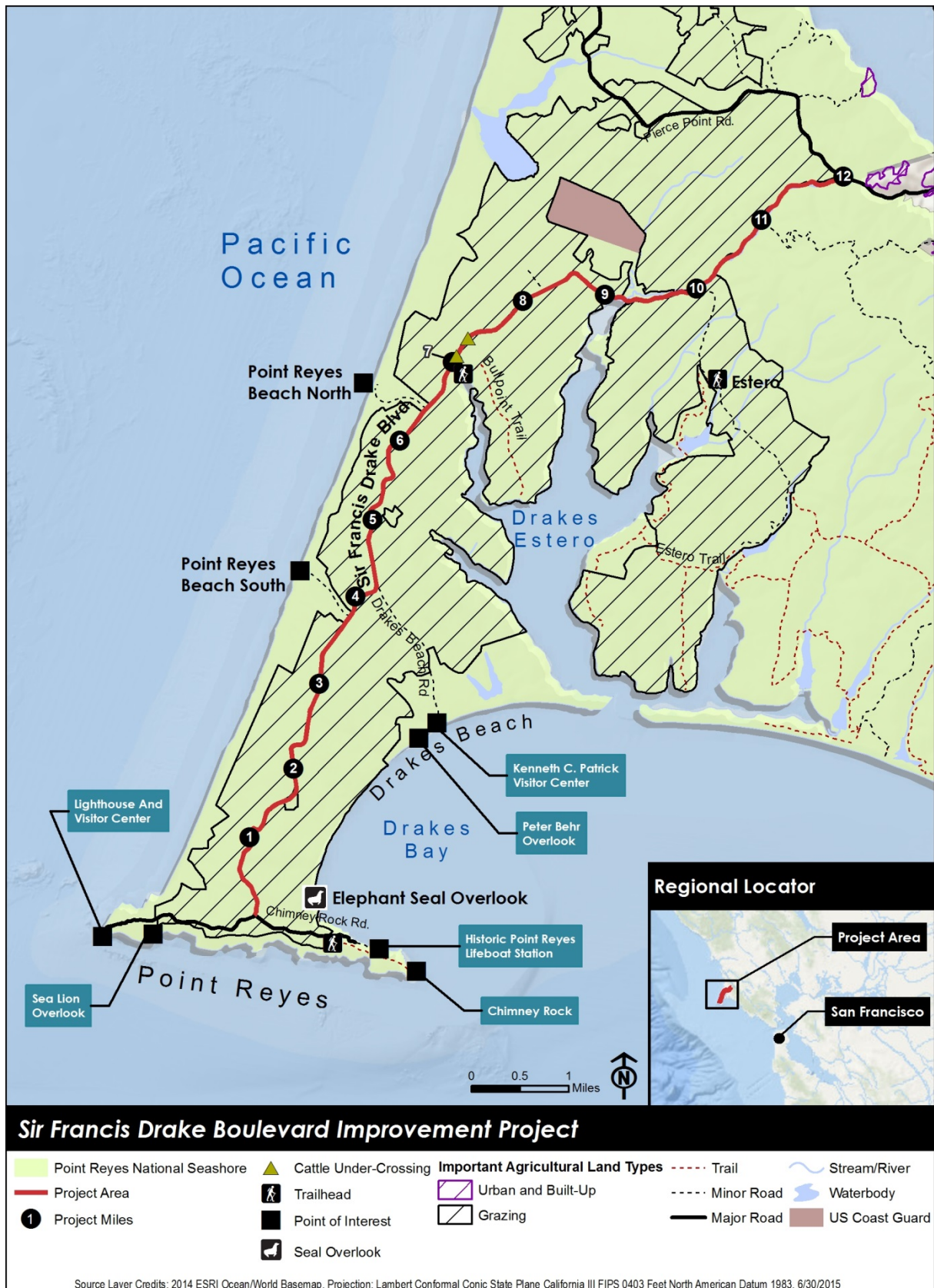
Table 5: Ranch Sizes in Study Area

Ranch Name	Size (Acres)	Ranch Name	Size (Acres)
Historic Ranch A	710.99	Historic Ranch E	1371.37
AT&T Ranch	482.04	Historic Ranch F	1559.44
Historic Ranch B	1240.94	Historic Ranch G	928.38
Historic Ranch C	702.92	Historic Ranch M	1178.69
Historic Ranch D	735.50	Historic Ranch N	907.93
D. Rodgers	382.33		

Figure 12: Study Area Farmlands and Ranches



Figure 13: Grazing Lands and Farmlands of Statewide Importance



According to data from the FMMP, the study area contains grazing land, a type of farmland of statewide importance (see Figure 13). The FMMP defines grazing land as, “land on which the existing vegetation is suited to the grazing of livestock. This category was developed in cooperation with the California Cattlemen's Association, University of California Cooperative Extension, and other groups interested in the extent of grazing activities” (California Department of Conservation 2013).

Coordination with the NRCS occurred in January and February of 2015 to meet FPPA requirements and complete the Farmland Conversion Impact Rating (NRCS-CPA-106) form for this project. The NRCS determined that 0.01 acre of prime and unique farmland and 0.75 acre of farmland of statewide importance (grazing), as defined by 7 CFR 658, exist within the project area. Figure 13 shows farmland of statewide importance (grazing), but does not indicate prime and unique farmland due to the small size (0.01 acre). The 0.01 acre of prime and unique farmland is located just north of PM 2 where SFDB begins to curve north.

3.10.2 Environmental Consequences

3.10.2.1 No Action Alternative

Under the No Action Alternative, SFDB would remain in its current alignment. Existing conditions would continue along SFDB and no adverse impacts would occur to farmlands or grazing lands.

3.10.2.2 Action Alternative

The Action Alternative would result in a shift of the 60-foot SFDB easement in localized areas. To accommodate shifts in the SFDB alignment, land outside of the existing easement would be added to the new easement, and land in the current easement would be abandoned. The SFDB easement would remain the same size as the existing easement. The Action Alternative would permanently impact 1.05 acres and temporarily impact 1.78 acres of land currently outside of the existing easement. Of these impacts, up to approximately 0.01 acre of Prime and Unique Farmland and 0.75 acre of farmland of statewide importance (grazing land) could be converted to non-agricultural use. In many instances, land currently within the easement that could be viable for grazing would be relinquished when the easement is shifted. These relinquished areas would offset some of the impacts associated the new easement. Therefore, permanent impacts to grazing land outside of the existing easement would likely be less than 0.75 acre.

Permanent impacts to grazing land would result from paving, creation of cut slopes, and installation of culverts. Temporary impacts to grazing land include vegetation and ditch clearing, and would occur primarily during construction. Impacts to grazing land would be minimal and would generally occur adjacent to the existing 60-foot Marin County roadway easement. The proposed improvements would not result in a total loss of viability of the land or jeopardize the continued existence of the existing ranches.

Upon completion of the CPA-106 form, NRCS determined that the project's total corridor assessment score was a 66. FPPA regulations state that if the total corridor assessment score is less than 160, no further consideration for the protection of farmland is required.

California Coastal Act Policies

The Action Alternative would not impair agricultural viability by increasing assessment costs or degraded air and water quality, and would not diminish the productivity of agricultural lands.



Historic A Ranch along SFDB in the project area

The Action Alternative would be compatible with continued agricultural use on surrounding lands.

Conclusion

Up to approximately 0.01 acre of Prime and Unique Farmland and 0.75 acre of farmland of statewide importance (grazing land) could be converted to non-agricultural use as a result of shifting the SFDB easement in localized areas. However, in many instances, land currently within the easement that could be viable for grazing would be relinquished when the easement is shifted. The proposed improvements would not result in a total loss of viability of the land or jeopardize the continued existence of the existing ranches. In addition, the NRCS determined that no further consideration for the protection of farmland is required. For these reasons, impacts would be less than significant.

3.10.3 Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization and/or mitigation measures are proposed in accordance with FPPA regulations, described above.

3.11 Hazardous Materials

This section identifies locations of known regulated materials so they can be avoided or their impacts minimized. Regulated materials are substances or materials, including hazardous substances and materials, that have been determined by the Environmental Protection Agency (EPA) to be capable of posing an unreasonable risk to health, safety, and property. Examples of regulated materials include asbestos, lead-based paint, heavy metals, and petroleum hydrocarbons (e.g., gasoline and diesel fuels), which could be harmful to human health and the environment. Regulated materials may exist within the study area, which is up to 0.5 mile from the project area, at facilities that generate, store, and dispose of these substances, or at locations of past releases of these substances.

3.11.1 Regulatory Setting

The federal government regulates hazardous wastes through the Resource Conservation and Recovery Act (RCRA) of 1976 and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, and by implementing federal regulations in Title 40 of the CFR. The State of California regulates hazardous materials and wastes through the California Health and Safety code and the California Code of Regulations, Title 22, Division 4.5. The California Department of Toxic Substances Control is responsible for the permitting and regulating hazardous materials.

The Clean Air Act (CAA) of 1970, which was last amended in 1990, identified asbestos as a hazardous pollutant. Therefore, asbestos is addressed both under the Air Quality section and the Hazardous Materials section of this document.

Environmental regulatory records were reviewed to evaluate whether the Action Alternative corridor or nearby properties have faced, or are currently facing, any regulatory actions, fines, or notices of violation for conditions that may have an environmental impact on the project. The following records were reviewed: California Department of Toxic Substances Control Envirostor Database, California Environmental Protection Agency Cortese List Data Resources, and Environmental Protection Agency My Maps for My Environment. No sites in or near the study area were listed in the regulatory records reviewed for the Action Alternative.

3.11.2 Affected Environment

Since the early 1900's, the study area has consisted mostly of undeveloped assemblage of parcels that are used for cattle ranching. According to the California Department of Conservation,

Division of Mines and Geology, the study area is not likely to contain naturally occurring asbestos.

Site inspections of the project corridor and the surrounding properties were conducted on June 25, 2014. Observations included, but were not limited to, signs of previous developments, mine works, waste rock, refuse, pits, ponds, lagoons, surface water features, distressed vegetation, and general environmental conditions. The property inspections included:

- Visual site inspection of SFDB roadway easement from Pierce Point Road to Chimney Rock.
- Visual site inspection of areas where the proposed improvements may extend beyond the existing roadway easement.

Reconnaissance was limited to a visual inspection of property conditions from public rights-of-way to document the occurrence of potential recognized environmental conditions (RECs). RECs are the presence or likely presence of hazardous substances, hazardous waste, or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any such substances into structures on the property or into the ground, groundwater, or surface water. The term REC is not intended to include *de minimis* conditions that generally do not present a material risk of harm to public health or the environment, and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies. During reconnaissance, some high voltage power poles with small/medium size transformers were observed adjacent to SFDB and noted to be in good condition (no leaking or evidence of leaking on unit or ground).

Several ranch properties were also identified during the site reconnaissance along SFDB adjacent to the proposed improvements. Only one property — Ranch A — contained potential RECs. This property is located adjacent to SFDB near the southern project terminus. Normal household refuse, small wood debris, tires, and old vehicles were observed on site. Because of the relatively minor impacts they could have, old or abandoned vehicles likely represented *de minimis* environmental conditions, defined in the American Society for Testing and Materials (ASTM) standard as a condition that “...generally does not present a threat to human health or the environment and that generally would not be the subject of an enforcement action.” No drums, soil staining, or other apparent signs of hazardous waste disposal or releases were observed. One aboveground storage tank was observed along the access road/driveway adjacent to the Nunez Family Farm. It appeared that the tank was used to store water (not fuel). Photographs of the site inspection are included in Appendix B.



Household refuse, small wood debris, and tires in study area

3.11.3 Environmental Consequences

3.11.3.1 No Action Alternative

The No Action Alternative would have no impact on hazardous waste sites in the area of assessment since this alternative would not involve construction. RECs are not expected to affect ongoing maintenance activities described in Chapter 2 or introduce hazardous materials into the study area.

3.11.3.2 Action Alternative

Based on the environmental database research, review of historic maps, and site reconnaissance of the study area, only one *de minimis* REC is located on sites within the study area. As stated

above, *de minimis* findings generally do not pose a risk that would be subject of an enforcement action.

Although only one *de minimis* finding was identified, contamination could still be encountered during construction activities. Therefore, construction personnel will be trained to recognize signs of possible contamination in soil such as odors and staining.

Conclusion

Only one *de minimis* REC is located on sites within the study area. As stated above, *de minimis* findings generally do not pose a risk that would be subject of an enforcement action. With the implementation of the avoidance, minimization, and mitigation measures listed below, no significant impacts would occur.

3.11.4 Avoidance, Minimization, and/or Mitigation Measures

The following measures will be implemented to reduce the potential for hazardous materials impacts:

- Owners of subsurface utilities where excavation is to be conducted shall be contacted in order to assess whether any of the utilities are placed within Transite™ asbestos pipe. If subsurface utilities to be relocated are housed in Transite™ asbestos pipe, special handling, and possibly asbestos abatement, shall be required. Any disposal shall be conducted in accordance with local, state, and federal regulations.
- Demolition would be required during construction for crossings and culverts. It is not anticipated that asbestos-containing materials would be encountered. However, per the requirements of Regulation 11, Rule 2 (Asbestos Demolition, Renovation, and Manufacturing), the contractor shall submit a written plan or notification of intent to the Bay Area Air Quality Management District's Enforcement Division and Air Pollution Control Officer prior to commencing demolition of structures.

3.12 Air Quality

Per the transportation conformity rule, this project is exempt from conformity with established air quality goals (40 CFR 93.126 exempt projects) because the Action Alternative would not increase the overall capacity of SFDB and would not significantly alter the vertical and horizontal alignment. Therefore, no long-term air quality impacts are anticipated. However, short-term air quality impacts from construction activities are anticipated and discussed below. The study area for air quality is Marin County.

3.12.1 Regulatory Setting

The Clean Air Act is the federal law that governs air quality. The EPA is responsible for establishing national ambient air quality standards (NAAQS) for six "criteria" pollutants to protect the public from health hazards associated with air pollution. These six criteria pollutants are carbon monoxide (CO), nitrogen dioxide (NO₂), ozone (O₃), particulate matter (PM_{2.5} and PM₁₀), lead (Pb), and sulfur dioxide (SO₂). The CAA also established the Asbestos National Emission Standard for Hazardous Air Pollutants in order to minimize the release of asbestos fibers during activities such as demolition by closely monitoring those activities for proper notification and asbestos emissions control. In 1971, the EPA also identified asbestos as a hazardous pollutant. Therefore, asbestos is addressed both under the Air Quality section and the Hazardous Materials section of this document.

The relevant air quality management agencies in Marin County include the EPA, California Air Resource Board (CARB), and the Bay Area Air Quality Management District (BAAQMD). The EPA has established federal standards for which the CARB and BAAQMD have primary implementation responsibility. The CARB and BAAQMD are responsible for ensuring that state

standards are met. The BAAQMD is responsible for implementing strategies for air quality improvement and recommending mitigation measures for new growth and development. At the local level, air quality is managed through land use and development planning practices, which are implemented in the county through the general planning process. The BAAQMD is responsible for establishing and enforcing local air quality rules and regulations that address the requirements of federal and state air quality laws.

Guidance for the determination of significant air impacts under CEQA within Marin County is found in the document titled *CEQA: Air Quality Guidelines* prepared by BAAQMD (BAAQMD 2012).

Construction-related emissions were calculated for this project using the Sacramento Metropolitan Air Quality Management District (SMAQMD) Roadway Construction Emission Model (RCM) to estimate the levels of criteria pollutants that would be associated with project construction. As per confirmation with Marin County, this model was also used to compare the results to thresholds consistent with the BAAQMD CEQA guidelines (pers. comm. Taylor 2015). The road construction model is a public-domain spreadsheet model that enables users to estimate emissions using a minimum amount of project-specific information. The model estimates emissions for load hauling (on-road heavy-duty vehicle trips), worker commute trips, construction site fugitive dust (PM₁₀ and PM_{2.5}), and off-road construction vehicles. Although exhaust emissions were estimated for each activity, fugitive dust estimates were limited to major dust-generating activities, which include grubbing⁶, land clearing, grading, and excavation.

The BAAQMD has not established specific construction-related emission thresholds. Therefore, the significance thresholds defined in *Regulation 2 Permits, Rule 2 New Source Review* (BAAQMD 2014) were used for this project and are summarized in Table 6.

Table 6: Significance Thresholds for Construction-Related Emissions

Pollutant	Significance Thresholds	
	Daily (pounds per day)	Annual (tons per year)
Carbon monoxide	500	100
Nitrogen oxides	50.0	40.0
Sulfur oxides	80.0	40.0
Particulate matter (PM _{2.5})	50.0	10.0
Particulate matter (PM ₁₀)	80.0	15.0
Ozone	50.0	40
Lead	3.2	0.6
Fluorides	15.0	3.0
Sulfuric acid mist	35.0	7.0
Hydrogen sulfide	50.0	10.0
Total reduced sulfur compounds	50.0	10.0
Reduced sulfur compounds	50.0	10.0

Source: BAAQMD 2014.

3.12.2 Affected Environment

3.12.2.1 Climate Conditions

In the summer, the West Coast is dominated by a semi-permanent high pressure cell centered over the northeastern Pacific Ocean. Storms rarely affect the California coast because of the persistence of this high pressure cell. Thus, conditions that exist during the summer along the California coast consist of a northwest air flow and negligible precipitation.

⁶ Grubbing refers to the removal of trees, shrubs, stumps and rubbish from the right-of-way of a transportation corridor.

In the winter, the Pacific high pressure weakens and shifts southward, resulting in more frequent storms. The San Francisco Bay Area experiences over 80 percent of the annual rain falls between November and April. During the winter rainy periods, inversions are strong while winds are light, resulting in high potential for air pollution.

According to the Western Regional Climate Center (WRCC), the closest, most representative monitoring station to the proposed study area is located at San Francisco Ocean Station south of the southern project terminus. Climate data at this station was available from years 1948 to 2014 and is summarized in Table 7.

Table 7: Temperature and Precipitation Data (1948-2014) for Point Reyes, California

Month	Temperature (°F)		Precipitation (inches)
	Average Maximum	Average Minimum	Average
January	57.6	44.2	3.99
February	59.4	45.9	3.55
March	59.8	46.5	2.81
April	60.4	47.6	1.23
May	60.6	49.6	0.49
June	62.0	51.5	0.15
July	62.7	53.4	0.02
August	64.0	54.6	0.08
September	65.6	52.2	0.16
October	65.7	52.2	1.08
November	62.2	48.2	2.66
December	57.6	44.5	3.77
Annual	61.5	49.4	19.99

Source: WRCC 2014.

3.12.2.1 Existing Air Quality Conditions

Fugitive Dust

Fugitive dust is particulate matter that becomes airborne and has the potential to adversely affect human health or the environment. The most common forms of particulate matter are known as PM₁₀ and PM_{2.5}. Fugitive dust is mainly generated from construction activities such as earth moving, driving on haul roads, and ground disturbance.

Class I Areas

Construction activities contribute to visibility concerns through their primary PM_{2.5} and nitrogen oxides (NO_x) emissions, which contribute to the formation of secondary PM_{2.5}. Under the provisions of the CAA, EPA has designated a number of areas in California, including PRNS, as Mandatory Class I Federal Areas, where visibility is an important value. These mandatory Class I areas are listed in 40 CFR 81.406. Under the EPA Regional Haze Rule (RHR), states must establish goals to improve visibility in Class I areas and develop long-term strategies to reduce emissions of air pollutants that cause visibility impairment. These goals are outlined in the state implementation plans.

3.12.3 Environmental Consequences

3.12.3.1 No Action Alternative

The No Action Alternative would result in a continuation of current roadway conditions and maintenance activities, which would not substantially affect air quality in the study area.

3.12.3.2 Action Alternative

As described above, this project is exempt from transportation conformity requirements. Therefore, no long-term air quality impacts are anticipated and no further analysis is required.

Construction activities are a source of dust and exhaust emissions that can have substantial impacts on local air quality (i.e., exceed state air quality standards for ozone, CO, PM₁₀, and PM_{2.5}). These impacts include emissions resulting from earthmoving and use of heavy equipment, as well as land clearing, ground excavation, cut-and-fill operations, paving, and roadway reconstruction. Emissions can vary substantially from day to day, depending on the level of activity, the specific operations, and the prevailing weather. Construction under the Action Alternative is expected to last no more than 18 months. Therefore, long-term construction-related impacts are not anticipated. However, short-term construction-related impacts are anticipated and discussed below. Table 8 summarizes emissions associated with construction using the SMAQMD RCEM.

Table 8: Sir Francis Drake Boulevard Estimated Construction Emissions (Unmitigated)

Construction Year	Reactive Organic Gases (ROG)	Daily Average Emissions (lbs/day)			
		CO	NO _x	PM ₁₀	PM _{2.5}
2015	5.2	24.1	45.5	32.6	8.6
Threshold	50	500	50	80	50
Exceeds Threshold?	No	No	No	No	No

Notes: PM emissions include both exhaust and fugitive dust.

Emissions from reactive organic gases are included because they contribute to the formation of ozone.

Source: SMAQMD RCEM 2014

As shown in Table 8, emissions associated with the construction are not anticipated to exceed the BAAQMD thresholds of significance for construction-related criteria air pollutants and precursors. Detailed emissions calculations from the RCEM are provided in Appendix C.

Conclusion

This project is exempt from transportation conformity requirements. Therefore, no long-term air quality impacts are anticipated. Emissions associated with construction are not anticipated to exceed the BAAQMD thresholds of significance for construction-related criteria air pollutants and precursors. Although naturally occurring asbestos is not anticipated, it may be encountered during construction. Mitigation would be implemented to reduce the impact to less-than-significant levels, described below.

3.12.4 Avoidance, Minimization, and/or Mitigation Measures

Project construction is not anticipated to exceed the BAAQMD thresholds of significance for construction-related criteria air pollutants and precursors. Therefore, control measures to reduce temporary construction-related emissions are not required. However, the following standard measures will be implemented to minimize construction-related impacts:

- Operators shall avoid leaving equipment and vehicles idling for more than five minutes when parked or not in use.
- The contractor shall control dust within the construction limits in accordance with Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects (referred to as FP-3) Section 158, FP-3 Section 312, and applicable state and federal regulations.

As discussed in the Hazardous Materials section, asbestos-containing materials are not expected to be encountered during construction. However, per the requirements of Regulation 11, Rule 2 (Asbestos Demolition, Renovation, and Manufacturing), the contractor shall submit a written plan or notification of intent to the BAAQMD's Enforcement Division and Air Pollution Control Officer prior to commencing demolition of structures.

3.13 Wetlands and Other Waters of the US

This section discusses the numerous wetlands, creeks, drainages, and other waterbodies identified in the project area and the jurisdiction of these resources. The information provided in this section is summarized from the *Wetland, Other Waters of the U.S. and Riparian Area Delineation Report* (Jacobs 2014b) prepared for this project. Totalling approximately 112 acres, the study area used for this analysis generally encompasses the existing 60-foot-wide Marin County roadway easement for SFDB. In certain locations, the study area is wider to accommodate proposed localized improvements, such as minor roadway realignment.

3.13.1 Regulatory Setting

Under Section 404 of the Clean Water Act, the U.S. Army Corps of Engineers (USACE) regulates the discharge of dredged and fill materials into waters of the U.S. As defined in 33 CFR 328.3, these waters generally include wetlands and other waters, such as intrastate lakes, rivers, streams, mudflats, and tributaries to those waters. The EPA shares responsibility over waters of the U.S., with the USACE overseeing the Section 404 permit program. In addition, Executive Order 11990 directs federal agencies to observe a “no net loss” of wetlands in order to “minimize the destruction, loss, or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands.” NPS Director’s Order #77-1 (2002) incorporates direction regarding wetlands from the NPS *Management Policies 2006* and adopts this no net loss policy by establishing internal measures to implement it. As part of the NPS process, a Wetland Statement of Findings is required to ensure compliance with the Director’s Order.

Section 10 of the Rivers and Harbors Act of 1899 predates Section 404 of the CWA. The USACE administers Section 10, taking jurisdiction over “...navigable waters subject to the ebb and flow of the tide, or those presently used, have been used in the past, or could be used for interstate transport or foreign commerce.” Jurisdiction granted to the USACE under Section 10 extends to the mean high-water mark, including areas of “tidal influence.”

In California, the Regional Water Quality Control Boards historically claimed jurisdiction over the same features as the USACE. Based on recent case law, each board’s authority may extend to isolated wetlands and waters no longer regulated by the USACE. Section 401 of the Clean Water Act and the Porter-Cologne Act provide the Regional Water Quality Control Boards’ regulatory authority, which is further discussed in the Water Quality section. In addition, California State Water Resources Control Board Resolution No. 2008-0026 sets forth a policy of protecting both wetlands and riparian areas for the purpose of maintaining water quality.

California Coastal Act Policies

The California Coastal Act asserts a number of measures for the protection of wetlands, streams, and other aquatic features within the coastal zone. Article 4, Section 30233 sets forth consistency requirements for the diking, filling, or dredging of open coastal waters, wetlands, estuaries, and lakes. Diking, filling, or dredging of these waters are limited to activities such as those incidental to public services, restoration activities, and new or expanded port, energy, and coastal-dependent industrial facilities. If the project is an allowable activity, similar to Section 404(b)(1) of the federal Clean Water Act, then the proposed action can only be allowed if there is no feasible alternative that is less environmentally damaging. Article 5, Section 30240 of the act also sets forth requirements for protection of environmentally sensitive habitats, which includes wetlands, streams, and riparian areas. Such habitats are to “be protected against any significant disruption of habitat values,” and the use of such areas is limited to only those dependent on the resources. Any development in areas adjacent to environmentally sensitive habitat areas must be designed to avoid substantial degradation and be compatible with continuance of the habitat.

3.13.2 Affected Environment

The study area contains a variety of freshwater, estuarine, and drainage ditch complexes that are located within or adjacent to California's coastal zone, as defined by the California Coastal Act. Wetland scientists delineated aquatic features within the study area on April 9 through April 13, 2014, in accordance with the 1987 USACE *Wetlands Delineation Manual* (Wetland Training Institute) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region* (Environmental Laboratory 2010). During the delineation, 32 wetlands were identified, totaling almost 16 acres and consisting of 13 distinct types (see Table 9). Wetlands were identified based on wetland system and class, and water input and output (e.g., riverine). Seventy percent of the wetlands within the study area are freshwater wetlands dominated by woody-stemmed plants less than approximately 20 feet tall (i.e., palustrine scrub-shrub) with hydrology stemming from groundwater seeps. Specifically, hillside seeps on the edge of SFDB support this prevalent wetland type, which is composed of Arroyo willow thickets intermixed with scrubby red alder. At the edge of this wetland type, herbaceous species, including giant horsetail (*Equisetum telmateia*), water hemlock, and grasses, including velvet grass and tall fescue, line the toe-of-slope.



Palustrine scrub-shrub wetland with hydrology from groundwater seep

In addition to wetlands, one perennial, four ephemeral, and 18 intermittent streams were identified during the survey, totaling nearly 0.6 acre (see Table 9). A small, intertidal segment of Schooner Creek, a perennial stream, intersects the study area. Schooner Creek flows from the north into Schooner Bay through salt marsh flats. This segment of Schooner Creek is tidally influenced and subject to Section 10 of the Rivers and Harbors Act. East Schooner Creek is a perennial stream that parallels much of the northern portion of the project corridor until it crosses underneath SFDB via a culvert and eventually flows into Schooner Creek. Within the study area, East Schooner Creek is densely vegetated and identified as a palustrine forested wetland. The culvert intended to convey East Schooner Creek beneath the roadway contains deposition of sediment up to approximately two-thirds of the culvert opening, which currently impedes stream flows. Intermittent and ephemeral streams identified during the survey transect the study area at various locations and flow into a variety of waterbodies nearby, including East Schooner Creek, Schooner Bay, and Barries Bay.



Relatively permanent intermittent channel

Riparian habitat within the study area is located in the forested portion of SFDB between PM 9 and PM 12. This habitat – totaling approximately 4.8 acres – was delineated to the edge of the tree canopy (i.e., drip line) and much of the habitat corresponds to the wetlands located adjacent to East Schooner Creek or within the bottomlands of East Schooner Creek.

The *Wetland, Other Waters of the U.S. and Riparian Area Delineation Report* prepared for this project has been submitted to the USACE, along with a request for a preliminary jurisdictional determination. This determination assumes that all aquatic features identified during the field survey are under the jurisdiction of the USACE. For maps of wetlands and other waters of the U.S. identified within the study area, please refer to Appendix D.

3.13.3 Environmental Consequences

3.13.3.1 No Action Alternative

The No Action Alternative would not improve the roadway and would consist of continuing existing maintenance practices. Maintenance activities, including clearing and grubbing in the right-of-way, could result in impacts to jurisdictional and non-jurisdictional waters. Wetland or other waters impacts may occur from removal of vegetation or incidental impacts from foot traffic or equipment during maintenance activities. Because standard BMPs are expected to be implemented during maintenance activities, such as conducting work during the dry season, the No Action Alternative is anticipated to have minimal adverse impacts to wetlands and waters of the U.S.

3.13.3.2 Action Alternative

The Action Alternative would permanently and temporarily impact wetlands and other waters of the U.S. as a result of roadway improvements. Based on conceptual design, the Action Alternative would permanently impact approximately 4.4 acres of wetlands and temporarily impact approximately 4.9 acres of wetlands. In addition, 0.4 acre of permanent and 0.2 acre of temporary impacts to other waters of the U.S. would occur. Table 9 summarizes direct impacts to each type of wetland and other waters of the U.S. In addition, approximately 2.6 acres of permanent impacts and 1.9 acres of temporary impacts to riparian habitat would occur. Due to the overlap in riparian habitat and wetlands identified between PM 9 and PM 12, approximately 0.1 acre of permanent and 2.4 acres of temporary riparian impacts also correspond to wetland impacts. Temporarily impacted areas would be restored shortly after construction and would be monitored to attain success criteria, which will be outlined in the mitigation and monitoring plan. Wetlands, other waters of the U.S., and riparian impacts are a conservative estimate based on conceptual design. Actual impacts after final design are anticipated to be less.

Along most of the project corridor, these impacts are associated with excavation and fill to widen the roadway, replace or repair existing 18-inch and 24-inch culverts, and clear and grub 3–12 feet adjacent to the roadway to create an adequate clear zone. In localized areas of roadway reconstruction, wetland impacts would result from excavation and fill related to, not only the aforementioned roadway widening and clearing and grubbing of the clear zone, but also realigning the roadway to improve sight distance, soften sharp curves, and/or aid in reducing roadway flooding. The improvements between PM 9.3 and PM 9.8 would have the largest single impact as a result of localized reconstruction because this segment is surrounded by numerous wetlands and riparian habitat and the roadway would be raised and shifted approximately 12 feet to the south. In addition, impacts to other waters of the U.S. would result from culvert replacements at Schooner Creek and replacement of an existing box culvert at East Schooner Creek.

The two existing corrugated metal pipe (CMP) culverts at Schooner Creek would be replaced to improve natural drainage flow and tidal dynamics. The Action Alternative would install an open bottom arch structure with an approximately 32-foot-wide opening. To create a dry work area, sheet piles would be driven close to the existing outside culvert edge and act as a coffer dam⁷. The area behind the sheet piles would be temporarily dewatered. This action would temporarily restrict the channel width to 16 feet, which is currently the channel's narrowest width. The existing culverts would be removed and replaced in two separate phases to allow for one lane of traffic on SFDB to remain open throughout construction. It is anticipated that a track hoe excavator would be used to remove embankment on the sides of the existing culverts, cut the culverts at a joint, and pull the culvert sections out of the creek. Concrete wingwalls and headwalls would be installed on both the upstream and downstream ends of the culvert. In-

⁷ A coffer dam is a type of watertight structure designed to facilitate construction in areas that are normally submerged, such as bridges and piers.

channel work would be required in order to install riprap for scour protection. Minimal excavation in the middle of the Schooner Creek channel would be required to remove the existing culverts, and excavation on the sides of the creek channel would be required to install riprap boulders.

At East Schooner Creek, the Action Alternative would remove the existing CMP culvert, excavate excess sediment, and install a 6-foot by 12-foot box culvert placed in the bed of the channel, with the bottom of the culvert sunk at least 1 foot below the existing creek bed to allow for a natural stream bottom. Installation of the box culvert would require excavation of the stream bank and in-stream water work approximately 50 feet upstream and 50 feet downstream of the intersection of SFDB and East Schooner Creek. The culvert replacement would require clearing and grubbing of vegetation in the vicinity of the culvert, excavation down to approximately 8 feet to remove the failed culvert and excess sediment, installation of the box culvert, backfilling, and repaving of the road surface.

Table 9: Wetland and Other Waters of the U.S.

Type ¹	Acres within Study Area	Permanent Impacts (acres)	Temporary Impacts (acres)
Wetlands			
Palustrine Forested-Slope	0.329	0.088	0.180
Palustrine Scrub-shrub-Slope	5.934	0.910	0.830
Palustrine Forested-Riverine	1.754	0.616	1.022
Palustrine Emergent-Slope	2.782	0.548	0.691
Palustrine Emergent-Depressional	3.707	1.715	1.496
Palustrine Scrub-shrub-Riverine	0.111	0.045	0.063
Riparian Emergent-Riverine	0.261	0.106	0.153
Riparian Forested-Riverine	0.087	0.026	0.058
Riparian Scrub-shrub-Riverine	0.425	0.179	0.239
Palustrine Emergent-Riverine	0.002	0.002	0.000
Estuarine Emergent-Estuarine	0.342	0.045	0.140
Palustrine Scrub-shrub-Depressional	0.199	0.133	0.060
Palustrine Emergent-Mineral Soil (vernal pool)	0.005	< 0.001	0.005
Total	15.94	4.413	4.937
Other Waters of the U.S.			
Ephemeral	0.077	0.060	0.016
Intermittent	0.405	0.291	0.100
Perennial (Schooner Creek)	0.122	0.018	0.104
Total	0.604	0.369	0.220

¹Wetland types are based on the Cowardin Classification system (Cowardin et al. 1979) and hydrogeomorphic classifications (Brinson et al. 1993).

A mitigation plan will be developed for incorporation into the individual Section 404 permit package, which will be obtained from the USACE, San Francisco District, for permanent and temporary discharge of fill material into waters of the U.S. Because an individual 404 permit is required, and fill would be placed within special aquatic sites (i.e., wetlands), a 401 Water Quality Certification will also be required from the San Francisco Bay Regional Water Quality Control Board. In addition, a Section 10 permit will be required for work within Schooner Creek and the estuarine emergent wetland. Impacts to riparian habitat would be less than significant through implementation of a mitigation plan, which would require restoration and monitoring along temporarily impacted riparian areas.

California Coastal Act Policies

In compliance with the California Coastal Act, the filling of wetlands and other waterbodies and dredging of East Schooner Creek to remove excess sediment would be incidental to resurfacing, restoring, and rehabilitating SFDB for public services (i.e., to maintain and improve public access to homes, ranches, and PRNS). Impacts to these aquatic resources have been minimized to the greatest extent practicable, as described further below, and mitigation would be completed to compensate for permanent impacts. Implementation of additional avoidance and minimization measures was constrained because wetlands and other waterbodies are prevalent within the study area and commonly located adjacent to the existing roadway. Additional measures could not be implemented while still meeting the purpose and need of the project, such as widening the roadway to a consistent 24-foot width. As described in Chapter 2, Alternatives, other alternatives and options were considered to minimize impacts, but no other less environmentally damaging practicable alternative was identified. The implementation of avoidance, minimization, and mitigation measures (listed below), as well as compliance with applicable permits and the U.S. Fish and Wildlife Service (USFWS) biological opinion prepared for this project, would ensure no significant disruption in habitat values. See the Special Status Species and Sensitive Natural Communities section for further discussion on environmentally sensitive habitats.

Conclusion

The Action Alternative would initially result in substantial adverse impacts to wetlands and other waters of the U.S. However, with the implementation of a mitigation and monitoring plan for permanent and temporary impacts to wetlands, other waters of the U.S., and riparian habitat, these impacted areas would be restored and/or mitigated such that impacts are ultimately expected to be short-term and minimal. Overall, the Action Alternative would result in no net loss of wetlands through the implementation of on-site and/or off-site mitigation.

3.13.4 Avoidance, Minimization, and/or Mitigation Measures

Numerous wetlands and other waters of the U.S. are located directly adjacent to SFDB. There is no practicable alternative to avoid impacting all wetlands and other waters of the U.S. while meeting the purpose and need of the project. The following measures were incorporated into project design in order to avoid or minimize impacts:

- Maintain the existing roadway alignment to the greatest extent possible to minimize impacts to adjacent wetlands.
- A 24-foot wide paved width, which is 4 to 8 feet less than published guidelines, is proposed (AASHTO 2011, NPS 1984).
- 1-foot-wide shoulders, which are below the minimum 3-foot (NPS 1984) and 5-foot (AASHTO 2011) design standards, are proposed.
- A clear zone width between 3 feet and 12 feet is proposed, which would be at or below minimum design standards.
- Rockery walls and paved ditch sections were incorporated into project design to minimize the width of roadway slopes and ground disturbance adjacent to the road.
- A total of 32 curves provide less than minimum length of stopping sight distance. All of these curves will have design exceptions in order to minimize ground disturbance. Of the 32 curves, design exceptions at 15 curves would reduce impacts to adjacent wetlands and/or other waters of the U.S.
- A total of 44 curves have curve radii below the minimum values for a 40 mph design speed. In many of these areas, wetlands and other waters of the U.S. are located adjacent to the roadway. Design exceptions are proposed for these curves to minimize potential impacts.

- Near PM 1, a design exception for the steep grade is proposed. Wetlands are located adjacent to the roadway in this location, and the proposed design would match the existing terrain in order to minimize impacts.

The following measures will be implemented to further avoid and minimize potential impacts:

- Work in Schooner Creek, East Schooner Creek, and unnamed drainages between PM 9 and PM 12 shall be conducted during no- to low-flow periods of the year (June 15 to October 15 or the first significant fall rainfall; i.e., 0.2 inches over a 24-hour period). For the remainder of the project corridor, culvert repair or replacement and associated work shall be completed during the dry season—typically between April 15 and October 15 or the first significant fall rainfall. All construction-related work within waterways that cross the project area shall be done in accordance with permit conditions.
- Concrete and asphalt piles shall be stockpiled outside and away from wetland resource areas, surrounded with fiber rolls, and covered with plastic.
- Temporarily impacted wetlands shall be restored on-site to pre-construction conditions through planting vegetation and hydroseeding with a local, native seed mix.
- The construction contractor shall use best management practices to prevent the discharge of equipment fluids. All equipment shall be stored, repaired, maintained, and fueled at least 65 feet away from waterways, wetlands, and riparian habitat. A plan to allow a prompt and effective response to any accidental spills shall be developed prior to construction.
- The area beyond the construction limits shall not be disturbed. Abandoned segments of roadway and temporary impact areas along SFDB within the project limits that would no longer be in use shall be reclaimed and revegetated. Degraded areas impacted from construction-related activity shall be replanted or reseeded with native plants from the watershed or nearby watershed under guidance from PRNS biologists. Shrubs, trees, and herbaceous perennials and annuals will be seeded and planted along riparian corridors where impacts and vegetation removal occur. CFLHD shall prepare a restoration plan for the project in consultation with PRNS for appropriate seed mixes and plants. Revegetated areas shall be protected and cared for, including watering when needed, until restoration criteria have been met under USACE permits, the USFWS Biological Opinion, and/or NPDES standards. Revegetated areas shall be monitored in accordance with an approved restoration plan to ensure success criteria are met.

CFLHD shall compensate for the permanent loss of jurisdictional features through purchase of mitigation credits at an approved wetland mitigation bank and/or creation of wetland and riparian compensatory mitigation. The replacement ratio will be 1.5:1 (acres replaced to acres impacted) or higher, in accordance with permit terms and conditions. A mitigation and monitoring plan shall be developed for on-site restoration of temporarily impacted wetlands, on-site restoration of permanently and temporarily impacted riparian habitat, and mitigation of permanently impacted wetlands. Mitigation for impacts to wetlands and other waters of the U.S. is subject to the approval of the USACE. Consultation with the USACE is underway. If mitigation commitments required in the permit terms and conditions from the agency would result in environmental impacts that were not considered in this EA/IS, CFLHD will ensure that those impacts are also assessed and reviewed.

3.14 Water Quality

This section discusses the existing hydrology of PRNS, existing water quality conditions and standards, and the potential to impact the PRNS watershed (the boundaries of the watershed are synonymous with the PRNS boundaries). The study area used for this assessment encompasses the existing 60-foot-wide Marin County easement and select areas beyond the easement that

encompass areas of localized improvements. In addition, the study area includes 300 feet downstream of delineated perennial, ephemeral, and intermittent streams and drainages to account for any indirect impacts to water quality during construction.

3.14.1 Regulatory Setting

The Federal Water Pollution Control Act of 1972, as amended by the Clean Water Act of 1977, dictates water quality standards and regulates the discharge of pollutants from point sources into waters of the U.S. The overall goal of the CWA is “to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.” Section 303 of the act requires states to develop or adopt and implement water quality standards. This consists of designating the use of waters and setting water quality criteria. In addition, each state identifies impaired waters (also known as the 303(d) list) that require additional measures and a long-term plan to bring such waters up to water quality standards. Under Section 304(a), the EPA also issues recommended water quality criteria that aid states in developing these standards.

Section 402 and Section 404 of the CWA set forth the permitting programs to regulate discharges into waters of the U.S. Section 402 establishes the NPDES permitting program, which requires a permit for any point source discharge (excluding dredged and fill material) into a water of the U.S. As previously discussed in the Wetlands and Other Waters of the U.S. section, Section 404 regulates the discharge of dredged and fill materials into waters of the U.S. As part of the goal of maintaining water quality standards, any entity requiring a permit, commonly a Section 404 permit, needs to obtain water quality certification from the state.

In an effort to maintain water quality within the national park system, NPS Management Policy 4.6.3 directs the NPS to determine the quality of surface and groundwater resources within the park, cooperate with other government entities to obtain high water quality standards under the CWA for park water resources, and maintain or restore the quality of these water resources in accordance with the CWA and other applicable regulations (NPS 2006a).

The Porter-Cologne Act, enacted by the State of California in 1969, provides the State Water Resources Control Board authority over state water rights and implementation of water quality policy. This act also establishes Regional Water Quality Control Boards; the SFDB project is located within the jurisdiction of the San Francisco Regional Water Quality Control Board. Regional Water Quality Control Boards are responsible for issuance of 401 Water Quality Certifications and NPDES permits. The San Francisco Bay Regional Water Quality Control Board developed a water quality control plan for the San Francisco Bay Basin (2013), which encompasses the project. The plan identifies existing and potential beneficial uses for waterbodies within the basin, water quality objectives, and water quality standards.

In addition, the California Coastal Act, Article 4, Section 30231 requires maintenance, as feasible, of “the biological productivity and quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organism and for the protection of human health[.]”

3.14.2 Affected Environment

PRNS contains watersheds that drain into Drakes Estero, Abbott’s Lagoon, Estero de Limantour, the Pacific Ocean, and parts of Bolinas Lagoon and Tomales Bay (MCDPW 2014). Surface hydrology within the study area is influenced by direct precipitation, headwater flows, backwater flooding, sheet flow, surface seepage due to a high water table, the presence of poorly drained soils, tidal fluctuation, and surface runoff from surrounding areas. Runoff from adjacent roadways also contributes to on-site hydrology. The northern third of the project area travels through a valley in which slopes on the western edge discharge seep water downslope to East Schooner Creek, a perennial stream, on the valley floor. East Schooner Creek itself hydrologically influences riparian and riverine wetlands occurring in the valley’s floodplain bottomlands. The

elevated roadbank and pavement of SFDB act as a barrier between these two hydrologic sources. Numerous unnamed intermittent tributaries flowing mostly eastward from their origins on Inverness Ridge are also present within much of the study area.

SFDB traverses salt marsh flats at the northern edge of Drakes Estero via two existing CMP culverts. Schooner Creek and its tributary, East Schooner Creek, converge in this area, providing a freshwater influence to the estuarine fringe (MCDPW 2014). South of Drakes Estero, SFDB travels through vegetated sand dunes. The SFDB road cut appears to disrupt sheetflow through these dunes, creating seeps on the upslope side of the road. This water is captured or channelized by artificial topographical depressions, which has resulted in the formation of wetlands and channels along the road.

The study area is located within the Marin Coastal Hydrologic Planning Area (SFBRWQCB 2013), which contains numerous waterbodies located within PRNS. The only waterbody within the study area that is identified in the planning area is Schooner Creek, which is referred to as East Schooner Creek in the plan. Existing beneficial uses of Schooner Creek are identified as follows:

- Shellfish harvesting
- Cold freshwater habitat
- Fish migration
- Preservation of rare and endangered species
- Fish spawning
- Warm freshwater habitat
- Wildlife habitat
- Water contact recreation
- Non-contact water recreation

The *San Francisco Bay Basin Water Quality Control plan* provides water quality objectives to maintain and protect waters with beneficial uses, and would be applicable to Schooner Creek. The plan does not identify the study area as being located within a groundwater basin and groundwater conditions in PRNS are not well documented. However, based on the wetland delineation conducted for the proposed project, groundwater seeps are evident in the East Schooner Creek area and this area is presumed to be highly influenced by groundwater.

Recent water quality data within the study area is not readily available. Limited water quality monitoring was completed in 2005 and earlier, but only one monitoring site is located within the study area. This monitoring site was located on East Schooner Creek near PM 10. However, the *San Francisco Bay Basin Water Quality Control Plan* (SFBRWQCB 2013) does not identify the creek for existing or proposed beneficial uses. The coastal watershed assessment for PRNS identifies dairies, ranches, and pasture lands as contributing to “water quality degradation, due to excessive nutrient enrichment from feces and runoff” (Pawley and Lay 2013). Balancing the historical ranching and dairy operations within PRNS with the need for high water quality for special status species has been a primary management concern (Pawley and Lay 2013). During storm events, water quality is likely degraded in close proximity to ranches and dairy complexes, which can provide an influx of fecal matter from cattle. Grazing within PRNS has also likely increased erosion and sedimentation as a result of decreased vegetation and increased soil compaction, which can reduce water infiltration. Stormwater runoff from SFDB also likely degrades water quality where the road is directly adjacent to wetlands and drainageways.

None of the waterbodies within the study area (e.g., Schooner Creek and East Schooner Creek) are identified as impaired on California's 303(d) list, and therefore have no set water quality standards.

3.14.3 Environmental Consequences

3.14.3.1 No Action Alternative

Under the No Action Alternative, none of the proposed improvements would occur. Existing maintenance activities would continue, and may include asphalt patching, ditch clearing, and repairing or cleaning culverts, as needed. Generally, maintenance activities are anticipated to stay within the existing pavement surface. However, ditch clearing and culvert maintenance could result in increased sedimentation and turbidity in waterways within the project area. Because standard BMPs are expected to be implemented during maintenance activities, such as conducting work during the dry season, the No Action Alternative is anticipated to have minimal adverse impacts to water quality.

3.14.3.2 Action Alternative

The Action Alternative would require excavating and filling to widen the roadway, enlarging and/or replacing culverts, and replacing two cattle under-crossings. Based on conceptual design, a total of 4.3 acres of impervious surface would be added as a result of increased road surface and paved ditches adjacent to the road. In an effort to minimize the overall construction limits, additional paved ditch sections may be included as design progresses, which could increase the amount of impervious surface to a total of 6.0 acres. The increase in impervious surface could permanently affect water quality within the study area by increasing the velocity and amount of stormwater runoff into the study area watershed. The additional impervious surface could also interfere with the rate of groundwater recharge; however, the study area is not within an identified groundwater basin. Park legislation has curtailed development within PRNS, and the watershed contains ample pervious surface given the limited development. In addition, the coastal watershed assessment indicated impervious surface was a low stressor to subwatersheds that make up the PRNS watershed (Pawley and Lay 2013). For these reasons, the increase in impervious surface is expected to have minimal impacts to water quality and groundwater within the study area watershed.

The Action Alternative would maintain or restore drainage patterns by upsizing culverts and, in one instance, moving a culvert to fit the natural drainage pattern. Removing excess sediment at the existing East Schooner Creek culvert and replacing it with an adequately sized box culvert is expected to restore stream flows in this area. Replacement of the two existing culverts at Schooner Creek with a 32-foot-wide open bottom arch structure and increasing the channel width by 14 feet would also improve drainage and tidal dynamics.

Construction activities, particularly work within Schooner Creek and East Schooner Creek, would temporarily increase stormwater runoff and sedimentation into surface waters. However, in Schooner Creek, sheet piles would be used as coffer dams to create dry work areas that would minimize potential sedimentation. Short-term increases in turbidity would likely occur during proposed dewatering activities, construction and removal of cofferdams (sheet piles) at Schooner Creek, in-stream construction activities, and soil disturbance adjacent to SFDB and waterways.

Prior to construction, a 401 Water Quality Certification and a NPDES permit would be obtained. As part of the NPDES permit, a SWPPP would be developed, which would reduce potential water quality impacts during construction. Implementation of measures in the SWPPP, including those described under avoidance, minimization, and mitigation measures, below, would ensure that biological productivity and quality of coastal waters would be maintained for wildlife, aquatic species, and the protection of human health to be consistent, to the maximum extent practicable, with Article 4, Section 30231 of the California Coastal Act. In accordance with the

California Coastal Act, Article 4, Section 30232, BMPs would be implemented to protect against the spillage of crude oil, gas, petroleum products, or hazardous substances, and are described further below.

Conclusion

With implementation of avoidance and minimization measures as outlined below, permanent and temporary adverse impacts to water quality, groundwater, and drainage patterns within the study area are expected to be less than significant. As there are no water quality standards applicable to the waterbodies within the study area, no water quality standards would be violated. Implementation of the Action Alternative would be consistent with the applicable basin water quality control plan. Existing beneficial uses of Schooner Creek would generally be improved or maintained, and permanent and temporary impacts would be mitigated as described in the Wetlands and Other Waters of the U.S. and Special Status Species and Sensitive Natural Communities sections.

3.14.4 Avoidance, Minimization, and/or Mitigation Measures

The following measures would be implemented to reduce impacts on water quality:

- The area beyond the construction limits shall not be disturbed. Abandoned segments of roadway and temporary impact areas along SFDB within the project limits that would no longer be in use will be reclaimed and revegetated. Degraded areas impacted from construction-related activity shall be replanted or reseeded with native plants from the watershed or nearby watershed under guidance from PRNS biologists. Shrubs, trees, and herbaceous perennials and annuals will be seeded and planted along riparian corridors where impacts and vegetation removal occur. CFLHD shall prepare a restoration plan for the project in consultation with PRNS for appropriate seed mixes and plants. Revegetated areas will be protected and cared for, including watering when needed, until restoration criteria have been met under USACE permits, USFWS biological opinion, and/or NPDES standards. Revegetated areas shall be monitored in accordance with the restoration plan to ensure success criteria are met.
- CFLHD shall comply with the *California Stormwater BMP Handbook* (2009), specifically addressing procedures for the proper use, storage, and disposal of materials and equipment on temporary construction pads to minimize or eliminate the discharge of potential pollutants to a watercourse (NS-14 in handbook). CFLHD shall also comply with procedures to protect waterbodies from debris and wastes associated with structure demolition or removal over or adjacent to watercourses (NS-15 in handbook).
- Certified weed-free permanent and temporary erosion control measures shall be used to minimize erosion and sedimentation during and after construction according to the contract erosion control plan, contract permits, FP-3 Section 107 and FP-3 Section 157.
- All materials placed in watercourses shall be non-toxic. Any combination of wood, plastic, cured concrete, steel pilings, or other materials used for in-channel structures shall not contain coatings or treatments, or consist of substances deleterious to aquatic organism that may leach into the surrounding environment in amounts harmful to aquatic organisms.
- Any spill of petroleum products, hazardous materials, or other chemical or biological products released from stationary sources or construction, fleet, or other support vehicles shall be properly cleaned, mitigated, and remedied, if necessary. Any spill of petroleum products or a hazardous material shall be reported to the appropriate federal, state, and local authorities, if the spill is a reportable quantity. Response shall occur in accordance with federal, state, and local regulations.

- The contractor shall repair leaks immediately on discovery. Equipment that leaks shall not be used. Oil pans and absorbent material shall be in place prior to beginning work. The contractor shall be required to provide the “on-scene” capability of catching and absorbing leaks or petroleum product spills, including antifreeze from breakdowns or repair actions, with approved absorbent materials. A supply of acceptable absorbent materials at the job site in the event of spills, as defined in the SWPPP, shall be available. Sand and soil are not approved absorbent materials. Soils contaminated with fluids shall be removed, placed in appropriate safety containers, and disposed of according to state and/or federal regulations.
- The construction contractor shall use best management practices to prevent the discharge of equipment fluids. All equipment shall be stored, repaired, maintained, and fueled at least 65 feet away from waterways, wetlands, and riparian habitat. A plan for prompt and effective response to any accidental spills shall be developed prior to construction.
- Before clearing, grubbing, and grading, the contractor shall construct all erosion controls around the perimeter of the project area under construction, including filter barriers, diversion, and settling structures. The combined grubbing and grading operations shall be limited to 350,000 square feet of exposed soil at one time.
- Temporary erosion control measures shall be maintained in working condition until the project is complete or the measures are no longer needed.
- Herbicides and pesticides shall not be used within the project construction limits.

3.15 Special Status Species and Sensitive Natural Communities

PRNS contains many special status species, as well as sensitive natural communities and federally designated critical habitat, all of which are discussed in this section. For purposes of this EA/IS, special status species are considered the following:

- State species of special concern
- State rare, endangered, or watch list species
- State native plants, as designated and ranked by the California Native Plant Society
- State Fully Protected species
- Migratory birds
- Bald and golden eagles
- Marine mammals
- Species listed, proposed for listing, or candidates for listing under the state or federal Endangered Species Acts

The study area used for this assessment encompasses the existing 60-foot-wide Marin County roadway easement and select areas beyond the county right-of-way that encompass areas of localized improvements. In addition, the study area includes 300 feet downstream of delineated perennial, ephemeral, and intermittent streams and drainages to account for any indirect impacts to water quality during construction.

3.15.1 Regulatory Setting

3.15.1.1 Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act (16 U.S.C. 668–668c) prohibits the take of bald or golden eagles, including their parts, nests, or eggs. In terms of the act, “take” is defined as “pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb.”

3.15.1.2 Federal Endangered Species Act

In 1973, the federal Endangered Species Act (FESA) was established for the protection of threatened and endangered species and their habitats. Under Section 7 of this act, federal agencies are required to consult with the USFWS and NMFS to ensure that they are not undertaking, funding, permitting, or authorizing actions likely to jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat. Critical habitat is defined as geographic locations critical to the existence of a threatened or endangered species. Section 9 of the FESA prohibits the take of threatened or endangered species, which is defined as “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect or any attempt at such conduct.”

3.15.1.3 Magnuson-Stevens Fisheries Conservation and Management Act

The Magnuson-Stevens Fisheries Conservation Management Act requires the identification and conservation of Essential Fish Habitat. The Essential Fish Habitat provisions of the act require heightened consideration of habitat for commercial fish species in resource management decisions. Essential Fish Habitat is defined as “those waters and substrates necessary to fish for spawning, breeding, feeding, or growth to maturity” (16 U.S.C. 1802(10)). Federal and state agencies, NMFS, and regional Fishery Management Councils work together to identify Essential Fish Habitat for each federally managed fish species and develop conservation measures to protect and enhance these habitats.

Under the act, fisheries management plans are also developed which can include identification of Habitat Areas of Particular Concern (HAPC). HAPCs are subsets of Essential Fish Habitat that are rare, particularly susceptible to human-induced degradation, especially ecologically important, or located in an environmentally stressed area. However, designated HAPC are not afforded additional regulatory protection under the act.

3.15.1.4 Marine Mammal Protection Act

Enacted in 1972, the Marine Mammal Protection Act (16 U.S.C. 1361) prohibits the take of marine mammals in U.S. waters and by U.S. citizens on the high seas, and importing marine mammals and marine mammal products into the U.S. Marine mammals consist of two major groups – cetaceans and pinnipeds – which includes, but is not limited to, whales, dolphins, porpoises, seals, sea lions, and walruses.

3.15.1.5 Migratory Bird Treaty Act

Pursuant to the Migratory Bird Treaty Act (MBTA) of 1918, federal law prohibits the taking of migratory birds, their nests, or their eggs (16 U.S.C., Section 703). In 1972, the MBTA was amended to include protection for migratory birds of prey (e.g., raptors). The USFWS enforces the MBTA (16 U.S.C. 703-711).

3.15.1.6 National Park Service Management Policy 4.4.2

NPS Management Policy 4.4.2 outlines management methods for native plant and wildlife species within the national park system. This policy calls for native species to be left to natural processes. However, intervention to manage native species may occur only when it will not cause unacceptable impacts to the species or is required because human influence has adversely affected the population, or is needed to protect cultural resources and human health and safety, or to accommodate development or research, among others. Under Section 4.4.2.3, threatened and endangered species will be managed in compliance with the FESA and with the goal of recovery of the species and protection and enhancement of critical habitat, essential habitat, and recovery areas (NPS 2006a).

3.15.1.7 California Coastal Act

Article 5, Section 30240, of the California Coastal Act sets forth requirements for protection of environmentally sensitive habitats. Such habitats are to “be protected against any significant

disruption of habitat values,” and the use of such areas is limited to only those dependent on the resources. Any development in areas adjacent to environmentally sensitive habitat areas must be designed to avoid substantial degradation and be compatible with continuance of the habitat. For purposes of this section of the EA/IS, environmentally sensitive habitats include those federally designated as critical habitat under the FESA, Essential Fish Habitat as defined by NMFS, and sensitive natural communities as defined by the California Department of Fish and Wildlife (CDFW).

3.15.1.8 California Endangered Species Act

The California Endangered Species Act (CESA) states that “all native species of fishes, amphibians, reptiles, birds, mammals, invertebrates, and plants, and their habitats, threatened with extinction and those experiencing a significant decline which, if not halted, would lead to a threatened or endangered designation, will be protected or preserved” (CDFW 2014a). Section 2081 of the CESA addresses the issuance of Incidental Take Permits from CDFW, which is required for projects that could result in the “take” of a state-listed threatened or endangered species. Under the CESA, “take” is defined as an activity that would directly or indirectly kill an individual of a species. A Section 2081 permit is issued when a project determination is consistent with the issued Biological Opinion—an opinion issued by the USFWS or NMFS during formal Section 7 consultation under the FESA. The CDFW is responsible for all state-listed plant and animal species under the CESA (Fish and Game Code Sections 2050–2116).

3.15.1.9 California Environmental Quality Act

CEQA Section 15380 independently defines “endangered” species as those whose survival and reproduction in the wild are in immediate jeopardy, and “rare” as species that could become endangered in the future if their habitat is degraded. A project that would substantially impact rare or endangered species, or their habitat, would be considered a significant effect on the environment under CEQA.

3.15.1.10 California Fish and Game Code 3511, 4700, 5050, and 5515

The State of California attempted to protect species considered rare or facing possible extinction by enacting California Fish and Game Code Sections 3511, 4700, 5050, and 5515 in the 1960s. This legislation designated fish, mammal, amphibian, and reptile species as “Fully Protected” by the state. The taking or possessing of fully protected species is prohibited under the regulations unless a license or permit is obtained for research or relocation.

3.15.1.11 Native Plant Protection Act

The Native Plant Protection Act (CFGF Section 1900–1913) was enacted by the State of California in 1977. The act defines native plants and ranks species based on each species vulnerability, assigning a California Native Plant Society (CNPS) rank as follows:

- 1A—Presumed extirpated in California and either rare or extinct elsewhere
- 1b—Rare, threatened, or endangered in California or elsewhere
- 2a—Presumed extirpated in California, but common elsewhere
- 2b—Rare, threatened, or endangered in California, but common elsewhere
- 3—Plants where more information is required (Review List)
- 4—Limited distribution (Watch List)

3.15.1.12 Unlawful Take or Destruction of Nest or Eggs

Sections 3503, 3503.5, and 3800 of the California Fish and Game Code specifically protect nests and eggs of birds of prey. The code prohibits the “take, possession, or destruction of birds, their nests, or eggs.” Any disturbance that provokes birds to abandon their nests or interferes with reproductive behavior is considered a “take.” Birds protected include all migratory, non-game

birds except for English sparrows or starlings. Section 3513 of the California Fish and Game Code duplicates the federal protection of migratory birds and prohibits taking and possession of any migratory nongame bird as designated in the Migratory Bird Treaty Act.

3.15.2 Affected Environment

The diversity of ecosystems within PRNS supports a wide variety of wildlife and plant species, including special status species. Information on special status species within the study area was obtained through literature review, GIS data review, and coordination with the USFWS, NMFS, NPS, CDFW, and Marin County. The results of this initial data collection was the identification of 37 special status wildlife species, 84 special status plant species, and six sensitive natural communities that could potentially occur within the study area. Further review of habitat requirements and occurrence data determined that four sensitive natural communities and 35 special status species, consisting of 13 birds, two fish, one amphibian, one reptile, one invertebrate, six mammals, and 11 plant species, occur or have the potential to occur within the study area (see Table 10). For a full list of species initially identified, and justification for eliminating species from further consideration, refer to the wildlife biological assessment (Jacobs 2014c), marine and anadromous species biological assessment (Jacobs 2015a), and the biological evaluation (Jacobs 2015b) prepared for this project.

On March 10 to 11, May 21 to 22, and July 22, 2014, biologists completed field surveys to assess habitat conditions and identify plant species within the study area. Special status plant and habitat observations were also made in April 2014 during the wetland delineation survey. Table 10 summarizes each species with potential to occur within the study area and their habitat requirements. The study area contains suitable habitat for all species listed in the table. Many species have multiple special status designations under state and/or federal law. All of the bird species listed are protected under the Migratory Bird Treaty Act, and bald and golden eagles are also protected under the Bald and Golden Eagle Protection Act.

Table 10: Special Status Species Summary

Species Name	Status ¹	Habitat/Range
Birds		
Bald Eagle (<i>Haliaeetus leucocephalus</i>)	SFP	Large bodies of water or free-flowing rivers with abundant fish and adjacent snags or other perches (CDFW 1990a).
Burrowing Owl (<i>Athene cunicularia</i>)	SSC	Flat, open areas characterized by dry vegetation typical of heavily grazed grasslands, low stature grasslands, or desert vegetation that includes available burrows (Johnsgard 1988).
Cooper's Hawk (<i>Accipiter cooperii</i>)	WL	Dense forests or patchy woodlands, such as live oak, deciduous riparian forests, or other forest habitats near water. Nests are located in second-growth coniferous stands or in deciduous riparian areas near streams (CDFW 2014b).
Golden Eagle (<i>Aquila chrysaetos</i>)	SFP	Rolling foothills, mountain areas, sage-juniper flats, and desert. Cliff-walled canyons and large trees in open areas provide nesting habitat in most parts of range (CDFW 2014c).
Northern Harrier (<i>Circus cyaneus</i>)	SSC	Meadows, grasslands, open rangelands, desert sinks, and freshwater and saltwater emergent wetlands. Nests are typically located on the ground in scrub-shrub habitat bordering marshes, emergent wetlands, rivers, lakes or in open grasslands, fields or sagebrush flats at up to 5,700 feet in elevation in the Central Valley of California (CDFW 2014b).
Northern Spotted Owl (<i>Strix occidentalis caurina</i>)	SC, FT	Multi-layered, multi-species canopy with moderate to high canopy closure. Stands typically contain a high incidence of trees with large cavities and other types of deformities; large snags (standing dead trees); an abundance of large, dead wood on the ground; and open space within and below the upper canopy (USFWS 2011).
Osprey (<i>Pandion haliaetus</i>)	WL	Large, fish-bearing waters and rivers, lakes, bays, estuaries, and reservoirs. Nests are on man-made structures, cliffs, or dead-top trees (CDFW 2014b).

Species Name	Status ¹	Habitat/Range
Saltmarsh Common Yellowthroat (<i>Geothlypis trichas sinuosa</i>)	SSC	Coastal riparian and wetlands areas and tidal marsh systems. Nests are within well-concealed areas, typically near the ground in grasses, herbaceous vegetation, cattails, tules, and some shrubs (Shuford and Gardali 2008).
Sharp-shinned Hawk (<i>Accipiter striatus</i>)	WL	Ponderosa pine, black oak, deciduous riparian forests, mixed conifer, or Jeffrey pine. Nests are located in dense, pole and small tree stands of conifers (CDFW 2014b).
Swainson's Hawk (<i>Buteo swainsoni</i>)	ST	Stands with few trees in juniper-sage flats, riparian areas, and in oak savannah in the Central Valley of California for breeding. Grasslands, agricultural fields, or livestock pastures for foraging (CDFW 1990b).
Tricolored Blackbird (<i>Agelaius tricolor</i>)	SSC	Freshwater, emergent wetlands and thickets of willow, blackberry, wild rose, and tall herbs (CDFW 2014b).
White-tailed Kite (<i>Elanus leucurus</i>)	SFP	Coastal valleys and valley lowlands. Rarely found away from agricultural lands. Forages in open grasslands, meadows, farmlands, and emergent wetlands (CDFW 2014b).
Yellow Warbler (<i>Dendroica petechial brewsteri</i>)	SSC	Riparian woodlands, montane chaparral, open ponderosa pine, and mixed conifer habitats with substantial brush (CDFW 2014b).
Fish		
Central California Coast Coho Salmon, ESU ² (<i>Oncorhynchus kisutch</i>)	SE, FE, FCH	Streams and small freshwater tributaries for first half of life cycle. Small streams with stable gravel substrates for spawning habitat. Estuarine and marine waters of the Pacific Ocean for remainder of its life cycle (NOAA 2014a).
Central California Coastal Steelhead, DPS ³ (<i>Oncorhynchus mykiss</i>)	FT, FCH	The entire Pacific Coast. In streams, deep low-velocity pools are important wintering habitats. Spawning habitat consists of gravel substrates free of excessive silt (NOAA 2014b).
Amphibians		
California Red-legged Frog (<i>Rana draytonii</i>)	FT, FCH	Elevations up to 1,500 feet in Mediterranean climatic zones. Requires aquatic, riparian, and upland habitat areas for different life events. Breeds primarily in aquatic habitat deeper than 2 feet with shrubby riparian or emergent vegetation; specifically found in deep pools, backwaters in streams and creeks, ponds, marshes, sag ponds, dune ponds, and lagoons (USFWS 2002, USFWS 2010). Species has been documented adjacent to the study area.
Reptiles		
Western Pond Turtle (<i>Emys marmorata</i>)	SSC	Ponds, marshes, rivers, streams and irrigation ditches, usually with aquatic vegetation. Needs basking sites such as sandy banks or grassy open fields (CDFW 2014b).
Invertebrates		
Myrtle's Silverspot Butterfly (<i>Speyeria zerene myrtleae</i>)	FE	Elevations from sea level to 1,000 feet, and up to 3 miles inland in coastal dunes, prairies, and scrub habitats. Range and occurrence records overlap with the study area. Populations within Marin County are associated with non-native grasslands (USFWS 2009, USFWS 1998, USFWS 2007).
Mammals		
American Badger (<i>Taxidea taxus</i>)	SSC	Drier open stages of shrub, forest, and herbaceous habitats with friable (crumbly textured) soils (CDFW 2014b).
Pallid Bat (<i>Antrozous pallidus</i>)	SSC	Low desert, oak woodland and coastal redwood, coniferous forest, deciduous woodlands, brushy terrain, rocky canyons, and open farmland (CDFW 2014b, Bolster 1998).
Point Reyes Jumping Mouse (<i>Zapus trinotatus</i>)	SSC	Wet coastal meadows, scrub-shrub habitat along streams and seepages, and areas with dark-humic soils often associated with coastal redwood forests (Collins 1998).
Point Reyes Mountain Beaver (<i>Aplodontia rufa phaea</i>)	SSC	Cool, moist, northern facing slopes in moderately dense coastal scrub-shrub commonly containing coyote brush, sword fern, bracken fern, poison oak, California nettle, and cow parsnip (NPS 2014h).
Townsend's Big-eared Bat (<i>Corynorhinus townsendii</i>)	SC	Throughout California in all habitats but alpine and subalpine. Abundant in mesic habitats; may be found throughout the year (CDFW 2014b).

Species Name	Status ¹	Habitat/Range
Western Red Bat (<i>Lasiurus blossevillii</i>)	SSC	Forests and woodlands from sea level to elevations containing mixed conifer forests on edge habitat adjacent to streams, fields, or urban areas (CDFW 2014b).
Plants		
Beach Starwort (<i>Stellaria littoralis</i>)	CNPS 4.2	Bogs and fens, coastal bluff scrub, coastal dunes, coastal scrub, marshes and swamps (CNPS 2014). Elevations ranging from approximately 16–131 feet.
California Bottle-brush Grass (<i>Elymus californicus</i>)	CNPS 4.3	North coast coniferous forest, cismontane woodland, and riparian woodland (CNPS 2014). Elevations ranging from approximately 49–1,542 feet.
Marin Checker Lily (<i>Fritillaria lanceolata</i> var. <i>tristulis</i>)	CNPS 1B.1	Coastal bluff scrub, coastal scrub, and coastal prairie. Occurrences reported from canyons and riparian areas, as well as rock outcrops; often on serpentine (CNPS 2014). Elevations ranging from 98–984 feet.
Mt. Vision Ceanothus (<i>Ceanothus gloriosus</i> var. <i>porrectus</i>)	CNPS 1B.3	Closed-cone coniferous forest, coastal prairie, coastal scrub, valley and foothill grassland (CNPS 2014). Sandy soils. Elevations ranging from 82–1,000 feet.
Point Reyes Bird's-beak (<i>Chloropyron maritimum</i> ssp. <i>palustre</i>)	CNPS 1B.2	Coastal salt marsh (CNPS 2014). Elevations ranging from approximately 0–49 feet.
Point Reyes Ceanothus (<i>Ceanothus gloriosus</i> var. <i>gloriosus</i>)	CNPS 4.3	Closed-cone coniferous forest, coastal dunes, coastal scrub, coastal bluff scrub (CNPS 2014). Elevations ranging from approximately 15–1,706 feet.
Point Reyes Checkerbloom (<i>Sidalcea calycosa</i> ssp. <i>rhizomata</i>)	CNPS 1B.2	Freshwater marshes and swamps near the coast (CNPS 2014). Elevations ranging from approximately 15–246 feet.
Point Reyes Horkelia (<i>Horkelia marinensis</i>)	CNPS 1B.2	Coastal dunes, coastal prairie, coastal scrub. Sandy flats and dunes near coast; in grassland or scrub plant communities (CNPS 2014). Elevations ranging from 16–98 feet.
Point Reyes Meadowfoam (<i>Limnathes douglasii</i> ssp. <i>sulphurea</i>)	CNPS 1B.2, SE	Freshwater marshes and swamps, vernal pools, coastal prairie, meadows and seeps, cismontane woodland. Vernal wet depressions in open rolling, coastal prairies and meadows (CNPS 2014). Elevations ranging from 33–394 feet.
Purple-stemmed Checkerbloom (<i>Sidalcea malviflora</i> ssp. <i>purpurea</i>)	CNPS 1B.2	Broadleafed upland forest, coastal prairie (CNPS 2014). Elevations ranging from 49–213 feet.
Woolly-headed Spineflower (<i>Chorizanthe cuspidate</i> var. <i>villosa</i>)	CNPS 1B.2	Coastal scrub, coastal dunes, coastal prairie (CNPS 2014). Sandy places near the beach. Elevations ranging from 10–197 feet.

¹ **FE**=Federally Endangered; **FT**=Federally Threatened; **FCH**=Federally Designated Critical Habitat; **SE**=State Endangered; **ST**=State Threatened; **SC**=State Candidate; **SFP**=State Fully Protected; **SSC**=State Species of Special Concern; **WL**=State Watch List; **CNPS**=California Native Plant Society Rank

² An evolutionary significant unit (ESU) reflects the best and most current understanding of the likely geographic boundaries of reproductively isolated salmon populations.

³ A distinct population segment (DPS) is a vertebrate population or group of populations that is discrete from other populations of the species and significant in relation to the entire species.

There is a remote possibility that marine mammals, which are protected by the Marine Mammal Protection Act, could occur within the study area. Specifically, harbor seals or California sea lions may occur near the Schooner Creek crossing during high tide, but this occurrence is unlikely and uncommon (Press 2015). Sea lions could haul out within the study area, while seals would stay in the water. Because these species are not likely to occur in the study area, they are not addressed in the impact analysis below. However, they are addressed under the avoidance measures section to ensure avoidance of the species.

Critical Habitat, Essential Fish Habitat, and Sensitive Natural Communities

As shown on Figure 14, federally designated critical habitat is located within the study area for California red-legged frog, central California coast (CCC) coho salmon, and central California coast steelhead. Coho salmon critical habitat is located in all accessible reaches of streams and rivers within PRNS, which includes Schooner Creek and East Schooner Creek within the study area. Designated critical habitat for steelhead is located within approximately 1.0 mile of East Schooner Creek within the study area. The study area also contains Essential Fish Habitat for Pacific coast salmon, Pacific groundfish, and Pacific pelagic fish species, as defined by NMFS. Components of this habitat are largely located within Drakes Estero and Schooner Bay. However, freshwater components of the Pacific coast salmon Essential Fish Habitat may be available in East Schooner Creek, although likely of low quality or availability. Drakes Estero and Schooner Bay are also considered estuary HAPC for various federally-managed fish species within the *Pacific Groundfish Fishery Management Plan* (NOAA 2014c).

Sensitive natural communities, as designated by the CDFW, located within the study area include the following:

- Central dune scrub—Located between PM 3 and PM 4, this community consists of scattered shrubs, subshrubs, and herbs, and is restricted to the coast on stabilized backdune slopes, ridges, and flats.
- Coastal terrace prairie—Located at approximately PM 1, this community is characterized by the dominant perennial bunchgrasses and influenced by fog moisture; within the study area, it is dominated by tufted hairgrass.
- Coastal and valley freshwater marsh—Located near PM 4 (at Drakes Beach Road intersection), between PM 9 and PM 10 (east of Schooner Bay inlet), and near PM 12 (Ledum Swamp), these communities are flooded by freshwater and are dominated by cattails or three-square bulrush in the study area.
- Northern coastal salt marsh—Located at approximately PM 9 at the Schooner Bay inlet, this is a highly productive community of salt-tolerant aquatic plants that is subject to regular tidal inundation by saltwater for at least part of each year.



Salt marsh at Schooner Creek

3.15.3 Environmental Consequences

This discussion is organized to first address general elements of the Action Alternative that could directly and indirectly affect all special status species permanently and/or during construction. Species-specific effects analyses are then addressed based on species categories. For example, all plant species would be affected by the project in a similar manner and therefore are discussed together.

The Action Alternative effects discussed below are a summary of the wildlife biological assessment (Jacobs 2014), marine and anadromous species biological assessment (Jacobs 2015a), and the biological evaluation (Jacobs 2015b) prepared for this project. For a more detailed analysis of impacts and effects, refer to these reports.

Figure 14: Critical Habitat, Central California Coast Steelhead and California Red-legged Frog



3.15.3.1 No Action Alternative

Under the No Action Alternative, none of the proposed improvements would occur. Existing maintenance activities would continue and may include asphalt patching, and ditch clearing. Generally, maintenance activities are anticipated to stay within the existing pavement surface. However, ditch clearing could impact vegetation, including wetlands and waterbodies, within the study area. These impacts could directly or indirectly affect special status species and the habitat on which they rely or sensitive natural communities. Implementation of standard BMPs, such as timing restrictions and construction during the dry season, would minimize any potential impacts. Therefore, the No Action Alternative is expected to have minimal adverse impacts to special status species or sensitive natural communities.

3.15.3.2 Action Alternative

The Action Alternative could directly affect special status species and sensitive natural communities through mortality, harm, harassment, failed breeding attempts, and displacement from project-related impacts, such as increased sediment and surface runoff, release of pollutants from construction equipment, and loss or degradation of habitat. Direct effects from the project include vegetation and tree removal, in-stream habitat disturbance due to culvert replacement, noise, and visual disturbance. Vegetation removal would both permanently and temporarily impact potential habitat along SFDB. The estimated total for permanent and temporary disturbances throughout the study area would be approximately 34 acres and 24 acres, respectively. Design is still in the preliminary stages and the impact estimates represent a worst-case scenario. Refinements through the final design process are anticipated to lessen the quantity of impacts for all habitat types present in the study area.

Approximately 4.4 acres of wetlands and 2.6 acres of riparian habitat would be permanently impacted, and 4.9 acres of wetlands and 1.9 acres of riparian habitat would be temporarily impacted from construction. Much of the impact to wetlands and riparian habitat would occur between PM 9 and PM 12. In this area, trees would be removed or trimmed, accounting for all of the riparian habitat impacts.

Between 4.3 acres and 6.0 acres of impervious surfaces would be added as a result of increased road surface and paved ditches adjacent to SFDB. This addition could indirectly affect plants and wildlife through degradation of water quality from increased stormwater runoff. The faster velocity of stormwater runoff could also affect vegetation along the roadway.

During construction, sediment and chemical releases from construction activities may directly affect aquatic species occupying East Schooner Creek, Schooner Creek, wetlands, and downstream waterways. Work within waterbodies, such as culvert replacements at East Schooner Creek and Schooner Creek, have the greatest potential to increase sedimentation. Direct release of sediment or chemical-laden runoff into areas that are occupied by aquatic species may create displacement or degrade available habitats. Noise and visual disturbance may temporarily affect wildlife during construction. With proposed mitigation, noise from construction equipment would likely be comparable to current noise levels within the study area, which experiences frequent vehicle use along SFDB. Visual disturbance from the presence of people and construction equipment may disrupt wildlife behaviors and species' tendency to reside near the study area.

Future noise levels along the improved alignment are anticipated to remain unchanged from current conditions because the Action Alternative would not increase the overall capacity of SFDB. Therefore, long-term effects resulting from traffic-related noise are anticipated to remain unchanged from current conditions.

The following discussions address specific effects to special status bird, amphibian, reptile, invertebrate, mammal, fish, and plant species.

Bird Species

All of the special status bird species have overlapping habitat within the study area, and the Action Alternative would have similar effects on the species. Permanent and temporary vegetation disturbance, noise and vibration from construction, as well as visual disturbances from increased project-related activity, could affect individual special status bird species if present. Vegetation removal throughout the project construction limits could degrade habitat for bird species and reduce cover, structure, and shading for them. Primary impacts to special status bird species habitat would include the permanent and temporary removal of wetlands, trees, and riparian habitat. However, existing habitat within the study area for these species is of low quality because of its proximity to the roadway, frequency of human disturbance, and the lack of adequate nesting habitat for raptors (e.g., trees, snags, etc.). Reseeding and revegetation is planned for the areas affected, although trees and shrubs would not likely return to the original condition for several years. To reduce the likelihood that breeding and nesting birds would be impacted during construction, vegetation removal would be conducted outside the nesting season (February 1–July 31). In addition, wetlands would be mitigated at a 1.5:1 (acres replaced to acres impacted) ratio or higher through on-site or off-site mitigation, or a combination of both.

Visual, noise, and vibration disturbances from construction may make adjacent habitats less desirable and could therefore disrupt typical behaviors of individual birds that may occupy the area. However, it is anticipated that such disturbances would have little effect on these species because the proposed activities would be localized and would occur within a previously disturbed road corridor. In addition, special status bird species that currently use habitat within or adjacent to the study area are likely habituated to human disturbance. Road rehabilitation would not increase the overall capacity of SFDB and would not significantly alter the vertical or horizontal alignment. Therefore, long-term noise effects resulting from traffic-related noise are anticipated to remain unchanged from current conditions.

In the long term, habitat characteristics within and adjacent to the study area are expected to remain similar to existing conditions (i.e., low quality) for all special status bird species. Implementation of avoidance, minimization, and mitigation measures (e.g., timing restrictions and pre-construction surveys) would further minimize potential impacts to bird species. For these reasons, the following conclusions have been made:

- The Action Alternative may impact individual species, but is not likely to result in a trend toward federal listing or loss of viability of:
 - Tricolored blackbird
 - Yellow warbler
 - Saltmarsh common yellowthroats
 - Golden eagle
 - Burrowing owl
 - Swainson's hawk
 - Northern harrier
 - White-tailed kite
 - Cooper's hawk
 - Sharp-shinned hawk
 - Bald eagle
 - Osprey
- The Action Alternative may affect, but is not likely to adversely affect, northern spotted owl.

Amphibian Species

The California red-legged frog is known to occur within the study area. In addition, the study area is located within California red-legged frog designated critical habitat and contains aquatic breeding and non-breeding habitat and wintering dispersal habitat. In the short term, construction activities could result in harm and harassment to the species from construction equipment runoff and sediment introduction, inadvertent harm from heavy equipment traffic,

and harassment due to increased noise, vibrational, and visual disturbances due to the presence of construction equipment and personnel. These disturbances could encourage California red-legged frogs to leave habitat within the study area. Important life events, such as migration, dispersal, foraging, breeding, and egg-laying, may be altered as a result of these disturbances during construction.

In the long term, the Action Alternative could result in displacement from the loss or degradation of habitat. Vegetation removal would occur along SFDB while widening roads, creating staging areas, installing and cleaning culverts, and realigning segments of SFDB. Table 11 summarizes the permanent and temporary disturbance to red-legged frog habitat based on conceptual design.

All of these impacts would occur in designated critical habitat. The area of East Schooner Creek contains habitat where red-legged frogs are known to occur. Raising and shifting the roadway, as well as replacing and cleaning culverts in this area, would result in habitat impacts. However, shifting the roadway away from the creek channel and restoring the function of the culverts, thereby removing barriers to frog passage and dispersal, could limit the likelihood that frogs would be on the surface of the roadway. As a result, both of these improvements could minimize the potential for mortality from vehicles.

Table 11: Direct Effects to California Red-legged Frog Habitat⁸

Habitat Type	Permanent Impacts (acres)	Temporary Impacts (acres)
Aquatic breeding	0.3	0.2
Aquatic non-breeding	6.0	4.6
Upland wintering and dispersal	27.5	19.9

The increase of impervious surface by up to 6.0 acres through added road surface and paved ditches could affect water quality, which could indirectly affect frogs. California red-legged frogs are extremely sensitive to chemicals. More impervious surface can increase stormwater flow into adjacent habitat and lead to greater sedimentation. The potential for chemical-laden runoff may be increased, particularly during construction.

The Action Alternative may affect, and is likely to adversely affect, the California red-legged frog and designated critical habitat. However, implementation of avoidance and minimization measures, such as biological monitoring during construction and mitigation of habitat, is anticipated to reduce adverse effects to less than significant. Avoidance, minimization, and mitigation measures to be implemented are outlined in Section 3.15.4. Formal Section 7 consultation has been initiated with USFWS and is ongoing.

Reptile Species

The western pond turtle lives in waterbodies, but requires vegetated land for thermoregulation and protection from predators. Although not known to occur within the study area, the turtle has the potential to occur in permanent waterbodies in the northern portion of the study area; specifically, East Schooner Creek. Replacement of the culvert at East Schooner Creek may result in negative direct impacts to potential habitat and cause the species to disperse. A potential increase in sediment and erosion resulting from construction activities near East Schooner Creek may indirectly affect downstream individuals. However, sediment and erosion controls will be installed and BMPs will be maintained in effective and operating condition to help minimize the amount of sedimentation.

⁸ Habitat impact values in the EA/IS differ from impact values presented in the Biological Assessment prepared for this project (Jacobs 2014), although both are based on a conservative estimate of impacts using the conceptual design. Subsequent to submittal of the Biological Assessment to the USFWS, it was determined that some areas of habitat impact were over-reported. As part of formal consultation under Section 7 of the FESA, CFLHD is preparing a supplement to the Biological Assessment that will include updated impact estimates based on preliminary design and information outlining the mitigation approach. Impacts based on preliminary design are anticipated to be less than reported in the EA/IS.

Potential habitat at East Schooner Creek could also be temporarily degraded due to clearing and grubbing of stream bank vegetation. If turtles do occur in this area, they may be temporarily displaced during construction. Turtles would be active during the dry, low-flow time of year when construction activities would occur. Therefore, there is limited potential for direct mortality since they would likely disperse prior to any earth-work. Additionally, noise and vibration from construction, as well as visual disturbances from increased activity during construction, could affect individuals by altering behaviors and reducing their likelihood of inhabiting areas near the project. However, noise and vibration disturbance is expected to be short-term, resulting in temporary impacts.

Implementation of standard BMPs, such as erosion and sediment control and revegetation, are expected to minimize overall impacts to the species and potential habitat. Therefore, the Action Alternative may affect individual western pond turtles, but is not likely to result in a trend toward federal listing or loss of viability.

Invertebrate Species

Two of the four known populations of Myrtle's silverspot butterfly are located within PRNS and overlap the study area. The species prefers areas of coastal dunes, prairies, and scrub in temperate climates with ample air moisture (USFWS 1998), and is dependent on western dog violet (*Viola adunca*) for food and to host larvae. During field surveys, this host plant was identified at six locations within the study area between PM 4 and PM 6. Potential direct effects to the species may include harassment, injury, harm, or direct take through presence of construction equipment; displacement from the destruction or degradation of habitat; harassment due to increased noise, vibration, and visual disturbances; and reduction in food sources available to individuals present within the project footprint. Based on California Natural Diversity Database habitat information for PRNS, it is estimated a total of 19.0 acres of habitat would be permanently impacted and 15.5 acres of habitat would be temporarily impacted by the Action Alternative. All six of the individual western dog violet plants identified within the study area are within either the project's grading limits or temporary construction limits. Overall, project construction could affect availability of nectar sources and degrade existing habitat. However, pre-construction surveys would be completed to identify any Myrtle's silverspot butterfly present in the study area and, if identified, required avoidance measures would be determined in coordination with USFWS. Pre-construction surveys would also be conducted for western dog violets and, if identified, the plant(s) would be fenced or flagged for avoidance or transplanted. These measures are expected to avoid or minimize potential impacts to the species. Potential indirect effects include permanent vegetation removal and introduction of non-native plant species, which can reduce foraging and breeding habitat and reduce the quality of habitat.

During construction, the increased presence of personnel and construction equipment would increase the likelihood that butterflies in the study area would incur injury, and could result in direct mortality of an individual or individuals. The increased noise, visual, and vibration disturbances could also encourage butterflies to leave suitable habitat within the study area. While this could incidentally reduce the potential for mortality during construction, these disturbances could alter important life events, such as migration, foraging, breeding, egg-laying, and metamorphosis. However, these disturbances would be short-term, and post-construction conditions would be similar to existing conditions.

Although the project may result in both direct and indirect impacts to Myrtle's silverspot butterfly, avoidance and minimization measures, mitigation efforts, and BMPs designed to



reduce habitat degradation and destruction would reduce potential impacts. With the implementation of these measures, the Action Alternative may affect, but is not likely to adversely affect, Myrtle's silverspot butterfly.

Mammal Species

Bats

Western red bat, Townsend's big-eared bat, and pallid bat may incur impacts from the Action Alternative caused by permanent and temporary vegetation removal, noise and vibration from construction activity, and visual disturbances from presence of construction equipment and personnel. Vegetation removal could impact foraging and roosting habitat for sensitive bat species. Oak woodlands, coniferous forests, deciduous woodlands, brushy terrain, open farmland, buildings, and riparian woodlands, all of which provide general habitat for one or more of the bat species, are present in the vicinity of the project area. Roosting habitat is primarily present in forested areas from approximately PM 9 to PM 12. Trees, snags, and other vegetation that may provide roosting habitat could be removed along SFDB. Foraging habitat may include areas near wetlands, open water, open grasslands, edge habitat, and pastures along the entire corridor. Vegetation in these areas may also be removed due to project activities. Structures are present near the study area that could provide hibernacula and roosting habitat. Additionally, noise, vibration, and visual disturbances from increased activity during construction could affect individuals and encourage them to leave the study area.

Although habitat is present for all three species, and western red bat and pallid bat have been known to occur in proximity to the study area, much of the impacted areas are not high quality habitat due to the frequent disturbance from traffic along SFDB. Structures that may provide hibernacula or roosting habitat would not be removed under the Action Alternative. Visual, noise, and vibration disturbances from construction may make adjacent habitats less desirable, and could therefore disrupt typical behaviors of those individuals that may occupy the area. However, it is anticipated that this would have little effect on these species because impacts from the Action Alternative would be localized and would occur within a previously disturbed road corridor. In addition, habitat characteristics within and adjacent to the study area are expected to remain similar to existing conditions (i.e., low quality) in the long term. Construction would only occur during daylight hours and would not impact foraging behaviors, but could affect daytime roosting. With proposed mitigation, noise from construction equipment would likely be comparable to current noise levels within the study area, which experiences frequent vehicle use along SFDB. For these reasons, the Action Alternative may affect individual special status bat species, but is not likely to result in a trend toward federal listing or loss of viability.

Terrestrial Mammals

Based on the California Natural Diversity Database, no recent occurrences of the American badger, Point Reyes mountain beaver, or Point Reyes jumping mouse have been documented within the study area. However, the study area does contain suitable habitat for the badger and mouse, and suitable habitat for the beaver is located near the study area between PM 9 and PM 12. In addition, badgers are known to occur within PRNS. Removal of habitat to widen the roadway, realign select areas of the road, replace culverts, and clear and grub the clear zone could impact the American badger and Point Reyes jumping mouse. However, the habitat within the study area for the badger and mouse, and near the study area for the beaver, is not high quality because of frequent disturbance from traffic along SFDB. Point Reyes mountain beaver is unlikely to incur impacts from permanent and temporary vegetation removal because it is uncommon for the species to inhabit areas near the roadside, and SFDB does not bisect known occupied habitats (Press 2014).

During construction, visual, noise, and vibration disturbances may make adjacent habitats less desirable, and could disrupt typical behaviors of individuals that may occupy the area. However,

such disturbances are anticipated to have little effect on these species because impacts from the Action Alternative would be localized and would occur within previously disturbed road corridor. In the long term, habitat characteristics within and adjacent to the study area are expected to remain similar to existing conditions. Furthermore, construction activities would likely flush out Point Reyes jumping mouse early during project work, which could reduce potential mortality from construction. Noise disturbances are expected to be short-term, and post-construction conditions would be similar to existing conditions.

For these reasons, the Action Alternative may affect American badger, Point Reyes mountain beaver, and Point Reyes jumping mouse individuals, but is not likely to result in a trend toward federal listing or loss of viability.

Fish Species

The study area contains critical habitat for CCC coho salmon and central California steelhead. CCC coho salmon are not likely present in the study area because there are no known occurrences within Drakes Estero or its tributaries (NMFS 2006), which includes Schooner Creek and East Schooner Creek. The nearest known distribution of coho salmon is in Lagunitas Creek, and none of the aquatic features or slopes in the study area drain towards this creek or Tomales Bay, which makes likelihood of occurrence in the study area low. While the species is not known to currently be present in the vicinity of the study area, Drakes Estero and its tributaries contain habitat necessary for the species to occur. Central California steelhead are known to occur within East Schooner Creek.

This species could be impacted by roadway work, vegetation removal and disturbance, culvert replacements, and in-channel work in Schooner Creek and East Schooner Creek. The replacement of culverts at Schooner Creek and East Schooner Creek would occur within coho salmon and steelhead critical habitat. Because coho salmon are not likely present in the study area, potential effects to the species are not anticipated. If effects occur, they would be similar to effects to steelhead, and are discussed as such.

The existing twin culverts at Schooner Creek channelize and constrict water flow from both the freshwater entering Schooner Bay and from tidal flows that intersect upstream habitats, making it difficult for fish to transition between freshwater and saltwater habitats. The replacement of the twin culverts with an arch structure would help alleviate the bottlenecked flow in this area and reduce the peak flow velocity. This would allow the estuary to better function in its natural condition as a transition zone for fish species. During construction, the width of the channel would be slightly narrowed using sheet piling as a coffer dam to allow installation of the arch foundations in dry conditions. Areas behind sheet piles would be temporarily dewatered, which would temporarily reduce or alter aquatic habitat. However, this reduction represents a minimal amount of habitat present in the study area and is not likely used during low-flow periods in Schooner Creek when construction would occur (July 1–October 15). In addition, following construction, the channel width would be roughly 30 feet wide, which is approximately 14 feet wider than the existing channel. It is expected that habitat would primarily be impacted during construction activities and that, while impacts would still be incurred during the time it takes to re-establish riparian habitat, long-term habitat impacts would ultimately be beneficial, as coho salmon and steelhead would have access to more spawning and rearing habitat. Additionally, the hydrologic function would improve and benefit the estuary in this location, which would benefit Essential Fish Habitat and the HAPC within the study area.



Existing East Schooner Creek culvert

At East Schooner Creek, the existing undersized and sediment-loaded culvert obstructs upstream movement of steelhead. The installation of a reinforced concrete box culvert would require excavation of existing sediment and in-stream water work approximately 50 feet upstream and 50 feet downstream of the road and creek crossing. It is unlikely that steelhead occur in the portion of East Schooner Creek where the culvert replacement would take place due to the large amount of sediment that is present, which makes occupying this area and upstream areas improbable. Additionally, these effects are anticipated to be short-term, with the greatest likelihood being during construction, which would occur during low-flow periods in East Schooner Creek (July 1–October 15) when the potential for fish occurrence is unlikely. In the long term, the replacement of the culvert with a structure that facilitates fish passage would help reestablish the function of the habitat. The quality and function of the critical habitat and Essential Fish Habitat in this area, as well as downstream habitats, would be improved by restoring more natural stream flows that are currently impeded by the deposition of sediment and a non-functioning culvert.

The increase in impervious surface by a maximum of 6.0 acres could reduce water infiltration and concentrate runoff and increase discharge, which could indirectly affect fish species. The additional road surface, along with associated soil disturbance, may contribute to indirect effects by increasing the amount of surface runoff into surface waters. Impervious surfaces can also collect pesticides, herbicides, fertilizers, gasoline, and other petroleum products, which may discharge into adjacent drainages, wetlands, and riparian areas and affect aquatic habitat. In addition, removal of riparian vegetation could indirectly affect the species through an increase in water temperatures from lack of shading, an increase in erosion and turbidity due to bank destabilization, and a decrease in forage abundance.



Coho salmon

During construction, noise and vibration, particularly from pile driving at Schooner Creek, could temporarily affect fish species that use the area by causing them to avoid potential habitat. Culvert replacement and other near-stream construction activities may cause temporary increases in turbidity and introduce chemicals. Short-term increases in turbidity would likely occur during proposed dewatering activities, construction and removal of cofferdams (sheet piles), in-stream construction activities, and soil disturbance adjacent to SFDB and waterways.

Although potential habitat, including designated critical habitat, for both fish species exists within the study area, in-water construction activities in Schooner Creek, East Schooner Creek, and associated unnamed drainages would be restricted to between July 1 and October 15 when neither species is likely to be present. Because of this, the Action Alternative may affect, but is not likely to adversely affect, central California coast coho salmon and central California coast steelhead. With regard to critical habitat, the Action Alternative is anticipated to result in long-term benefits to central California coast coho salmon and steelhead habitat within the study area. Therefore, the Action Alternative may affect, but is not likely to adversely affect, designated critical habitat for each species. In addition, the Action Alternative would not adversely affect Essential Fish Habitat within the study area and is likely to result in a net benefit for Essential Fish Habitat in the long term, specifically for spawning, rearing, and migration habitat of central California coast coho salmon that may occupy the estuary. Similar benefits are expected for the estuary HAPC, which would also benefit from the improved hydrologic function within the study area.

Plant Species and Sensitive Natural Communities

The Action Alternative would result in similar effects to all special status plant species and sensitive natural communities. Soil removal, grading, paving, trampling by equipment and personnel, and overall removal of habitat would adversely affect each species. Expanding the

road bed, cutting the road slope, clearing vegetation, and replacing culverts may contribute to direct impacts to plant species. Based on GIS data and field surveys, it was also determined that the Action Alternative would permanently and temporarily remove individual special status plant species and portions of sensitive natural communities. Table 12 summarizes these impacts.

Table 12: Direct Impacts to Special Status Plant Species and Sensitive Natural Communities

Species	Permanent Impacts (acres)	Temporary Impacts (acres)
Special Status Plant Species		
Beach starwort (<i>Stellaria littoralis</i>)	0.05	0.01
California bottle-brush grass (<i>Elymus californicus</i>)	< 0.01	< 0.01
Marin checker lily (<i>Fritillaria lanceolata</i> var. <i>tristulis</i>)	—	< 0.01
Marin Manzanita (<i>Arctostaphylos virgata</i>)	—	< 0.01
Point Reyes ceanothus (<i>Ceanothus gloriosus</i> var. <i>gloriosus</i>)	—	—
Mount Vision ceanothus (<i>Ceanothus gloriosus</i> var. <i>porrectus</i>)	< 0.01	< 0.01
Point Reyes bird's-beak (<i>Chlorophyron maritimum</i> ssp. <i>palustre</i>)	< 0.01	< 0.01
Point Reyes checkerbloom (<i>Sidalcea calycosa</i> ssp. <i>rhizomata</i>)	< 0.01	—
Point Reyes horkelia (<i>Horkelia marinensis</i>)	0.01	0.04
Point Reyes meadowfoam (<i>Limnanthes douglasii</i> ssp. <i>suphurea</i>)	0.07	0.04
Purple-stemmed checkerbloom (<i>Sidalcea malviflora</i> ssp. <i>purpurea</i>)	< 0.01	< 0.01
Woolly-headed spineflower (<i>Chorizanthe cuspidata</i> var. <i>villosa</i>)	< 0.01	0.01
Sensitive Natural Communities		
Central Dune Scrub	0.45	0.31
Coastal and Valley Freshwater Marsh	0.11	0.19
Coastal Terrace Prairie	0.63	0.18
Northern Coastal Salt Marsh	0.10	0.14

Increased sediment from disturbed soils and the potential release of pollutants from construction equipment can also damage or kill plants, or degrade habitats. Indirect impacts could include the introduction of invasive weeds, surface and subsurface hydrologic alterations, erosion, and removal or reduction of a vegetation buffer between human and natural activities. The increase in impervious surface area could also indirectly affect sensitive plant species through an increase in erosion and sediment runoff. Increased impervious surfaces may also contribute chemical runoff from the materials used to construct the road. Runoff may then affect vegetation near roadsides or aquatic vegetation.

The Action Alternative would have no effect on Point Reyes ceanothus. With the exception of Point Reyes ceanothus, the Action Alternative may affect individual plants, but with the incorporation of avoidance, minimization, and mitigation measures, it is not likely to result in a trend toward federal listing or loss of viability. With regard to the state-listed Point Reyes meadowfoam, impacts would occur to three separate populations. Based on a review of corresponding population data from the California Natural Diversity Database and NPS at each

impact location, these populations range between 12 and 82 acres in size. Therefore, the impacts of the project to these populations would represent a very small percentage of the presumed population – accounting for less than 0.1 percent of each population.

In addition, the Action Alternative may adversely affect sensitive natural communities within the study area, but with the implementation of avoidance and minimization measures, there would be a minimal reduction of acreage and their ecological function would remain unaltered.

California Coastal Act

In accordance with Article 4, Section 30236, the increase in channel width of Schooner Creek and minor temporary damming and dewatering using sheet piles would be conducted to improve fish passage. The removal of the existing twin culverts with an open bottom arch structure would alleviate the bottlenecked flow in the estuarine area and would ultimately improve drainage and tidal dynamics at this location. Avoidance, minimization, and mitigation measures would be implemented to reduce potential impacts to fish and wildlife at this location, as discussed below.

In accordance with Article 4, Section 30240, effects to environmentally sensitive habitat (i.e., federally designated critical habitat and Essential Fish Habitat) would be reduced to the greatest extent practicable. Project design has limited the roadway width to 24 feet and included numerous design elements and exceptions to minimize the overall project footprint, thereby decreasing impacts to adjacent sensitive habitat (see the Wetlands and Other Waters of the U.S. section for more detail on these measures). No significant disruption in habitat values is anticipated to central California coast coho salmon and steelhead critical habitat, as well as Essential Fish Habitat for Pacific coast salmon, Pacific groundfish, and Pacific pelagic fish species. Any disruption would be short-term and minimized through construction during low-flow periods. In the long term, the Action Alternative is expected to have a beneficial effect on designated critical habitat and Essential Fish Habitat within the study area. Overall, the hydrologic function would improve and benefit the estuary in this location, which would also benefit the HAPC.

Adverse effects are expected to designated California red-legged frog habitat. Given the proximity of the habitat to the roadway, impacts to critical habitat are unavoidable. However, habitat would be mitigated in accordance with the terms and conditions of the USFWS Biological Opinion which is anticipated to minimize impacts such that they would no longer significantly degrade the habitat and would not diminish the role the critical habitat plays in California red-legged frog recovery.

3.15.4 Avoidance, Minimization, and/or Mitigation Measures

Many measures have been incorporated into the Action Alternative to avoid, minimize, or mitigate impacts to special status species. These measures are specific to the project area, which encompasses the project construction limits and is slightly smaller than the study area used for special status species analysis. The following BMPs would help avoid and minimize impacts to all species:

- Prior to construction, workers shall receive Worker Environmental Awareness Training (WEAT) to be conducted by a qualified biologist. WEAT shall include, but is not limited to, identification of relevant biological resources (e.g., special status species that may be found in the project area) and an overview of conservation measures and avoidance and mitigation measures that are required during construction activities. Handouts summarizing information presented during WEAT and relevant contact information shall be provided to the workers. Upon completion of training, employees shall sign a form stating that they attended the training and understand all of the conservation and protection measures.
- All vehicles and equipment entering the project area must be clean of noxious weeds and free from oil leaks, and are subject to inspection. All construction equipment shall be washed

thoroughly to remove all dirt, plant, and other foreign material prior to entering the project area. Particular attention shall be shown to the under-carriage and any surface where soil containing exotic seeds may exist. These efforts are critical to prevent the introduction and establishment of non-native plant species into the project area. Arrangements shall be made for inspections of each piece of equipment before entering the project, and records of inspections shall be maintained. Equipment found operating on the project that has not been inspected or has oil leaks shall be shut down and may be subject to citation.

- To further minimize the introduction or spread of invasive species or non-native plant species, the contractor shall: (1) cover fill material in haul trucks entering the park; (2) limit vehicle parking to existing roadways, parking lots, access routes or previously disturbed sites approved by PRNS; (3) obtain all sand, rock, gravel, and erosion-control materials from PRNS-approved sources that are free of weeds and non-degradable contaminants.
- Before clearing, grubbing, and grading, the contractor shall construct all erosion controls around the perimeter of the project area under construction, including filter barriers, diversion, and settling structures. The combined grubbing and grading operations shall be limited to 350,000 square feet of exposed soil at one time.
- The contractor shall ensure that food scraps and other trash from the project are deposited in covered or closed trash containers. The trash containers shall be removed from the project site at the end of each working day.
- All material and debris generated as a result of project construction shall be removed from the site and disposed in an approved location outside of USACE jurisdiction.
- To minimize air pollution, the contractor shall control dust within the project construction limits in accordance with FP 158, FP 312, and applicable state and federal regulations.
- Operators shall avoid leaving equipment and vehicles idling for more than five minutes when parked or not in use.
- Appropriate permits to comply with Section 404 and Section 401 of the CWA shall be obtained.
- CFLHD shall comply with the *California Stormwater BMP Handbook* (2009) specifically addressing procedures for the proper use, storage, and disposal of materials and equipment on temporary construction pads that minimize or eliminate the discharge of potential pollutants to a watercourse (NS-14 in handbook) and procedures to protect waterbodies from debris and wastes associated with structure demolition or removal over or adjacent to watercourses (NS-15 in handbook).
- Any spill of petroleum products, hazardous materials, or other chemical or biological products released from construction, fleet, or other support vehicles, or stationary sources shall be properly cleaned, mitigated, and remedied, if necessary. Response shall occur in accordance with federal, state, and local regulations. Any spill of petroleum products or a hazardous material shall be reported to the appropriate federal, state, and local authorities, if the spill is a reportable quantity.
- Leaks shall be repaired immediately on discovery. Equipment that leaks shall not be used. Oil pans and absorbent material shall be in place prior to beginning work. The contractor shall be required to provide the “on-scene” capability of catching and absorbing leaks or petroleum product spills, including antifreeze from breakdowns or repair actions, with approved absorbent materials. A supply of acceptable absorbent materials at the job site in the event of spills, as defined in the SWPPP, shall be available. Sand and soil are not approved absorbent materials. Soils contaminated with fluids shall be removed, placed in appropriate safety containers, and disposed of according to state and/or federal regulations.

- The construction contractor shall use best management practices to prevent the discharge of equipment fluids. All equipment shall be stored, repaired, maintained, and fueled at least 65 feet away from waterways, wetlands, and riparian habitat. A plan to allow a prompt and effective response to any accidental spills shall be developed prior to construction.
- Certified weed-free permanent and temporary erosion control measures shall be implemented to minimize erosion and sedimentation during and after construction.
- CFLHD shall conform to the Federal Seed Act, the Federal Noxious Weed Act, and applicable state and local seed and noxious weed laws.
- Herbicides and pesticides shall not be used within the project construction limits.

The following avoidance and minimization measures would be implemented to reduce impacts to special status wildlife and aquatic species:

- Tree and vegetation removal shall not occur February 1–August 1 between PM 10 and PM 12 to avoid the primary nesting season for northern spotted owl. In addition, tree and vegetation removal shall not occur between March 15 and August 1 for the entire project area for birds protected under MBTA and special status bat species.
- If any vegetation removal activities are scheduled February 1–August 1 between PM 10 and PM 12 or March 15–August 1 for the remainder of the project corridor, a pre-construction nest and roost survey shall be conducted no more than three days prior to construction to identify any active nests and roosts. Breeding and nesting behaviors shall be recorded and nest locations shall be documented using a Global Positioning System (GPS). Prior to conducting presence/absence surveys, biologists shall consult with PRNS for information on these species (i.e., known location, recent sightings, or presence of any tracked individuals near the project area).
- If active migratory birds or raptor nests are identified during the nesting season, a no-disturbance buffer shall be established around the nests. The extent of the no-disturbance buffers shall be determined by a wildlife biologist in consultation with CDFW or PRNS staff, depending on jurisdiction, and shall depend on the level of noise or construction disturbance, line of sight between the nest and the disturbance, ambient levels of noise and other disturbances, and other topographic or artificial barriers. The purpose of the buffer is to avoid disturbance or destruction of the nest until after the breeding season, or until a wildlife biologist determines that the young have fledged (usually late June to middle July). Within this buffer, construction activities shall be avoided during the identified species nesting season. However, construction activities can proceed if the biological monitor determines that the individual is not likely to abandon the nest during construction.
- During tree removal activities, attempts shall be made to avoid removing large, mature trees and snags to the greatest extent practicable.
- No man-made structures that could provide substrate for bat roosting shall be removed. Prior to any tree removal, a qualified biologist shall conduct a habitat assessment for any potentially suitable bat habitat within the trees to be removed. If no suitable habitat is identified, then avoidance for the species has been achieved. If the survey reveals suitable bat habitat, and tree removal is scheduled between April 16 and August 31 and/or between October 16 and February 28, then bat presence/absence surveys shall be conducted prior to any tree removal. If presence/absence surveys are negative then avoidance has been achieved, and trees may be removed following the two-phased tree removal system. The two-phased removal system shall be conducted over two consecutive days. The first day, in the afternoon, limbs and branches are removed by a tree cutter using chainsaws only. Limbs with cavities, crevices or deep bark fissures would be avoided, and only branches or limbs

without those features would be removed. On the second day, the entire tree is removed. If presence/absence surveys result in bat occupancy then the occupied trees shall only be removed from March 1–April 15 and/or August 31–October 15.

- A biological monitor shall be present on site to monitor for California red-legged frog during construction. The monitor shall be approved by the USFWS at least 15 days before construction begins. Credentials and experience must be supplied to the USFWS.
- A USFWS-approved biologist shall search all suitable habitat areas, including within 300 feet of any drainage or identified wetland within the project area, for California red-legged frogs prior to project activities each day and after rain events, and shall be present on site during all project activities. The approved biologist shall have the authority to stop any work that may result in the take of any California red-legged frogs.
- Excavated steep-walled holes or trenches more than 1 foot deep shall be provided with one or more escape ramps constructed of earth fill or wooden planks at the end of each work day to assist with avoiding entrapment of wildlife. Escape ramps or covered open trenches would help prevent injury or mortality of wildlife resulting from falling into trenches and becoming trapped. Trenches shall be inspected for the presence of federally-listed species at the beginning of each workday by a designated person trained by the USFWS-approved biologist. This person shall report daily during construction to the USFWS-approved biologist on the findings of these inspections and daily monitoring.
- For all activities occurring within the bed or bank of a drainage, daily construction monitoring for California red-legged frog by a qualified biologist shall be required.
- Construction shall only occur during daylight hours (1/2 hour after sunrise to 1/2 hour before sunset).
- No construction staging shall occur in wetlands or riparian habitat.
- California red-legged frogs found within the project area shall be captured by the approved biologist and held for the minimum amount of time necessary to release them in a suitable habitat outside of the construction work area following proper protocol detailed in the biological assessment (Jacobs 2014c) prepared for this project. Suitable release sites shall be identified by the USFWS-approved biologist prior to the start of construction.
- Any dewatering using pumps shall include screening not to exceed 0.2 inch mesh size. Pump intakes shall be placed in larger, perforated intake basins to allow water to be drawn into the pump while protecting aquatic organisms from entrainment. Both the outside of the intake basin and the pump intake shall be screened. The perforated intake basin shall be large enough to reduce the intake velocity so as not to impinge aquatic organisms on the screen.
- Ground-disturbing activities shall be restricted to the dry season at approximately PM 1.6–1.8, PM 4.2–4.3, PM 8.5–10.1, and PM 10.5–10.6 to avoid the period when California red-legged frogs could be actively breeding and dispersing to riparian habitats. Restrictions include no work between October 15 and June 15 for aquatic breeding areas.
- Prior to any ground disturbance on the project site, wetland areas adjacent to the construction footprint shall be clearly delineated with orange-colored plastic construction fencing (environmentally sensitive area fencing), silt fencing, or solid barriers to wetlands to prevent workers or equipment from inadvertently straying from the project area.
- Impacts to overhanging riparian vegetation will be minimized to the maximum extent practicable to reduce loss of shading and structure along East Schooner Creek and other wetlands and waterways while allowing equipment access to the waterbodies.

- Removal of large woody debris shall be limited to the area necessary to complete excavation and rock placement.
- Plastic mono-filament netting (erosion control matting) or similar material containing netting shall not be used at the project site as California red-legged frog or other animals may become entangled or trapped in it. Acceptable substitutes include coconut coir matting or tackified hydro-seeding compounds.
- California red-legged frogs may take refuge in cavity-like structures (e.g., pipes, culverts). To prevent entrapment, any materials stored for one or more overnight periods shall be either securely capped prior to storage or thoroughly inspected by the on-site biologist and/or the construction foreman for individuals before the structure is used. If individuals are found, protocols for handling and relocating individuals as outlined in the biological assessment (Jacobs 2014c) prepared for this project shall be followed.
- Work in Schooner Creek, East Schooner Creek, and unnamed drainages between PM 9 and PM 12 shall be conducted during no- to low-flow periods of the year (July 1 to October 15 or the first significant fall rainfall; i.e., 0.2 inches over a 24-hour period). For the remainder of the project corridor, culvert repair or replacement and associated work shall be completed during the dry season—typically between April 15 and October 15 or the first significant fall rainfall. All construction-related work within waterways that cross the project area shall be done in accordance with permit conditions.
- In accordance with the NPDES permit, a Rain Event Action Plan (REAP) shall be developed prior to Notice to Proceed. The REAP shall be reviewed and structured to address project-specific actions that are needed to prevent pollutants from reaching waterways or wetlands during a rain event. The REAP shall be executed within 48 hours prior to a forecasted rain event of 50 percent chance of precipitation or more.
- If a badger is observed within or near the project construction limits, construction shall stop and a PRNS biologist shall be notified. The biologist, in consultation with the Contracting Officer, shall determine an appropriate buffer distance and what construction activities can proceed.
- A qualified biologist shall perform surveys prior to construction to determine the presence or absence of any life-stage of Myrtle's silverspot butterfly. If any life-stage of Myrtle's silverspot butterfly is observed during pre-construction surveys, the USFWS shall be contacted before work activities begin for technical assistance and determination if additional protection measures are needed.
- A qualified botanist shall conduct preconstruction surveys of the construction limits for western dog violet plants prior to project implementation. Identified plant populations shall be marked prior to project construction for avoidance during construction. If a plant population(s) cannot be feasibly avoided, individual plants shall be relocated by a qualified botanist to a location adjacent to the project disturbance limits.
- If a seal or sea lion is identified within the project area, all work within 300 feet of the animal(s) shall be stopped and the contractor will contact PRNS immediately. Work may resume once the seal or sea lion has left the project area or as approved by PRNS.

The following avoidance and minimization measures would be implemented to reduce impacts to special status plant species and sensitive natural communities:

- Impacts to sensitive natural communities shall be minimized by designating Environmentally Sensitive Areas. Environmentally Sensitive Areas shall include each population of special status plants known to occur within the study area, as well as locations of sensitive natural communities. Annual and perennial plant populations shall be delineated

separately to ensure that the proper revegetation or transplanting methods, as described below, are followed. Environmentally Sensitive Areas shall be delineated with flags or fencing prior to construction and shall be maintained by the contractor and the biological monitor throughout construction. The contractor shall avoid fenced Environmentally Sensitive Areas. Where Environmentally Sensitive Areas cannot be avoided, the following measures shall be implemented.

- Special status perennial plants with a Rare Plant Rank of 1, 2, or 4 will be transplanted. Perennial plants and their associated soil profiles shall be transplanted to adjacent areas outside of the impact zone, in close coordination with and guidance from PRNS ecologists. Prior to construction, seeds or cuttings shall be collected from perennial plants for propagation. Propagules shall be planted with the transplants to account for potential failure of transplants, as deemed necessary through coordination with PRNS ecology staff.
- Special status annual plants shall be reseeded as appropriate, including Point Reyes meadowfoam (blooms March to May), Point Reyes Bird's-beak (blooms June to October), and woolly-headed spineflower (blooms May to August) in a suitable location within the project corridor at a 2:1 rate.
- Where permanent impacts and annual plant Environmentally Sensitive Areas overlap, seeds shall be collected from each species. Therefore, seed shall be collected prior to construction initiation/bid letting or construction shall occur after the species has produced seeds (May through October depending on the species). Collected seeds shall be dispersed in an area equivalent in size to the original, and in an area appropriate for each species. If feasible, the reseeded area shall be adjacent to the current population. Reseeding efforts shall occur amid close coordination with PRNS ecology staff.
- Where temporary impacts and annual plant Environmentally Sensitive Areas overlap, seed shall be collected prior to construction initiation/bid letting or construction shall occur after each species has had time to set seed (May through October, depending on the species). Seeds collected shall be stored for reseeded. After seed collection, the top six inches of soil shall be stockpiled and replaced in-kind post-construction. Collected seeds shall be dispersed in the same area and equivalent in size to the original. Reseeding efforts shall occur amid close coordination with PRNS ecology staff.
- Topsoil shall be conserved and separated from roadway excavation and embankment foundation areas. No topsoil shall be imported from outside PRNS and only conserved topsoil shall be used. All areas disturbed by earthwork or other construction activity shall have topsoil replaced, as required, within two weeks of completing slope finishing.

To mitigate for impacts to special status species, the following measures will be implemented:

- Abandoned segments of roadway and temporarily impacted areas along SFDB within the project limits that would no longer be in use shall be reclaimed and revegetated. Degraded areas impacted from construction-related activity shall be replanted or reseeded with native plants from the watershed or nearby watershed under guidance from PRNS biologists. Shrubs, trees, and herbaceous perennials and annuals shall be seeded and planted along riparian corridors where impacts and vegetation removal occur. Riparian vegetation shall be replanted with shrubs or live-stakes along the banks of East Schooner Creek. CFLHD shall prepare a restoration plan for the project in consultation with PRNS for appropriate seed mixes and plants. Revegetated areas shall be protected and cared for, including watering when needed, until restoration criteria have been met under USACE permits, USFWS

Biological Opinion, and/or NPDES standards. Revegetated areas shall be monitored in accordance with the approved restoration plan to ensure success criteria are met.

- Impacts to Point Reyes meadowfoam habitat shall be mitigated at a 2:1 ratio (created habitat to impacted habitat) at an appropriate location within the project area to ensure the successful translocation of the species. The newly created habitat shall be monitored annually for five years during the height of the blooming season. To promote success of the mitigation, mowing within the newly created habitat as part of road maintenance or fire reduction shall occur after meadowfoam have set seed (typically occurs by June). A mitigation and monitoring plan shall be created and approved by CDFW, PRNS, and CFLHD prior to initiation of construction.
- Impacts to designated California red-legged frog critical habitat shall be mitigated in accordance with the terms and conditions of the USFWS Biological Opinion.

Mitigation for impacts to federally listed species protected under the Endangered Species Act will be determined at the conclusion of Section 7 consultation with the USFWS. Similarly, mitigation for impacts to wetlands and other waters of the U.S. is subject to the approval of the USACE. Consultation with both agencies was underway during the circulation of this EA/IS. If mitigation commitments required in the permit terms and conditions from those agencies would result in environmental impacts that were not considered in this EA/IS, CFLHD will ensure that those impacts are also assessed and reviewed. For example, impacts to California red-legged frog designated critical habitat may require off-site mitigation through the creation of suitable habitat. Whether or not the location of the mitigation site(s) is located on PRNS, CFLHD will conduct an environmental analysis on the impacts of constructing a site or sites, and include the analysis in a NEPA re-evaluation document. The purpose of the NEPA re-evaluation is to determine whether the original NEPA decision is still valid. The NEPA re-evaluation will address the environmental impacts of the mitigation sites and other updates to resources discussed in the EA/FONSI as necessary. The NEPA re-evaluation would conclude in one of three ways: 1) The FONSI remains valid and no further documentation is necessary; 2) The FONSI is still valid, yet additional analysis and documentation is needed to support the conclusion; or 3) The FONSI is no longer valid and either the scope of the project needs to be revised or an Environmental Impact Statement is required. If the mitigation is sited on the PRNS and it is determined that the NPS has an approval action that requires a NEPA decision, then the NPS can use the environmental analysis contained in the CFLHD re-evaluation as the basis for its own NEPA decision.

In addition to CFLHD's NEPA re-evaluation, Marin County may also conduct its own revalidation of the CEQA Mitigated Negative Declaration once additional mitigation measures are finalized. Title 14, California Code of Regulations Section 15162 provides direction in what factors and consideration should be made in the revalidation process. Based on the findings of that analysis, Marin County will determine in accordance with Section 15164 whether an addendum to the adopted Mitigated Negative Declaration is necessary or if a subsequent Negative Declaration must be prepared, noticed and circulated for public review. An addendum to an adopted Mitigated Negative Declaration, also known as a CEQA revalidation, need not be circulated for review. The addendum may only be used if the project changes will not result in new significant effects or a substantial increase in the severity of a previously identified significant effect. Marin County would consider the addendum with the adopted Mitigated Negative Declaration prior to making a decision to approve or reject the project.

3.16 Wildlife and Aquatic Species

This section addresses general wildlife and aquatic species. Given the unique and sensitive nature of PRNS, most wildlife and aquatic species within the study area are considered special status species and are discussed in the Special Status Species and Sensitive Natural Communities section. The study area used for this assessment encompasses the existing 60-foot-wide Marin County roadway easement and select areas beyond the county right-of-way that encompass areas of localized improvements. In addition, the study area includes 300 feet downstream of delineated perennial, ephemeral, and intermittent streams and drainages to account for any indirect impacts to water quality during construction.

3.16.1 Regulatory Setting

Limited regulations or policies exist for protection or management of general wildlife and aquatic species within the study area. NPS Management Policy 4.4.2 outlines management methods for native wildlife and plant species within the national park system. The policy dictates that native species be left to natural processes. However, intervention to manage native species may occur when it will not cause unacceptable impacts to the species or is required because human influence has adversely affected the population, or is needed to protect cultural resources and human health and safety, or to accommodate development or research, among others (NPS 2006a). In addition, CEQA also requires the evaluation of impacts to native resident or migratory fish or wildlife species, or impacts to known native resident or migratory wildlife corridors.

3.16.2 Affected Environment

The Point Reyes peninsula has a unique geology and climate that attracts an array of marine, estuarine, freshwater, and terrestrial biodiversity. The peninsula supports over 490 bird species, 85 fish species, 29 reptile and amphibian species, and 80 mammal species (NPS 2014i). A variety of terrestrial species are found within PRNS, such as bobcat (*Lynx rufus*), brush rabbit (*Sylvilagus bachmani*), coyote (*Canis latrans*), long-tailed weasel (*Mustela frenata*), and mountain lion (*Puma concolor*) (NPS 2012a). Tule elk (*Cervus canadensis*), which are a native species to the peninsula and had once been

extirpated, have been reintroduced to PRNS. Amphibian and reptile species within PRNS include species such as alligator lizard (*Eglaria coerulea* and *Elgaria multicarinata*), arboreal salamander (*Aneides lugubris*), California giant salamander (*Dicamptodon ensatus*), common garter snake (*Thamnophis sirtalis*), rough-skinned newt (*Taricha granulosa*), Pacific slender salamander (*Batrachoseps attenuates*), Western fence lizard (*Sceloporus occidentalis*), Western terrestrial garter snake (*Thamnophis elegans*), and Western skink (*Eumeces skitonianus*) (NPS 2007a, NPS 2007b). Freshwater fish species within PRNS include species such as common carp (*Cyprinus carpio*), smallmouth bass (*Micropterus dolomieu*), and Sacramento sucker (*Catostomus occidentalis*) (NPS 2007c).

The diversity of habitat supports a wide array of wildlife within the study area. However, habitat within the study area is not of high quality due to the frequent traffic disturbances (e.g., noise) along SFDB. The majority of the study area contains dry coastal grassland and open scrub habitat, which is used for foraging by many wildlife species and breeding for reptiles, mammals, and birds (CDFW 2005a). Pastures throughout the study area provide nesting habitat for ground-nesting birds and foraging habitat for mammals, including deer and elk. Riparian forest, which is located at the beginning of the project area, corresponds with freshwater emergent wetland and valley foothill riparian habitat. Freshwater emergent wetlands are one of the most productive wildlife habitats in California (CDFW 1998), and riparian habitat provides food, water, migration



Tule Elk within PRNS

corridors, shelter, and nesting for many wildlife species. Moist coastal grasslands, which are interspersed with drier grassland and pastures throughout the project area, are ideal habitat for species such as snakes, birds, owls, moles, gophers, mice, and voles, which also make it prime feeding habitat for raptors, bats, rabbits, and deer (CDFW 1988, CDFW 2005b). Salt marshes located near Schooner Creek provide saline emergent wetlands, which also provide food, cover, nesting, and roosting habitat for a variety of bird, mammal, reptile, and amphibian species.

Wildlife are likely to move along drainage and riparian corridors within the study area. No distinct native resident or migratory wildlife corridors have been identified within the study area, with the exception of central California coast coho salmon and central California coastal steelhead, which are discussed in the Special Status Species and Sensitive Natural Communities section.

3.16.3 Environmental Consequences

3.16.3.1 No Action Alternative

None of the proposed improvements would occur under the No Action Alternative. Existing maintenance activities would continue, and may include asphalt patching, ditch clearing, and repairing or cleaning culverts, as needed. Generally, maintenance activities are anticipated to stay within the existing pavement surface. However, ditch clearing and culvert maintenance could impact vegetation, including wetlands and waterbodies, within the project area. These impacts could directly or indirectly affect general wildlife and aquatic species. Implementation of standard BMPs, such as timing restrictions and construction during the dry season, are anticipated to minimize any potential impacts. Therefore, the No Action Alternative is expected to have slight or minimal adverse impacts to wildlife and aquatic species.

3.16.3.2 Action Alternative

The Action Alternative would include vegetation and tree removal, and in-stream habitat disturbance due to culvert replacements. Based on conceptual design, the estimated total for permanent and temporary disturbances would be approximately 34 acres and 24 acres, respectively (see the Vegetation section for more detailed description of vegetation impacts). Vegetation removal would impact wildlife species through the removal of habitat for foraging, nesting, and/or breeding. The Action Alternative would also add between 4.3 and 6.0 acres of impervious surface due to increased pavement width and paved ditch sections. Design is still in the preliminary stages and the impact estimates represent worst-case scenario. Refinements through the final design process are anticipated to lessen the quantity of impacts to vegetation in the study area. The increase in impervious surface could indirectly affect species through an increase in the velocity of stormwater runoff and increased sedimentation of surface waters, which can affect the function or size of aquatic habitat. Given the abundance of habitat within and directly adjacent to the study area, these direct and indirect impacts are not expected to substantially affect wildlife and aquatic species. In addition, a wider, consistent roadway width with improved sight distance could reduce the potential for wildlife collisions by allowing drivers additional time to identify and react to wildlife on the road.

Construction activities would result in short-term habitat degradation and could result in direct mortality to species, particularly for less mobile species. Noise, vibration, and visual intrusion may affect species' use of the area, although larger wildlife species are likely to avoid the area during construction and return following construction completion. Work within wetlands, streams, and drainages may have a short-term effect on aquatic species through increased erosion and sedimentation, particularly in Schooner Creek and East Schooner Creek. Within Schooner Creek, sheet piles would be installed at the outer edge of the existing culverts and used as a coffer dam. The area behind the sheet piles would be temporarily dewatered to allow installation of foundations, which would minimize potential sediment disturbance and distribution. The channel would be temporarily restricted to 16 feet (the narrowest width currently), but would be

14 feet wider than existing conditions following construction. Minimal excavation in the middle of the Schooner Creek channel would be required in order to remove the existing culverts, and excavation on the sides of the creek channel would be required to install riprap boulders. At East Schooner Creek, excavation would be required to remove the excess sediment from the existing culvert, and clearing and grubbing of vegetation would be required to install the proposed box culvert. While these actions may have short-term adverse effects to aquatic species, the Action Alternative is anticipated to have an overall long-term benefit to aquatic species. The natural drainage flow would be improved at both creeks by providing structures of adequate capacity and with natural stream bottoms, as well as removing excess sediment as needed, to facilitate aquatic species passage.

Conclusion

While the Action Alternative would permanently and temporarily impact wildlife and aquatic species habitat, with an abundance of habitat within and directly adjacent to the study area, the direct and indirect impacts of the Action Alternative are not expected to substantially affect general wildlife and aquatic species. In addition, temporary impacts to vegetation within the project area would be restored, and mitigation of permanent impacts to wetland and riparian habitat would be conducted. While short-term disruption of wildlife movement may occur during construction activities, the Action Alternative would not substantially alter species movement along potential wildlife corridors, such as riparian areas. The Action Alternative could temporarily alter the movement and migration corridors of aquatic species, specifically central California coast coho salmon and central California coast steelhead. However, the incorporation of avoidance, minimization, and mitigation measures are expected to reduce potential short-term, adverse impacts and, in the long term, the Action Alternative is expected to benefit fish habitat and passage. For further discussion of the potential effects to native resident or migratory fish, refer to the Special Status Species and Sensitive Natural Communities section.

3.16.4 Avoidance, Minimization, and/or Mitigation Measures

Numerous avoidance, minimization, and/or mitigation measures have been developed and described under the Wetlands and Other Waters of the U.S. and Special Status Species and Sensitive Natural Communities sections to reduce potential impacts to those wildlife and aquatic species. These measures would also be applicable to general wildlife and aquatic species, thereby reducing overall impacts.

3.17 Vegetation

This section describes general vegetation within the study area, as well as invasive plant species that can threaten natural vegetation. The study area used for this analysis generally encompasses the existing 60-foot-wide Marin County roadway easement. In certain locations, the study area is wider to accommodate proposed localized improvements, such as minor roadway realignment.

3.17.1 Regulatory Setting

NPS Management Policy 4.4.2 outlines management methods for native plants within the national park system. This policy calls for native vegetation to be left to natural processes. However, intervention to manage native species may occur only when it will not cause unacceptable impacts to the species or is required because human influence has adversely affected the population, or is needed to protect cultural resources and human health and safety, or to accommodate development or research, among others (NPS 2006a).

The spread of exotic or invasive species can directly affect native plant populations, and NPS Management Policy 4.4.4 directly deals with the management of such species. In general, the policy prohibits introduction of invasive species to parks and requires the management and removal of invasive species as deemed feasible and effective.

The Federal Noxious Weed Act (7 U.S. Code, Sections 2801–2813 and 7 CFR Part 360) addresses preventing the spread of noxious weeds and seeds across international borders and the transport of weeds within the United States on roadways. The Secretary of Agriculture designates which plants are noxious weeds, and coordinates with other federal, state, and local agencies, and private entities to control, eradicate, or prevent the spread of noxious weeds.

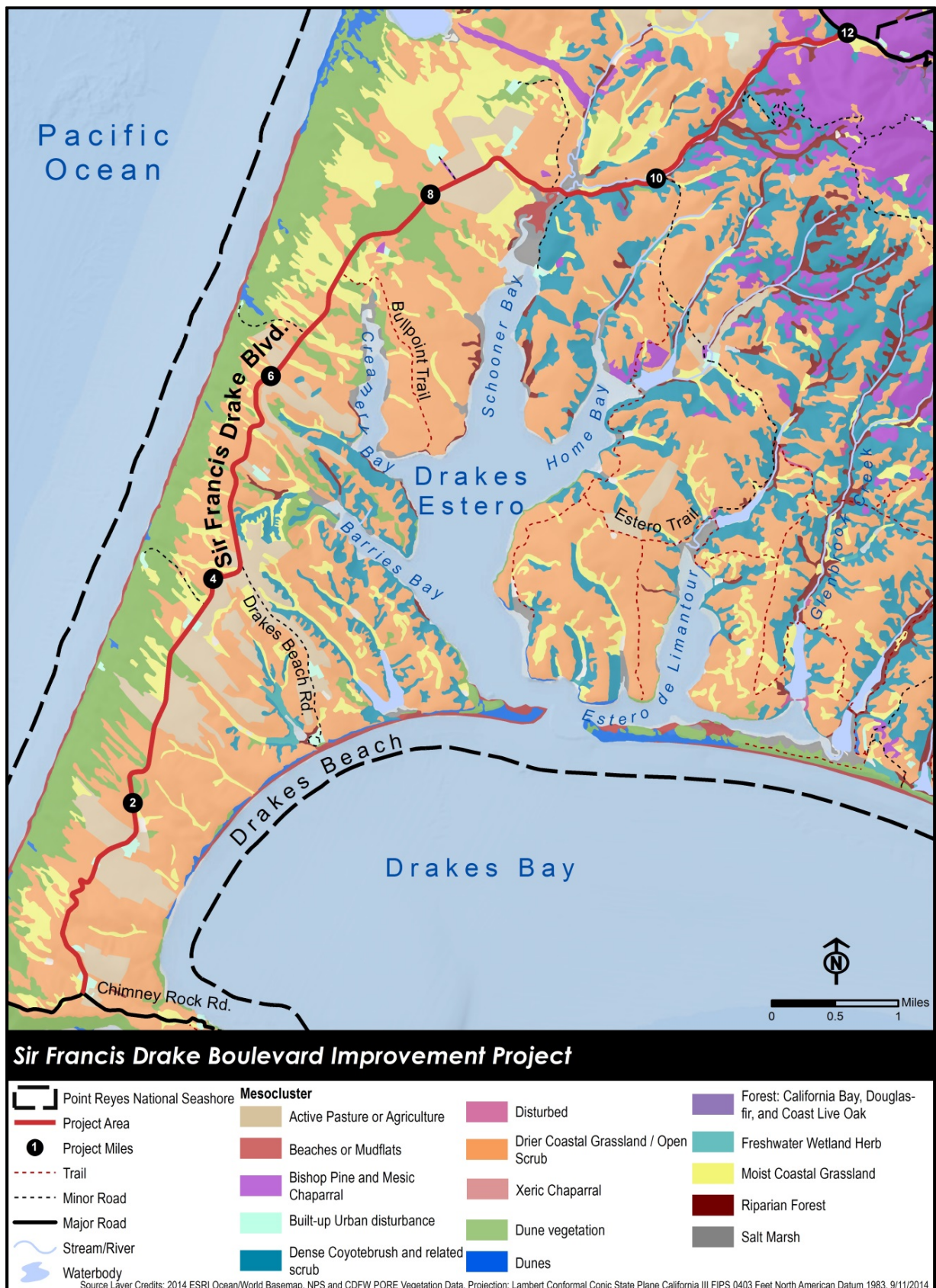
On a state level, the California Pest Prevention System addresses the exclusion, detection, eradication, management, and public education of pests, including noxious weeds. The Pest Prevention System is regulated by laws instituted by the California Department of Food and Agriculture (CDFA) and County Departments of Agriculture under the California Food and Agricultural Code (FAC). The FAC prioritizes over 130 species that are considered noxious weeds, and provides management directives based on the species designations.

3.17.2 Affected Environment

The study area transitions from riparian forest and chaparral to coastal scrub, coastal grassland, coastal dunes, and pastures as the road traverses west and south down the Point Reyes peninsula. Vegetation communities that occur within the study area, as grouped into broad vegetation types within the region, include dry coastal grassland/open scrub, active pasture, moist coastal grassland, riparian forest, dune vegetation, dense coyote brush scrub, Bishop pine and mesic chaparral, and salt marsh (see Figure 15) (Schirokauer et al. 2003). Almost half of the study area is comprised of dry coastal grassland and open scrub habitat. Common species in this community include coyote brush (*Bacharis pilularis*), California blackberry (*Rubus ursinus*), yellow bush lupine (*Lupinus arboreus*), checker mallow (*Sidalcea malviflora* ssp. *malviflora*), and wild oatgrass (*Avena* sp.).

Riparian forests, which occurs in the northern 2.5 miles of the study area, are influenced by East Schooner Creek, which drains parallel to the road and supports dense stands of arroyo willow (*Salix lasiolepis*), Pacific willow (*Salix lasiandra*), and red alder (*Alnus rubra*). Active pasture lands for dairy cattle begin west of the Schooner Creek road crossing with SFDB and are dispersed south through the study area to the SFDB and Chimney Rock Road intersection. The active pasture in the study area is extensively grazed by dairy cattle. Common species associated with pasture lands include hairgrass (*Deschampsia cespitosa*), California oatgrass (*Danthonia californica*), and California poppy (*Eschscholzia californica*). Interspersed throughout the drier grassland and active pastures is the moist coastal grassland, containing species such as bog rush (*Juncus effusus*), tufted hairgrass (*Deschampsia cespitosa*), slough sedge (*Carex obnupta*), and velvet grass (*Holcus lanatus*), and dune vegetation composed of species such as dune sagewort (*Artemisia pycnocephala*), goldenbush (*Ericameria ericoides*), and European beachgrass (*Ammophila arenaria*).

Figure 15: Vegetation Communities



Non-native plant species are widespread in the study area due to the history of disturbance from road construction, cattle grazing, and dairy farming. Dominant non-natives identified throughout the study area include, but are not limited to, velvet grass, iceplant (*Carpobrotus edulis*), European beachgrass (*Ammophila arenaria*), poison hemlock (*Conium maculatum*), and radish (*Raphanus sativus*). All of these species are also considered invasive by California Invasive Plant Council but are not considered noxious by CDFA (Cal-IPC 2014). Species identified in the study area that are currently labeled as noxious weeds include field bindweed (*Convolvulus arvensis*) and French broom (*Genista monspessuliana*). Both species are categorized as “C,” which is considered fairly widespread throughout the state (CDFA 2014). French broom was noted near PM 9 at the mouth of a stock pond. Field bindweed is also dispersed throughout the southern half of the study area within the grasslands.

3.17.3 Environmental Consequences

3.17.3.1 No Action Alternative

None of the proposed improvements would occur under the No Action Alternative. Existing maintenance activities would continue, and may include asphalt patching and ditch clearing. Generally, maintenance activities are anticipated to stay within the existing pavement surface. However, ditch clearing could impact vegetation within the project area. Implementation of standard BMPs, such as those for controlling invasive plant species, are anticipated to minimize any potential impacts. The No Action Alternative would have negligible to minimal adverse impacts to roadside vegetation.

3.17.3.2 Action Alternative

Construction of the Action Alternative would require permanent and temporary disturbance of vegetation in order to construct a consistent 24-foot-wide paved roadway, as well as implement localized improvements, such as realignment of the roadway within the flood-prone area. In addition, the Action Alternative would involve clearing and grubbing of vegetation adjacent to the roadway (between 3 feet and 12 feet from the proposed edge of pavement). Soil removal, grading, paving, trampling by equipment and personnel, and overall removal of habitat would adversely affect vegetation. Based on conceptual design, the Action Alternative would require the permanent disturbance of approximately 32 acres and temporary disturbance of 24 acres of vegetation (excluding existing urban disturbance; see Table 13). Design is still in the preliminary stages and the impact estimates represent a worst-case scenario. Refinements through the final design process are anticipated to lessen the quantity of impacts to vegetation in the study area.

Table 13: General Vegetation Impacts

General Vegetation Community	Acres Within Study Area	Permanent Impacts (acres)	Temporary Impacts (acres)
Active Pasture or Agriculture	15.0	5.1	3.4
Bishop Pine and Mesic Chaparral	1.4	0.3	0.5
Built-up Urban Disturbance	3.3	1.3	0.7
Dense Coyotebrush and Related Scrub	10.9	1.4	1.2
Drier Coastal Grassland/Open Scrub	51.1	14.9	11.2
Dune Vegetation	8.8	2.9	2.3
Moist Coastal Grassland	10.1	3.5	2.7
Riparian Forest ¹	10.4	4.0	2.4
Salt Marsh	0.8	0.3	0.4
TOTAL	111.8	33.7	24.8

¹ These impacts are based on PRNS and CDFW vegetation data and differ from riparian habitat delineated during field surveys, as discussed in the Wetlands and Other Waters of the U.S. section.

Increased sediment from disturbed soils and the potential release of pollutants from construction equipment can also damage or kill plants, or degrade habitats. Indirect impacts could include the introduction or spread of invasive weeds, surface and subsurface hydrologic alterations, erosion, and removal or reduction of a vegetation buffer between human and natural activities. The increase in impervious surface area could also indirectly affect vegetation through an increase in erosion and sediment runoff. In addition, increased impervious surfaces may contribute chemical runoff from the materials used to construct the road. Runoff may then affect vegetation near roadsides or aquatic vegetation.

Conclusion

The Action Alternative is expected to have both long- and short-term, adverse impacts to vegetation within the study area. However, the majority of vegetation impacts would occur to active pasture or agriculture and drier coastal grassland/open scrub vegetation communities, which are ample within the study area and PRNS as a whole. Ultimately, impacts to general vegetation are expected to be minimal following implementation of mitigation and/or restoration (as applicable), and no loss of plant populations or vegetation communities would occur. In addition, permanent impacts to general vegetation may also be accounted for through mitigation required for wetland, riparian, and California red-legged frog habitat impacts as discussed in the Wetlands and Other Waters of the U.S. and Special Status Species and Sensitive Natural Communities sections.

3.17.4 Avoidance, Minimization, and/or Mitigation Measures

The following measures will be implemented to minimize or mitigate impacts to vegetation and reduce the spread of invasive species. These measures are specific to the project area, which encompasses the project construction limits, and is slightly smaller than the study area used for the vegetation analysis.

- All vehicles and equipment entering the project area shall be clean of noxious weeds and free from oil leaks, and are subject to inspection. All construction equipment shall be washed thoroughly to remove all dirt, plant, and other foreign material prior to entering the project area. Particular attention shall be shown to the under-carriage and any surface where soil containing exotic seeds may exist. These efforts are critical to prevent the introduction and establishment of non-native plant species into the project area. Arrangements shall be made for inspections of each piece of equipment before entering the project, and records of inspections will be maintained. Equipment found operating on the project that has not been inspected or has oil leaks will be shut down and may be subject to citation.
- Certified weed-free permanent and temporary erosion control measures shall be implemented to minimize erosion and sedimentation during and after construction.
- CFLHD shall conform to the Federal Seed Act, the Federal Noxious Weed Act, and applicable state and local seed and noxious weed laws.
- Abandoned segments of roadway and temporarily impacted areas along SFDB within the project limits that would no longer be in use shall be reclaimed and revegetated. Degraded areas impacted from construction-related activity shall be replanted or reseeded with native plants from the watershed or nearby watershed under guidance from PRNS biologists. Shrubs, trees, and herbaceous perennials and annuals shall be seeded and planted along riparian corridors where impacts and vegetation removal occur. Riparian vegetation shall be replanted with shrubs or live-stakes along the banks of East Schooner Creek. CFLHD shall prepare a restoration plan for the project in consultation with PRNS for appropriate seed mixes and plants. Revegetated areas shall be protected and cared for, including watering when needed, until restoration criteria have been met under USACE permits, the USFWS

Biological Opinion, and/or NPDES standards. Revegetated areas shall be monitored in accordance with the approved restoration plan to ensure success criteria are met.

- In accordance with the NPDES permit, a REAP shall be developed prior to Notice to Proceed. The REAP shall be reviewed and structured to address project-specific actions that are needed to prevent pollutants from reaching waterways or wetlands during a rain event. The REAP shall be executed within 48 hours prior to a forecast rain event of 50 percent chance of precipitation or more.

3.18 Cumulative Impacts

Cumulative impacts are impacts that result from the incremental effect of a proposed action when added to other past, present, and reasonably foreseeable future actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time (40 CFR § 1508.7). The purpose of a cumulative effects analysis is to ensure that federal agencies consider the full range of the consequences of their actions when making decisions in order to move towards sustainable development (CEQ 1997).

FHWA guidance states that the degree to which cumulative impacts need to be addressed in an EA depends on the potential for the impacts to be significant, and will vary by resource, project type, geographic location, and other factors. The cumulative impact analysis should be commensurate with the potential for adverse impacts (FHWA n.d.). Therefore, only resources that are expected to experience long-term adverse impacts were assessed for cumulative impacts in this section. Those resources include:

- California red-legged frog
- Wetlands and Other Waters of the U.S.
- Transportation

Although impacts to sensitive natural communities may be adverse, they are not expected to be substantial or rise to the level of significance based on the minimal amount of impact expected and the implementation of revegetation methods following construction. The transportation topic was retained for cumulative analysis because adverse impacts are expected under the No Action Alternative, which is evaluated to provide a baseline for comparison. Other resources expected to experience adverse impacts under the Action Alternative were not included for cumulative impacts analysis because their effects would be reduced with the incorporation of avoidance, minimization, and/or mitigation measures, as previously described.

3.18.1 Regulatory Setting

The Council on Environmental Quality (CEQ) developed *Considering Cumulative Effects Under the National Environmental Policy Act*, which recommends identifying those resources that could experience cumulative impacts, and then determining the separate effects of past actions, present actions, the proposed action, and other future actions (CEQ 1997). CEQ notes that, “most often, the historical context surrounding the resource is critical to developing baselines” and supporting decision-making (CEQ 1997). This historical context is presented in the Affected Environment section, below.

Under Section 15355 of the CEQA guidelines, the term “cumulative impacts” refers to two or more individual effects that, when considered together, are considerable, or compound or increase other environmental impacts, as follows:

- The individual effects may be changes resulting from a single project or a number of separate projects.

- The cumulative impact from several projects is the change in the environment that results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.
- A cumulative impact consists of an impact that is created as a result of the combination of the project being evaluated together with other projects causing related impacts.
- The discussion of cumulative impacts shall...focus on the cumulative impact to which the identified other projects contribute rather than the attributes of other projects which do not contribute to the cumulative impact.

3.18.2 Affected Environment

Cumulative impacts are considered within geographic and temporal boundaries. To clearly understand the current condition of a resource, it must be viewed within its appropriate geographical context. The following study area boundaries were defined for each resource:

- California red-legged frog: Subwatersheds on the Point Reyes peninsula (Figure 16)
- Wetlands and Other Waters of the US: Same as California red-legged frog
- Transportation: SFDB from PM 0 to PM 12 and the roads and access points it serves

3.18.2.1 Current Health and Historical Context

As described in the Historic Resources section, Point Reyes' cool, moist climate, which provides near-ideal conditions for growing abundant grass and feed for dairy cows, attracted early American settlers in the 1850s. Abundant grass and forbs, a long growing season, and sufficient fresh water promised productivity well in excess of domestic need, and small dairy ranches proliferated. In 1857, a San Francisco law firm obtained title to over 50,000 acres on the Point Reyes peninsula, which they divided into a tenant dairy enterprise in 1866. The land was further subdivided into 33 ranches, which were named by letters of the alphabet. Each ranch had a similar layout that consisted of a house, milking yard, dairy house, horse barn, calf shed, pig pens, and other outbuildings as needed. Large milk barns were added later. Gum eucalyptus windbreaks were a common feature, but most were later replaced with Monterey Cypress trees. Portions of what is now SFDB were developed between 1857 and 1877 to connect the peninsula's tenant ranches. In 1874 a new road was constructed between Tomales Bay and Drakes Estero, near G Ranch (NPS 2014j, Leach-Palm et al. 2015).



Ranching operation adjacent to SFDB

Beginning in 1935, conservationists proposed purchasing the dairy properties to create recreational areas along the coast. In 1952, the NPS announced plans to establish Point Reyes National Seashore, which received strong opposition from private dairy owners. When PRNS was created in 1962, its enabling legislation provided for retention of ranches in a designated pastoral zone. Ranchers signed 25-30 year reservations of use and occupancy leases, and special use permits for cattle grazing (Leach-Palm et al. 2015, NPS 2014j). These ranching operations continue to this day.

Transportation

Early dairy production was shipped via schooners that stopped at several landings on the Point Reyes peninsula. Rudimentary roads connected the ranches to each other and the piers. A wagon road connected the ranches to the southern end of Point Reyes, generally following the route of SFDB from G Ranch southwest. In the 1870s the road system expanded to support the lighthouse at the southern end of the point (Leach-Palm et al. 2015).

The introduction of the North Pacific Coast Railroad in 1875 to Point Reyes Station furthered the necessity for roads. Marin County adopted a portion of what is now SFDB from Tomales Bay through Inverness and down to the point, and dairies were able to use the combination of road and railroad to move their butter to market. Increasing numbers of automobiles caused the county to pave the road in the 1920s and adopt the current route between G Ranch and Pierce Point Road. As the dairies transferred from butter production to liquid milk production between 1919 and 1956, the road became an increasingly important link to market (Leach-Palm et al. 2015).

Growth of Inverness and the increasing use of the railroad for transportation encouraged further road development at Point Reyes. By 1916 the road from Inverness had been improved as far as G Ranch and the future site of the RCA receiving station, located northeast of F Ranch. The road was paved in the 1920s and rerouted around the core of the F Ranch. Residents requested road improvements from G Ranch to the Point Reyes Lighthouse in 1924, and a bond was passed in 1925 to build a permanent road. Road construction quickly ensued, and by 1931 the road that is now SFDB took on its current alignment (Leach-Palm et al. 2015).

Grade modifications occurred in 1988 along SFDB near PM 9, as well as along a 0.2-mile section slightly north of that area. Another section of SFDB from approximately PM 4 to PM 8 received a surface treatment in 2006. The road surface in this area is not smooth, but is in better condition than other sections of SFDB. However, cracking is beginning to appear within this section (Jacobs n.d.).

The park began implementing a lighthouse shuttle bus system in 1998 due to high levels of visitation and congestion on SFDB during whale watching season. The shuttle typically begins operating at the end of December and continues through mid-April. Bus service is provided from Drakes Beach directly to the Point Reyes Lighthouse parking lot. During this time, SFDB is closed to private vehicles at the junction of SFDB and South Beach from 9:00 a.m. to 5:30 p.m. on Saturdays, Sundays, and federal holidays (NPS n.d.b).

Recreation

Visitation to PRNS was 411,300 in 1966; that number grew steadily over time, with more than 2.5 million visitors in 2013. PRNS provides a variety of opportunities, from passive recreation like bird watching and wildlife viewing to more active opportunities like hiking. Three visitor centers, four backcountry campgrounds, and a system of trails and access to beaches and boating were developed (NPS 2003). Although these facilities and park recreationists contribute some level of impact to the park's natural resources, establishment of PRNS also protects these resources from the more detrimental effects of urban development.



Figure 16: Subwatersheds



California Red-Legged Frog

Impacts to natural resources occurred as Marin County became more populous and ranching proliferated on the peninsula. California red-legged frog populations decreased substantially due to habitat loss and degradation (USFWS 2002). California red-legged frog populations historically were common along the Pacific coast from PRNS to Mexico and inland. It is estimated that this subspecies currently occupies only 25 to 30 percent of its historical range (USFWS 2004b, CDFW 2002). The California red-legged frog was listed as threatened under the FESA in 1996 (61 FR 25813) and is a California Species of Special Concern (USFWS 2002, CDFW 2011). Primary threats include agriculture, urbanization, mining, overgrazing, recreation, timber harvesting, non-native plants, impoundments, water diversions, degraded water quality, use of pesticides, and introduced predators (USFWS 2002, USFWS 2010b, USFWS 2004). Although the species distribution has decreased throughout California over the past two centuries, some thriving populations still exist. PRNS contains one of the largest populations of California red-legged frog. Large numbers of frogs have been found in PRNS in Olema Marsh, Horseshoe Pond, and other waterbodies near Drakes Estero (USFWS 2002, Fellers & Guscio 2002). Creation of stock ponds and other impoundments is also likely a reason for increased populations on the peninsula over the past 100 years (Fellers & Kleeman 2007).



Wetlands and Other Waters of the U.S.

PRNS has “a long history of water quality problems due to its proximity to urban and rural land uses.” Internal sources of pollutants from recreational practices and land uses that were grandfathered in with the creation of PRNS “continue to be problems.” The park’s numerous ranches, dairies and pasture lands contribute to water quality degradation due to excessive nutrient enrichment from feces and runoff. In areas of concentrated agricultural operations, cattle grazing occurs on wet meadow habitats and is a source of sediment, nutrients, and pathogens in many portions of the park. Extremely high fecal coliform concentrations have been documented in streams adjacent to existing dairy operations within PRNS. Dairies and ranching are also associated with impacts to wetland and riparian process, and horse stables are the source of elevated nutrients and copper. Septic leach fields have been identified as nutrient sources in some areas (Pauley and Lay 2013).

Livestock Grazing

The NPS permits continued livestock grazing within the study area. Grazing and trampling by cattle typically occur outside the road’s fenced county right-of-way, and has altered the park’s ecosystems. Past overstocking and 200 years of grazing have contributed to the loss of soil-stabilizing vegetation and have compacted soils, resulting in increased runoff, erosion, and sedimentation, restricted plant rooting depth, and water infiltration. These impacts add to natural erosion processes caused by the park’s extreme coastal weather. Increased erosion and eutrophication of down-gradient aquatic habitats can make them less suitable for federally-listed marine and anadromous species. The NPS works with ranchers to minimize these impacts, particularly erosion, by ensuring that a minimum of residual plant material remains in grazed areas, which provides organic matter, shelters seedlings from sun and wind, slows runoff, enhances infiltration, and provides soil protection (National Parks Conservation Association 2009).

In 2001, the NPS consulted with the USFWS to prepare a Biological Assessment (BA) to review the proposed renewal of livestock grazing permits for areas managed by the park. The BA described potential effects of cattle grazing on special status plant and animal species. The

assessment concluded that most of the special status animals are not subject to impacts by grazing, while some plant species that occur in grasslands are. The BA recognized the compatibility of grazing with preservation of many special status species (NPS 2014k).

3.18.2.2 Present and Other Reasonably Foreseeable Future Actions

Road Maintenance

SFDB continues to be maintained by Marin County. The road shows signs of frequent patching over damaged pavement (Jacobs n.d.). The NPS creates a corridor of defensible space along SFDB by managing grasslands through prescribed burning (NPS 2004).

In cooperation with CFLHD, the NPS developed a plan/EA to repair 22 miles of roads and adjacent parking areas in PRNS. This plan includes Lighthouse Road and Chimney Rock Road, which are both accessed via SFDB at the southern end of the study area. The plan also addresses pavement preservation on various spur roads and parking areas within PRNS. The purpose of the plan is to restore the structural integrity of park roads to ensure safe driving conditions for visitors, provide efficient parking space, reduce road-related drainage problems, and reduce long-term road and parking area maintenance needs and costs. The roads and connected parking areas are in very poor condition and are deteriorating at an accelerated pace. These roads were originally unimproved dirt roads that were chip sealed and have never undergone major rehabilitation. The park has conducted partial and temporary repair projects over the years to keep the roads and parking areas operational. Most construction work would be limited to the existing road and parking area prisms and drainage ditches. Work on the culverts, pullouts, and road approaches may disturb vegetation and soil outside the existing roadway. However, construction boundaries would be established to help minimize the size of disturbed areas. Equipment and material staging and storage, as well as construction vehicle turnarounds, would be confined to the road or parking areas. Construction activities would be scheduled to avoid impacting sensitive species. Other best management practices would also be employed to help avoid or minimize impacts (NPS 2014m).

Recreation

Recreation-related activities within the study area include boating, camping, fishing, day/picnic use, hiking, and horseback riding, which create varying degrees and types of disturbances to both plant and animal species. Recreation-related activities are anticipated to continue for the foreseeable future within PRNS and along the project area.

Comprehensive Ranch Management Plan

The NPS is currently developing a Ranch Comprehensive Management Plan for the working beef and dairy ranches within the Seashore. The purpose of the plan is to establish a framework for management of existing ranch lands under lease/permits with terms up to 20 years. The plan will evaluate potential activities to ensure they are consistent with the protection of park resources. The plan will also consider actions that address wildlife, vegetation, and other specific issues, and protect sensitive and rare natural resources (NPS 2014j).

Habitat Restoration

The park's Coastal Restoration Crew coordinates removal of invasive plant species from North Beach and the lighthouse areas, which are adjacent to SFDB, as well as Abbott's Lagoon, which is north and west of the road. These efforts are conducted to protect many threatened and endangered animals, including the California red-legged frog and Myrtle's silverspot butterfly. The park's Riparian Habitat Restoration efforts focus on the health and diversity of stream and creek ecosystems to protect the California red-legged frog, endangered trout and salmon, and the plant communities that support them (NPS n.d.c).

Climate Change

The California Ocean Protection Council established the Sea Level Rise (SLR) Task Force of the Coastal and Ocean Working Group. The council adopted statewide SLR projections that allow all state agencies to plan for future SLR with the same assumptions. The Ocean Protection Council adopted statewide SLR values for the predicted average SLR and potential range of SLR for the years 2030 and 2050, shown in Table 14 (Caltrans 2011).

Table 14: Projected Sea Level Rise in California

Year	Average SLR	SLR Range
2030	7 inches	5-8 inches
2050	14 inches	10-17 inches

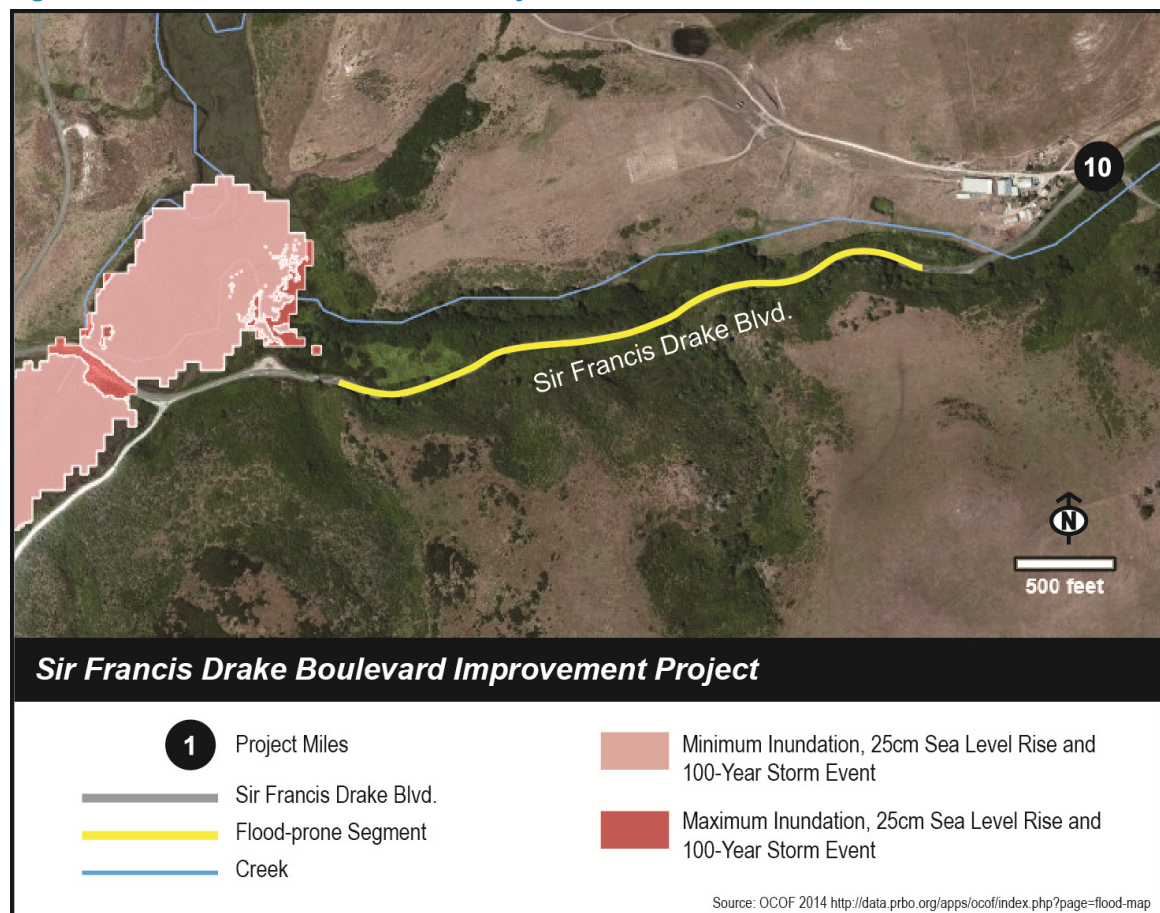
Note: Based on year 2000 as baseline.

Source: Caltrans 2011

Figure 17 shows the minimum and maximum flooding inundation possible related to projected sea level rise in the area of Schooner Creek using an estimated sea level rise of 25 centimeters (approximately 10 inches) and a 100-year storm event (OCOF 2014).

PRNS is expected receive increased rainfall, more intense and frequent El Niño events, and a rise in sea surface temperature as a result of climate change (NPCA 2009). Climate change and sea level rise may “significantly alter coastal processes and nearshore ecosystem function” (NPS 2007d). Rising sea level is expected to cause inundation of wetlands and estuaries, reduced nesting opportunities for birds, and detrimental effects on species that depend on the intertidal zone. Species currently inhabiting the park could be forced to relocate. Changes in sea temperature could also result in the collapse of food webs (NPCA 2009).

The NPS has started a planning process to adapt the parking and visitor access facilities at the Ken Patrick Visitor Center at Drakes Beach to accommodate potential impacts of sea level rise. The footprint of the parking area at the visitor center, which was constructed in 1965, accommodates 410 vehicles within approximately five acres. Alternatives may consider reduction in the parking area footprint, development of satellite overflow parking areas, and operation of a local shuttle on heavy use days (NPS 2014l).

Figure 17: Flood Potential Related to Projected Sea Level Rise

Source: OCOF 2014

Wetlands

California has enacted legislation to address loss of wetlands in the state, and has much broader jurisdiction to regulate water resources than the federal government. California's 1993 Governor's Executive Order W-59-93 (i.e., the "California Wetland's Policy") requires "no net loss of wetlands" (CRWQCB 2006). This policy was enacted to "ensure no overall net loss and achieve a long-term net gain in the quantity, quality, and permanence of wetlands acreage and values in California" (CNRA 1998).

3.18.3 Environmental Consequences

The environmental consequences of the No Action Alternative and the Action Alternative on individual resources are presented throughout this EA/IS. Included below are the overall cumulative impacts that may be anticipated when the effects of the alternatives are combined with other past, present, and reasonably foreseeable future actions.

3.18.3.1 No Action Alternative

California Red-Legged Frog

Under the No Action Alternative, existing maintenance activities would continue, which could impact California red-legged frogs and their habitat within the study area. Implementation of standard BMPs would minimize any potential impacts. Therefore, the No Action Alternative is expected to have minimal adverse impacts to the frog. Large numbers of California red-legged frogs, including some thriving populations, now live in the park, despite dramatic population

decreases previously and elsewhere. However, the past detrimental effects that led to the species becoming federally listed, as well as the expected impacts of climate change, would result in ongoing adverse impacts. When combined with the past and potentially future adverse effects to the frog, as well as the beneficial actions being undertaken by the NPS, cumulative impacts would be adverse given the effects of past population declines.

Wetlands and Other Waters of the U.S.

Under the No Action Alternative, maintenance activities could result in impacts to jurisdictional and non-jurisdictional waters from the dredging of wetlands or other waters of the U.S. to remove sediment deposition, and could result in increased sedimentation from in-water work. Although the No Action Alternative is anticipated to have minimal adverse impacts to waters of the U.S. with implementation of BMPs, it would combine with the past effects of ranching operations on wetlands and waters of the U.S. As mentioned above, the park's numerous ranches contribute to water quality degradation due to excessive nutrient enrichment from feces and runoff, and cattle grazing that occurs on wet meadow habitats is a source of sediment, nutrients, and pathogens. Implementation of the park's habitat restoration activities are expected to have beneficial impacts to wetlands and/or other waters of the U.S. The coastal watershed restoration program in particular will benefit these resources. However, continued ranching operations would continue to counteract these benefits. In addition, sea level rise is expected to cause inundation of wetlands and estuaries, potentially changing the salinity of streams, and the past detrimental effects on wetlands and other waterbodies would continue to result in ongoing adverse effects. These impacts, as well as the expected impacts of climate change and continued ranching operations, would combine with the No Action Alternative to result in adverse cumulative impacts.

Transportation

Under the No Action Alternative, ongoing maintenance actions would continue. The current condition of SFDB would not be improved beyond the limits of routine and reactive maintenance, such as the past treatments described above. Implementation of the winter season shuttle would result in slight benefits to SFDB when combined with the maintenance actions under the No Action Alternative. However, these combined actions would continue to lead to long-term deterioration of the roadway due to a lack of more comprehensive improvements to SFDB.

Lighthouse Road and Chimney Rock Road, which are planned to be repaired under a separate plan/EA, are located at the southern terminus of SFDB (PM 0). The repairs to these roads would affect a small amount of roads on the Point Reyes peninsula, leaving SFDB – which is the only means of access to these roads – in a continually degrading state. When combined with the EA to address Lighthouse Road and Chimney Rock Road, the No Action Alternative would not further advance that EA's purpose to restore the structural integrity of park roads to ensure safe driving conditions for visitors, reduce road-related drainage problems, and reduce long-term road and parking area maintenance needs and costs. The road conditions on the peninsula would vary considerably. For similar reasons, the No Action Alternative would also not support the park's plans to adapt the parking and visitor access facilities at the Ken Patrick Visitor Center at Drakes Beach to accommodate potential impacts of sea level rise, as SFDB would remain in substandard condition compared to other improvements. The combination of these past, present, and reasonably foreseeable future effects would result in an overall adverse cumulative impact to transportation on the peninsula.

3.18.3.2 Action Alternative

Special Status Species

The Action Alternative may affect, and is likely to adversely affect, the California red-legged frog and designated critical habitat. The NPS is taking actions to protect the frog, as described above, and large numbers of California red-legged frogs now live in the park. However, the expected

impacts of climate change could result in detrimental effects on the species. When combined with the past and potentially future adverse effects to the frog, as well as the beneficial actions being undertaken by the NPS, cumulative impacts would be adverse given the effects of past population declines and changing climate conditions. However, implementation of avoidance and minimization measures is anticipated to reduce adverse effects to less-than-significant. The Action Alternative is not projected to add to an overall impact to this species.

Wetlands and Other Waters of the U.S.

The Action Alternative would permanently and temporarily impact wetlands and other waters of the U.S., although impacts are anticipated to be less than significant with implementation of compensatory mitigation at a ratio of 1.5:1 or higher. As mentioned above, wetlands and streams within PRNS have been adversely impacted primarily by past agricultural practices. Ongoing road maintenance actions may contribute slight releases of sediment into wetlands and waterways adjacent to the roadway. The past detrimental effects on wetlands and other waterbodies, as well as the expected impacts of climate change and continued ranching operations, would result in ongoing adverse impacts. Given the extent of these effects, cumulative impacts would continue to adversely affect wetlands and other waters of the U.S. This project would not contribute to an overall reduction of wetlands and waters of the U.S. after wetland mitigation is complete, and overall significant cumulative impacts would not result.

Transportation

Past routine and reactive maintenance, along with implementation of the winter season shuttle, would result in slight benefits to transportation when combined with the Action Alternative. In addition, the NPS plans to repair Lighthouse Road and Chimney Rock Road, which are reached only by SFDB given their location at the southern end of the park's namesake point. The Action Alternative would improve the condition of SFDB to these two other roads, creating a continuous and consistent road surface and driving experience. When combined with these improvements, the Action Alternative would further advance the NPS goal to restore the structural integrity of park roads to ensure safe driving conditions for visitors, reduce road-related drainage problems, and reduce long-term road and parking area maintenance needs and costs. All publicly accessed roads on the peninsula would achieve the same standard. For similar reasons, the Action Alternative would also support the park's plans to adapt the parking and visitor access facilities at the Ken Patrick Visitor Center at Drakes Beach to accommodate potential impacts of sea level rise. Combining these impacts with the beneficial effects that are expected under the Action Alternative would result in beneficial cumulative impacts to transportation on the peninsula.

3.18.4 Avoidance, Minimization, and/or Mitigation Measures

The Action Alternative would not result in significant cumulative impacts. Therefore, no additional avoidance, minimization, and/or mitigation measures are proposed.

CHAPTER 4: CEQA MANDATORY FINDINGS OF SIGNIFICANCE

This chapter contains an analysis of the impacts that may result from construction and implementation of the Action Alternative (described in Chapter 2) pursuant to CEQA. The basic purposes of CEQA are to (AEP 2015):

1. Inform governmental decision makers and the public about the potential, significant environmental effects of proposed activities.
2. Identify the ways that environmental damage can be avoided or significantly reduced.
3. Prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures when the governmental agency finds the changes to be feasible.
4. Disclose to the public the reasons why a governmental agency approved the project in the manner the agency chose if significant environmental effects are involved.

This document is a combined Environmental Assessment, as required by NEPA, and Initial Study, as required by CEQA. An initial study is prepared to determine whether the project may have a significant effect on the environment, which is defined under CEQA as a “substantial adverse change in the physical conditions that exist in the area affected by the proposed project.” If the Initial Study shows that there is no substantial evidence that the project may have a significant effect, the lead agency prepares a Negative Declaration. The analysis that follows is based on the affected environment described in Chapter 3, and adheres to the Environmental Checklist Form that comprises Appendix G of the *2015 CEQA Statutes and Guidelines*. The checklist is used to meet the requirements for an Initial Study (AEP 2015).

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
I. AESTHETICS: Would the project:				
a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<p>Scenic vistas within the study area include views of the Pacific Ocean. Please refer to Section 3.6, Visual and Aesthetic Resources, for a detailed description of affected environment.</p> <p>Less than Significant Impact. The widened road would not affect existing views of bays, wilderness areas, or the Pacific Ocean. Short-term construction impacts would result in slight visual changes by introducing views of construction equipment operations, dust, increased construction worker traffic, and construction signage, which could temporarily interfere with views of the ocean and wilderness. Park staff and visitors would have fleeting views of construction as they travel through the project corridor. Residents would view construction activities for a longer duration, but still on a temporary basis. Therefore, impacts to scenic vistas would be less than significant.</p>				
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p>The project is located within PRNS, which contains distinct landscape units and a visual character that transitions from densely vegetated, steep terrain to a rural landscape containing views of large expanses of pastureland and sparsely scattered agricultural buildings. SFDB is not a state scenic highway. Please refer to Section 3.6, Visual and Aesthetic Resources, for a detailed description of affected environment.</p> <p>Less than Significant Impact with Mitigation. The widened road would not require removal of the Monterey Cypress trees along the RCA Wireless Station access road, and no rock outcroppings or historic buildings would be affected. Although some vegetation would be removed, the roadway and majority of existing vegetation would remain dominant features overall. The Action Alternative would have a less than significant impact on scenic resources through the implementation of the following mitigation measures.</p> <p>Mitigation Measure VA-1: The area beyond the construction limits shall not be disturbed. Abandoned segments of roadway and temporary impact areas along SFDB within the project limits that would no longer be in use shall be reclaimed and revegetated. Degraded areas impacted from construction-related activity shall be replanted or reseeded with native plants from the watershed or nearby watershed under guidance from PRNS biologists. Shrubs, trees, and herbaceous perennials and annuals shall be seeded and planted along riparian corridors where impacts and vegetation removal occur. CFLHD shall prepare a restoration plan for the project in consultation with PRNS for appropriate seed mixes and plants. Revegetated areas shall be protected and cared for, including watering when needed, until restoration criteria have been met under USACE permits, the USFWS Biological Opinion, and/or NPDES standards. Revegetated areas shall be monitored in accordance with the approved restoration plan to ensure success criteria are met.</p>				

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
<p>Mitigation Measure VA-2: If fences within the existing SFDB easement need to be removed to accommodate construction, they shall be replaced in-kind at the edge of the road right-of-way. If distinctive fencing materials, such as wood rail fencing, are affected during construction, they shall be replaced in-kind and positioned to maintain the alignment of ranch cattle and human circulation patterns.</p> <p>Mitigation Measure VA-3: If historic markers are temporarily removed during construction, the contractor shall reinstall the marker at the right-of-way line.</p> <p>Mitigation Measure VA-4: If construction staging areas are located near ranch or farm residences, the contractor shall visually screen the staging area(s).</p>				
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p>To assess potential impacts to the visual character or quality of the project corridor and its surroundings, four viewpoints (i.e., key observation points) were selected to represent the existing visual quality of the study area. Please refer to Section 3.6, Visual and Aesthetic Resources, for a detailed description of affected environment, including these key observation points.</p> <p>Less than Significant Impact with Mitigation. The overall visual quality rating for the four representative viewpoints analyzed in the study area would be slightly reduced or would experience no change, remaining moderately high. Visual quality reductions would be primarily related to slightly enlarged cut slopes and vegetation removal. The somewhat wider road would intrude on views of the natural landscape, but the improved roadway edge would be more defined, resulting in more intact views of the road. The roadway and vegetation would remain dominant features overall. With the incorporation of the mitigation measures described below, the Action Alternative would have a less than significant impact on the existing visual character and quality of the area.</p> <p>See Mitigation Measures VA-1 to VA-4.</p>				
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>No Impact. All construction would occur during daylight hours; therefore, no night lighting would be required during construction. Glare from construction equipment windshields would not be substantial and would occur on a short-term basis. No new lighting features or sources of glare would be added to the road.</p>				
II. AGRICULTURE AND FORESTRY RESOURCES: Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
<p>Please refer to Section 3.10, Farmlands, for a detailed description of affected environment.</p> <p>Less than Significant Impact. Approximately 0.01 acre of Prime and Unique Farmland and 0.75 acre of Statewide and Local Importance Farmland would be converted to non-agricultural use. Upon completion of the CPA-106 form, NRCS determined that the project's total corridor assessment score was a 66. FPPA regulations state that if the total corridor assessment score is less than 160, no further consideration for the protection of farmland is required.</p>				
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>The majority of the land adjacent to SFDB within the project limits is within the pastoral zone (NPS 1980). In addition, the study area is located on federal lands and, therefore, the Williamson Act does not apply.</p> <p>No Impact. The Action Alternative would not conflict with the PRNS pastoral zone designation because the small amount of land that would be taken would not affect the ability of dairy and beef cattle to graze in these areas or affect ranchers' permits or leases from the NPS.</p>				
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>No Impact. No land within the study area is zoned as forest land, timberland, or Timberland Production.</p>				
d) Result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>No Impact. There is no forest land within the project area and the proposed project will not result in the conversion of forest land to a non-forest use.</p>				
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
<p>PRNS contains numerous ranches where dairy and beef cattle are allowed to graze under permit or lease from the NPS (NPS 1980). Please refer to Section 3.10, Farmlands, for a detailed description of the affected environment. In addition, there is no forest land within the project area.</p> <p>No Impact. The proposed project consists of resurfacing, restoring, and rehabilitating SFDB in a manner that would closely follow the existing roadway in order to minimize impacts to the natural terrain. The proposed project will not involve other changes to the existing environment that could result in the conversion of Farmland to a non-agricultural use. However, as previously discussed, approximately 0.01 acre of Prime and Unique Farmland and 0.75 acre of Statewide and Local Importance Farmland would be converted to non-agricultural use. Because there is no forest land within the project area, the Action Alternative will not result in the conversion of forest land to a non-forest use.</p>				
III. AIR QUALITY: Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>Please refer to Section 3.12, Air Quality, for a detailed description of the affected environment.</p> <p>No Impact. Per the transportation conformity rule, this project is exempt (40 CFR 93.126 exempt projects) since only safety improvements are proposed and no additional travel lanes or increase in capacity are anticipated as a result of the Action Alternative. Therefore, the Action Alternative would not conflict with any air quality plans.</p>				
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p>The EPA has established federal standards for air quality criteria pollutants and BAAQMD has prepared CEQA air quality guidelines for use in impacts analysis. Please refer to Section 3.12, Air Quality, for a description of these standards and affected environment.</p> <p>Less than Significant Impact with Mitigation. Based on the roadway construction emissions model, emissions associated with construction of the Action Alternative are not anticipated to exceed the BAAQMD thresholds of significance for construction-related criteria air pollutants and precursors. Implementation of the mitigation measures below would reduce this impact to a less than significant level.</p> <p>Mitigation Measure AQ-1: Operators shall avoid leaving equipment and vehicles idling for more than five minutes when parked or not in use.</p> <p>Mitigation Measure AQ-2: The contractor shall control dust within the construction limits in accordance with FP-3 Section 158, FP-3 Section 312, and applicable state and federal regulations.</p>				

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
No Impact. Per the transportation conformity rule, this project is exempt (40 CFR 93.126 exempt projects) because only safety improvements are proposed and no additional travel lanes or increase in capacity are anticipated. Therefore, the Action Alternative would not result in a net increase of any criteria pollutants.				
d) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Sensitive receptors in the study area include ranch residences and PRNS. Please refer to Section 3.12, Air Quality, for a more detailed description of construction-related emissions. Less than Significant Impact. Emissions associated with construction of the Action Alternative are not anticipated to exceed the BAAQMD thresholds of significance for construction-related criteria air pollutants and precursors and would be short-term in nature. In addition, it is not anticipated that asbestos-containing materials would be encountered. However, per the requirements of Regulation 11, Rule 2 (Asbestos Demolition, Renovation, and Manufacturing), a written plan or notification of intent will be provided to the BAAQMD's Enforcement Division and Air Pollution Control Officer prior to commencing demolition of any structures (e.g., cattle under-crossings).				
e) Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Because the project is located within PRNS, it is sparsely populated. However, PRNS had more than 2.5 million visitors in 2013. Visitation at the park varies with the season, with the highest visitation occurring July through September. Less than Significant Impact. During construction, objectionable odors could be temporarily created through the use of diesel equipment. However, construction would be temporary and spatially dispersed; therefore, the impact would be less than significant.				
IV. BIOLOGICAL RESOURCES: Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
<p>Thirty-five special status species, including 13 birds, two fish, one amphibian, one reptile, one invertebrate, six mammals, and 11 plant species occur or have potential to occur within the study area. Please refer to Section 3.15, Special Status Species and Sensitive Natural Communities, for a detailed description of these species.</p> <p>Less than Significant Impact with Mitigation. The Action Alternative could directly affect special status species through mortality, harm, harassment, failed breeding attempts, and displacement from project-related impacts, such as increased sediment and surface runoff, release of pollutants from construction equipment, and loss or degradation of habitat. With implementation of mitigation measures listed below, it was determined that the Action Alternative may affect, but is not likely to adversely affect, or may impact individuals, but is not likely to result in a trend toward federal listing or loss of viability, to the majority of the species with potential for occurrence in the study area. However, the Action Alternative is likely to adversely affect California red-legged frog, but would also have less-than-significant impacts to this species through implementation of the mitigation measures described below. In addition, impacts to special status plant species, including the state-endangered Point Reyes meadowfoam, may be adverse, but are not expected to be substantial or rise to the level of significance based on the minimal amount of impact and the implementation of the mitigation measure listed below.</p> <p>Mitigation Measure BIO-1: Prior to construction, a qualified biologist shall lead Worker Environmental Awareness Training (WEAT) for all workers. The qualified biologist shall provide WEAT to all new workers prior to beginning work on the project. WEAT shall include, but is not limited to, identification of relevant biological resources (e.g., special status species that may be found in the project area) and an overview of conservation measures and avoidance and mitigation measures that are required during construction activities. Handouts summarizing information presented during WEAT and relevant contact information shall be provided to the workers. Upon completion of training, employees shall sign a form stating that they attended the training and understand all of the conservation and protection measures.</p> <p>Mitigation Measure BIO-2: All construction equipment shall be washed thoroughly to remove all dirt, plant, and other foreign material prior to entering the project area. Particular attention shall be shown to the under-carriage and any surface where soil containing exotic seeds may exist. These efforts are critical to prevent the introduction and establishment of non-native plant species into the project area. Arrangements shall be made for inspections of each piece of equipment before entering the project, and records of inspections shall be maintained by the contractor. Equipment found operating on the project that has not been inspected or has oil leaks shall be shut down and may be subject to citation.</p> <p>Mitigation Measure BIO-3: To further minimize the introduction or spread of invasive species or non-native plant species, the contractor shall: (1) cover fill material in haul trucks entering the park; (2) limit vehicle parking to existing roadways, parking lots, access routes or previously disturbed sites approved by PRNS; (3) obtain all sand, rock, gravel, and erosion-control materials from PRNS-approved sources that are free of weeds and non-degradable contaminants.</p>				

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
<p>Mitigation Measure BIO-4: Before clearing, grubbing, and grading, the contractor shall construct all erosion controls around the perimeter of the project area under construction, including filter barriers, diversion, and settling structures. The combined grubbing and grading operations shall be limited to 350,000 square feet of exposed soil at one time.</p> <p>Mitigation Measure BIO-5: The contractor shall ensure that food scraps and other trash from the project are deposited in covered or closed trash containers. The trash containers shall be removed from the project site at the end of each working day.</p> <p>Mitigation Measure BIO-6: CFLHD shall comply with the <i>California Stormwater BMP Handbook</i> (2009) specifically addressing procedures for the proper use, storage, and disposal of materials and equipment on temporary construction pads that minimize or eliminate the discharge of potential pollutants to a watercourse (NS-14 in handbook) and procedures to protect waterbodies from debris and wastes associated with structure demolition or removal over or adjacent to watercourses (NS-15 in handbook).</p> <p>Mitigation Measure BIO-7: Any spill of petroleum products, hazardous materials, or other chemical or biological products released from construction, fleet, or other support vehicles, or stationary sources shall be properly cleaned, mitigated, and remedied, if necessary. Response shall occur in accordance with federal, state, and local regulations. Any spill of petroleum products or hazardous material shall be reported to the appropriate federal, state, and local authorities, if the spill is a reportable quantity.</p> <p>Mitigation Measure BIO-8: The contractor shall repair leaks immediately on discovery. Equipment that leaks shall not be used. Oil pans and absorbent material shall be in place prior to beginning work. The contractor shall be required to provide the “on-scene” capability of catching and absorbing leaks or petroleum product spills, including antifreeze from breakdowns or repair actions, with approved absorbent materials. A supply of acceptable absorbent materials at the job site in the event of spills, as defined in the SWPPP, shall be available. Sand and soil are not approved absorbent materials. Soils contaminated with fluids shall be removed, placed in appropriate safety containers, and disposed of according to state and/or federal regulations.</p> <p>Mitigation Measure BIO-9: The construction contractor shall use best management practices to prevent the discharge of equipment fluids. All equipment shall be stored, repaired, maintained, and fueled at least 65 feet away from waterways, wetlands, and riparian habitat. A plan for prompt and effective response to any accidental spills shall be developed prior to construction.</p> <p>Mitigation Measure BIO-10: Certified weed-free permanent and temporary erosion control measures shall be implemented to minimize erosion and sedimentation during and after construction.</p> <p>Mitigation Measure BIO-11: CFLHD shall conform to the Federal Seed Act, the Federal Noxious Weed Act, and applicable state and local seed and noxious weed laws.</p> <p>Mitigation Measure BIO-12: Herbicides and pesticides shall not be used within the project construction limits.</p>				

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
<p>Mitigation Measure BIO-13: Tree and vegetation removal shall not occur February 1–August 1 between PM 10 and PM 12 to avoid the primary nesting season for northern spotted owl. In addition, tree and vegetation removal shall not occur between March 15 and August 1 for the entire project area for birds protected under MBTA and special status bat species.</p> <p>Mitigation Measure BIO-14: If any vegetation removal activities are scheduled February 1–August 1 between PM 10 and PM 12 or March 15–August 1 for the remainder of the project corridor, a nest and roost survey shall be conducted no more than three days prior to construction to identify any active nests and roosts. Breeding and nesting behaviors shall be recorded and nest locations shall be documented using a Global Positioning System (GPS). Prior to conducting presence/absence surveys, biologists shall consult with PRNS for information on these species (i.e., known location, recent sightings, or presence of any tracked individuals near the project area).</p> <p>Mitigation Measure BIO-15: If active migratory birds or raptor nests are identified during the nesting season, a no-disturbance buffer shall be established around the nests. The extent of the no-disturbance buffers shall be determined by a wildlife biologist in consultation with CDFW or PRNS staff, and shall depend on the level of noise or construction disturbance, line of sight between the nest and the disturbance, ambient levels of noise and other disturbances, and other topographic or artificial barriers. The purpose of the buffer is to avoid disturbance or destruction of the nest until after the breeding season, or until a wildlife biologist determines that the young have fledged (usually late June to middle July). Within this buffer, construction activities shall be avoided during the identified species nesting season. However, construction activities can proceed if the biological monitor determines that the individual is not likely to abandon the nest during construction.</p> <p>Mitigation Measure BIO-16: No man-made structures that could provide substrate for bat roosting shall be removed. Prior to any tree removal, a qualified biologist shall conduct a habitat assessment for any potentially suitable bat habitat within the trees to be removed. If no suitable habitat is identified, then avoidance for the species has been achieved. If the survey reveals suitable bat habitat, and tree removal is scheduled between April 16 and August 31 and/or between October 16 and February 28, then bat presence/absence surveys shall be conducted prior to any tree removal. If presence/absence surveys are negative then avoidance has been achieved, and trees may be removed following the two-phased tree removal system. The two-phased removal system shall be conducted over two consecutive days. The first day, in the afternoon, limbs and branches are removed by a tree cutter using chainsaws only. Limbs with cavities, crevices or deep bark fissures would be avoided, and only branches or limbs without those features would be removed. On the second day, the entire tree is removed. If presence/absence surveys result in bat occupancy then the occupied trees shall only be removed from March 1–April 15 and/or August 31–October 15.</p> <p>Mitigation Measure BIO-17: A biological monitor shall be present on site to monitor for California red-legged frog during construction. The monitor shall be approved by the USFWS at least 15 days before construction begins. Credentials and experience must be supplied to the USFWS.</p>				

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
<p>Mitigation Measure BIO-18: A qualified biologist shall search all suitable habitat areas, including within 300 feet of any drainage or identified wetland within the project area, for California red-legged frogs prior to project activities each day and after rain events, and will be present on site during all project activities. The approved biologist shall have the authority to stop any work that may result in the take of any California red-legged frogs.</p> <p>Mitigation Measure BIO-19: Excavated steep-walled holes or trenches more than 1 foot deep shall be provided with one or more escape ramps constructed of earth fill or wooden planks at the end of each work day to assist with avoiding entrapment of wildlife. Escape ramps or covered open trenches would help prevent injury or mortality of wildlife resulting from falling into trenches and becoming trapped. Trenches shall be inspected for the presence of federally-listed species at the beginning of each workday by a designated person trained by the USFWS-approved biologist. This person will report daily during construction to the USFWS-approved biologist on the findings of these inspections and daily monitoring.</p> <p>Mitigation Measure BIO-20: For all activities occurring within the bed or bank of a drainage, daily construction monitoring by a qualified biologist shall be conducted.</p> <p>Mitigation Measure BIO-21: Construction shall only occur during daylight hours (1/2 hour after sunrise to 1/2 hour before sunset).</p> <p>Mitigation Measure BIO-22: No construction staging shall occur in wetlands.</p> <p>Mitigation Measure BIO-23: California red-legged frogs found within the project area shall be captured by the approved biologist and held for the minimum amount of time necessary to release them in a suitable habitat outside of the construction work area following proper protocol as described below. Suitable release sites shall be identified by the USFWS-approved biologist prior to the start of construction.</p> <ul style="list-style-type: none"> • All work that could result in direct injury, disturbance, or harassment of the individual animal must immediately cease. • California red-legged frogs shall be captured using nets or by hand. The biologist shall avoid reaching for the frog by the tail, head, or limbs. The duration of handling individuals shall be limited to the maximum extent possible. Captured adults shall be kept moist, cool, and in an aerated environment, such as a bucket containing a damp sponge or cloth, and periods of direct sun exposure shall be minimized. Time in captivity will be minimized to the extent practicable. • Individual animals will not be placed in positions/containers where they may physically contact other individuals. • Multiple captured California red-legged frogs shall not be released to the same location. • California red-legged frogs shall be located upstream or downstream (not more than ¼ mile) of the work area to the closest suitable habitat for their life cycle. Suitable habitat will be identified prior to the start of activities and shall be equivalent to the habitat (topography, exposure, vegetation) where the frog was found. The USFWS-approved biologist shall monitor any translocated animal until it is determined that the frog is not imperiled by predators or other dangers. 				

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<ul style="list-style-type: none"> Only USFWS-approved biologists for the project shall capture California red-legged frog. Soaps, oils, creams, lotions, repellents, or solvents of any sort shall not be used on hands within two hours before and during periods when they are capturing and relocating animals. To avoid transferring disease (e.g., chytrid fungus) or pathogens between sites during the course of handling the animals, the biologists shall take appropriate measures to disinfect all equipment and clothing, such as those describing in the Declining Amphibian Population Task Force's Code. Pictures and GPS points shall be taken of the frog, the capture site, and the relocation site. Observations shall be recorded on California Natural Diversity Database field sheets and sent to CDFW. The USFWS shall be notified within one day of relocating individuals. <p>Mitigation Measure BIO-24: Any dewatering using pumps shall include screening not to exceed 0.2 inch mesh size. Pump intakes shall be placed in larger, perforated intake basins to allow water to be drawn into the pump while protecting aquatic organisms from entrainment. Both the outside of the intake basin and the pump intake shall be screened. The perforated intake basin shall be large enough to reduce the intake velocity so as not to impinge aquatic organisms on the screen.</p> <p>Mitigation Measure BIO-25: Ground-disturbing activities shall be restricted to the dry season at approximately PM 1.6–1.8, PM 4.2–4.3, PM, 8.5–10.1, and PM 10.5–10.6 to avoid the period when California red-legged frogs could be actively breeding and dispersing to riparian habitats. Restrictions include no work between October 15 and June 15 for aquatic breeding areas.</p> <p>Mitigation Measure BIO-26: Prior to any ground disturbance on the project site, wetland areas adjacent to the construction footprint shall be clearly delineated with orange-colored plastic construction fencing (environmentally sensitive area fencing), silt fencing, or solid barriers adjacent to prevent workers or equipment from inadvertently straying from the project area.</p> <p>Mitigation Measure BIO-27: Plastic mono-filament netting (erosion control matting) or similar material containing netting shall not be used at the project site as California red-legged frog or other animals may become entangled or trapped in it. Acceptable substitutes include coconut coir matting or tackified hydro-seeding compounds.</p> <p>Mitigation Measure BIO-28: California red-legged frogs may take refuge in cavity-like structures (e.g., pipes, culverts). To prevent entrapment, any materials stored for one or more overnight periods shall be either securely capped prior to storage or thoroughly inspected by the on-site biologist and/or the construction foreman for individuals before the structure is used. If individuals are found, protocols for handling and relocating individuals as outlined in the Mitigation Measure BIO-23 shall be followed.</p> <p>Mitigation Measure BIO-29: Work in Schooner Creek, East Schooner Creek, and unnamed drainages between PM 9 and PM 12 shall be conducted during no- to low-flow periods of the year (June 15 to October 15 or the first significant fall rainfall; i.e., 0.2 inches over a 24-hour period). For the remainder of the project corridor, culvert repair or replacement and associated work shall be completed during the dry season—typically between April 15 and October 15 or the first significant fall rainfall. All construction-related</p>				

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
<p>work within waterways that cross the project area shall be done in accordance with permit conditions.</p> <p>Mitigation Measure BIO-30: In accordance with the NPDES permit, a Rain Event Action Plan (REAP) shall be developed prior to Notice to Proceed. The REAP shall be reviewed and structured to address project-specific actions that are needed to prevent pollutants from reaching waterways or wetlands during a rain event. The REAP shall be executed within 48 hours prior to a forecasted rain event of 50% chance of precipitation or more.</p> <p>Mitigation Measure BIO-31: If a badger is observed within or near the project construction limits, construction shall stop and a PRNS biologist shall be notified. The biologist, in consultation with the Contracting Officer, shall determine an appropriate buffer distance and what construction activities can proceed.</p> <p>Mitigation Measure BIO-32: A qualified biologist shall perform surveys prior to construction to determine the presence or absence of any life-stage of Myrtle's silverspot butterfly. If any life-stage of Myrtle's silverspot butterfly is observed during pre-construction surveys, the USFWS shall be contacted before work activities begin for technical assistance and determination if additional protection measures are needed.</p> <p>Mitigation Measure BIO-33: A qualified botanist shall conduct preconstruction surveys of the construction limits for western dog violet plants prior to project implementation. Identified plant populations shall be marked prior to project construction for avoidance during construction. If a plant population(s) cannot be feasibly avoided, individual plants shall be relocated by a qualified botanist to a location adjacent to the project disturbance limits.</p> <p>Mitigation Measure BIO-34: If a seal or sea lion is identified within the project area, all work within 300 feet of the animal(s) shall be stopped and the contractor shall contact PRNS immediately. Work may resume once the seal or sea lion has left the project area or as approved by PRNS.</p> <p>Mitigation Measure BIO-35: Impacts to sensitive natural communities shall be minimized by designating Environmentally Sensitive Areas. Environmentally Sensitive Areas shall include each population of special status plants known to occur within the study area, as well as locations of sensitive natural communities. Annual and perennial plant populations shall be delineated separately to ensure that the proper revegetation or transplanting methods, as described in Mitigation Measures BIO-36 to BIO-39, are followed. Environmentally Sensitive Areas shall be delineated with flags or fencing prior to construction and shall be maintained by the contractor and the biological monitor throughout construction. The contractor shall avoid fenced Environmentally Sensitive Areas.</p> <p>Mitigation Measure BIO-36: Where Environmentally Sensitive Areas cannot be avoided, special status perennial plants with a Rare Plant Rank of 1, 2, or 4 shall be transplanted as appropriate. Perennial plants and their associated soil profiles shall be transplanted to adjacent areas outside of the impact zone, in close coordination with and guidance from PRNS ecologists. Prior to construction, seeds or cuttings shall be collected from perennial plants for propagation. Propagules shall be planted with the transplants to account for potential failure of transplants, as deemed necessary through coordination PRNS ecology staff.</p>				

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
<p>Mitigation Measure BIO-37: Where Environmentally Sensitive Areas containing Point Reyes meadowfoam (blooms March to May), Point Reyes Bird's-beak (blooms June to October), and woolly-headed spineflower (blooms May to August) cannot be avoided, these special status annual plants shall be reseeded in a suitable location within the project corridor at a 2:1 rate.</p> <p>Mitigation Measure BIO-38: Where permanent impacts and annual plant Environmentally Sensitive Areas overlap, seeds shall be collected. Therefore, seed shall be collected prior to construction initiation/bid letting or construction shall occur after the species has produced seeds (May through October depending on the species). Collected seeds shall be dispersed in an area equivalent in size to the original, and in an area appropriate for each species. If feasible, the reseeded area shall be adjacent to the current population. Reseeding efforts shall occur in close coordination with PRNS ecology staff.</p> <p>Mitigation Measure BIO-39: Where temporary impacts and annual plant Environmentally Sensitive Areas overlap, seed shall be collected prior to construction initiation/bid letting or construction shall occur after each species has had time to set seed (May through October, depending on the species). Collected seeds shall be stored for reseeded. After seed collection, the top six inches of soil shall be stockpiled and replaced in-kind post-construction. Collected seeds shall be dispersed in the same area and equivalent in size to the original. Reseeding efforts shall occur amid close coordination with PRNS ecology staff.</p> <p>Mitigation Measure BIO-40: Topsoil shall be conserved and separated from roadway excavation and embankment foundation areas. No topsoil shall be imported from outside PRNS and only conserved topsoil shall be used. All areas disturbed by earthwork or other construction activity shall have topsoil replaced, as required, within two weeks of completing slope finishing.</p> <p>Mitigation Measure BIO-41: Impacts to Point Reyes meadowfoam habitat shall be mitigated at a 2:1 ratio (created habitat to impacted habitat) to ensure the successful translocation of the species. The newly created habitat shall be monitored annually for five years during the height of the blooming season. To promote success of the mitigation, mowing within the newly created habitat as part of road maintenance or fire reduction shall occur after meadowfoam have set seed (typically occurs by June). A mitigation and monitoring plan shall be created and approved by CDFW, PRNS, and CFLHD prior to initiation of construction.</p> <p>Mitigation Measure BIO-42: Impacts to designated California red-legged frog critical habitat shall be mitigated in accordance with the terms and conditions of the USFWS Biological Opinion.</p> <p>See also Mitigation Measures VA-1, AQ-1, and AQ-2.</p>				

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p>Approximately 4.8 acres of riparian habitat is located in the forested portion of SFDB between PM 9 and PM 12. Sensitive natural communities within the study area include central dune scrub (located between PM 3 and PM 4), coastal terrace prairie (located at approximately PM 1), coastal and valley freshwater marsh (located at approximately PM 4, PM 9–10, and PM 12), and northern coastal salt marsh (located at approximately PM 9). Please refer to Section 3.13, Wetlands and Other Waters of the US, which has a more detailed description of riparian habitat. For a detailed description of the affected environment for sensitive natural communities, please refer to Section 3.15, Special Status Species and Sensitive Natural Communities.</p> <p>Less than Significant Impact with Mitigation. The Action Alternative would permanently impact 2.6 acres and temporarily impact 1.9 acres of riparian habitat. Impacts to riparian habitat would be less than significant through implementation of the following mitigation measure.</p> <p>Mitigation Measure BIO-43: CFLHD shall compensate for the permanent loss of jurisdictional features through purchase of mitigation credits at an approved wetland mitigation bank and/or creation of wetland and riparian compensatory mitigation. The replacement ratio shall be 1.5:1 (acres replaced to acres impacted) or higher, in accordance with permit terms and conditions. A mitigation and monitoring plan shall be developed for on-site restoration of temporarily impacted wetlands, on-site restoration of permanently and temporarily impacted riparian habitat, and mitigation of permanently impacted wetlands.</p> <p>Impacts to sensitive natural communities (ranging from between 0.10 acres and 0.45 acres of permanent impacts and 0.14 and 0.31 acres of temporary impacts) would be reduced to less than significant levels with implementation of the following mitigation measure.</p> <p>See also Mitigation Measure BIO-35.</p>				
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
<p>The study area contains nearly 16 acres of freshwater, estuarine, and drainage ditch wetlands that are protected by Section 404 of the Clean Water Act. For a detailed description of the affected environment, refer to Section 3.13, Wetlands and Other Waters of the U.S.</p> <p>Less than Significant Impact with Mitigation. Based on conceptual design, the Action Alternative would permanently impact approximately 4.4 acres of wetlands and temporarily impact approximately 4.9 acres of wetlands. Impacts to wetlands and other waters of the U.S. would be less than significant with implementation of the mitigation measures listed below.</p> <p>Mitigation Measure BIO-44: All material and debris generated as a result of project construction shall be removed from the site and disposed in an approved location outside of USACE jurisdiction.</p> <p>Mitigation Measure BIO-45: Concrete and asphalt piles shall be stockpiled outside and away from wetland resource areas, surrounded with fiber rolls, and covered with plastic.</p> <p>Mitigation Measure BIO-46: Temporarily impacted wetlands shall be restored on-site to pre-construction conditions through planting vegetation and hydroseeding with a native seed mix from the watershed or nearby watersheds under guidance from the PRNS biologists.</p> <p>Mitigation Measure BIO-47: The construction contractor shall use best management practices to prevent the discharge of equipment fluids. All equipment shall be stored, repaired, maintained, and fueled at least 65 feet away from waterways, wetlands, and riparian habitat. A plan for prompt and effective response to any accidental spills shall be developed prior to construction.</p> <p>See also Mitigation Measures VA-1, BIO-9, and BIO-29.</p>				
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p>Wildlife are likely to move along drainage and riparian corridors within the study area. However, no distinct native resident or migratory wildlife corridors have been identified within the study area, with the exception of central California coast coho salmon and central California coastal steelhead. There are no native wildlife nursery sites within the study area. For a discussion of known migratory corridors please refer to Section 3.13, Special Status Species and Sensitive Natural Communities.</p> <p>Less than Significant Impact with Mitigation. While short-term disruption of wildlife movement may occur during construction activities, the Action Alternative would not substantially alter species movement along potential wildlife corridors, such as riparian areas. The Action Alternative could temporarily alter the movement and migration corridors of aquatic species—specifically central California coast coho salmon and central California coast steelhead. However, the incorporation of the mitigation measures listed below would reduce potential short-term, adverse impacts to be less than significant levels. In the long-term, the Action Alternative is expected to benefit fish habitat and passage.</p>				

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
See Mitigation Measure BIO-29.				
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
No Impact. No local policies or ordinances apply to the study area.				
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
No Impact. No Habitat Conservation Plans or Natural Community Conservation Plans were identified within the study area.				
V. CULTURAL RESOURCES: Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p>The proposed project is located within three historic districts that are eligible for listing on the National Register of Historic Places and contain numerous contributing features. For a detailed description of the affect environment, please refer to Section 3.5, Historic Resources.</p> <p>Less than Significant Impact with Mitigation. CEQA defines a substantial adverse change in the significance of an historical resource as physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired. Cattle under-crossings would be replaced under the Action Alternative. These under-crossings are contributing elements to an eligible historic district within the APE (the under-crossings themselves are not individually eligible). The replacement structures would retain the general scale of the existing under-crossings, which would prevent introduction of new visual elements into the historic landscape. The under-crossings would continue to function consistent with their original intent. Therefore, replacement of these structures would result in no adverse effect to the Shafter-Howard Tenant Ranches Historic District, which would remain eligible for listing on the NRHP.</p> <p>Mitigation Measure HR-1: The corral at E Ranch shall be protected from inadvertent damage by placement of fencing or concrete barriers.</p> <p>Mitigation Measure HR-2: The contractor shall avoid disturbing trees within the B Ranch windbreak and their roots.</p> <p>Mitigation Measure HR-3: No construction staging shall occur at E Ranch corral, B Ranch windbreak, A Ranch main house, or B Ranch hay barn.</p> <p>See also Mitigation Measure VA-2.</p>				

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>No archaeological resources have been identified within the area of potential affect (APE). Only a small area of the project corridor (0.6%) has a high or very high potential for buried deposits.</p> <p>No Impact. In the area that has a high or very high potential for buried deposits, surface widening and paving is proposed, entailing less than one foot of vertical disturbance. This will not affect potentially buried resources because work would be conducted within the in the layer of previously disturbed sediments.</p>				
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
No Impact. No known paleontological resources or sites, or unique geologic features exist within the APE.				
d) Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
No Impact. No known human remains exist within the APE.				
VI. GEOLOGY AND SOILS: Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42?				
No Impact. The Action Alternative would not cross or be located in proximity to identified Alquist-Priolo Earthquake Fault Zones, and would not expose people or structures to adverse effects from fault rupture.				
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Less than Significant Impact. Several culverts and two cattle under-crossings would be replaced under the Action Alternative. The cattle under-crossings would be replaced with box culverts installed 2 feet below the existing ground surface. Because culverts are buried underground, they typically move with the earth during seismic events, particularly short				

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
culverts such as those within the study area. Therefore, the new culverts would not pose a substantial risk to people due to seismic activity.				
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<p>Less than Significant Impact. Marin County data indicates that soils in the study area have a low potential for liquefaction, with the exception of the area between PM 3 and PM 4, which has moderate liquefaction susceptibility. No improvements are proposed in this section of the study area other than resurfacing, restoring, and rehabilitating SFDB, which primarily consists of widening and repaving the roadway. No improvements to vertical alignments, slopes, or culverts would occur in this section, and no new structures, such as rockery walls, would be constructed. Because only minor changes to the roadway would occur in this section, the proposed action would not expose people and structures to the adverse impacts of liquefaction compared to existing conditions.</p>				
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<p>Less than Significant Impact. Hazards related to slope instability and landslides are generally associated with foothill areas and mountain terrain, as well as steep riverbanks. The study area is considered hilly with eroded drainages, sandstone outcrops and small valleys. However, the majority of the study area is in an area with few, if any, past landslides. Grading would be limited.</p>				
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p>Less than Significant Impact. Impacts to soils would result from roadway widening, paving existing pullouts, vegetation clearing, constructing cut and fill slopes and walls, and installing box and arch culverts. Impacts to soils, including soil erosion, effects on soil productivity, or the ability of the soil to support vegetation, would be minimal. Implementation of the following mitigation measures would reduce soil erosion potential to a less than significant level.</p> <p>See Mitigation Measure VA-1.</p>				
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<p>Portions of the study area pass through areas with soils that are considered expansive by the NRCS. Please refer to Section 3.9, Geology and Soils, for further description of soils within the study area.</p> <p>Less than Significant Impact. Geotechnical testing within the study area concluded that only one location had minimal swell potential; the remainder of the study area showed no swell potential. Incorporation of recommendations from the final geotechnical report prepared for</p>				

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
this project into project design minimizes the potential for adverse effects to less than significant levels.				
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
No Impact. The Uniform Building Code does not apply to this project.				
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
No Impact. The proposed project would not require the installation of a septic system or alternative wastewater disposal system.				
VII. GREENHOUSE GAS EMISSIONS: Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Less than Significant Impact. During construction, the Action Alternative would generate greenhouse gas emissions. Construction emissions would be temporary and would be generated due to the use of heavy equipment such as excavators, graders, dump trucks, cranes, and paving equipment. However, the Action Alternative would not increase the overall capacity of SFDB. Therefore, long-term effects are anticipated to remain unchanged from existing conditions.				
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
No Impact. The Action Alternative would not conflict with the greenhouse gas reduction goals set forth in California Assembly Bill 32. No other plans or policies related to greenhouse gas emissions are applicable to the project.				
VIII. HAZARDOUS MATERIALS: Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
For a detailed description of affected environment, refer to Section 3.11, Hazardous Materials.				

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
<p>Less than Significant Impact with Mitigation. Only one <i>de minimis</i> REC is located on sites within the study area. <i>De minimis</i> findings generally do not pose a risk that would be subject of an enforcement action. Construction materials used under the Action Alternative would be consistent with existing local, state, and federal regulations and would not create a significant hazard to the public or environment. Although unlikely, asbestos-containing materials could be encountered during demolition required for construction of crossings and culverts. With the implementation of the following mitigation measures, impacts would be less than significant:</p> <p>Mitigation Measure HM-1: Owners of subsurface utilities where excavation is to be conducted shall be contacted in order to assess whether any of the utilities are placed within Transite™ asbestos pipe. If subsurface utilities to be relocated are housed in Transite™ asbestos pipe, special handling, and possibly asbestos abatement, shall be required. Any disposal shall be conducted in accordance with local, state, and federal regulations.</p> <p>Mitigation Measure HM-2: Demolition would be required during construction for crossings and culverts. It is not anticipated that asbestos-containing materials would be encountered. However, per the requirements of Regulation 11, Rule 2 (Asbestos Demolition, Renovation, and Manufacturing), the contractor shall provide a written plan or notification of intent to the Bay Area Air Quality Management District's Enforcement Division and Air Pollution Control Officer prior to commencing demolition of structures.</p>				
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<p>Less than Significant Impact. Construction material usage under the Action Alternative would be consistent with existing local, state, and federal regulations and would not create a significant hazard to the public or environment. In accordance with the CWA, a Spill Prevention, Control, and Countermeasure (SPCC) Plan would be prepared and implemented to prevent the discharge of oil from a facility into navigable waters or adjoining shorelines.</p>				
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>No Impact. The proposed project is not located within one-quarter mile of an existing or proposed school.</p>				
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
No Impact. The proposed project is not located on a listed site pursuant to Government Code Section 65962.5. Therefore, the project would not create a significant hazard to the public or the environment.				
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
No Impact. The Action Alternative is not located within an airport land use plan or within two miles of a public airport. Therefore, the project would not result in a safety hazard for people residing or working in the study area.				
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
No Impact. The Action Alternative is not located within the vicinity of a private airstrip. Therefore, the project would not result in a safety hazard for people residing or working in the study area.				
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Less than Significant Impact. Construction of the proposed project would result in one lane of the road being closed during construction which could affect emergency vehicle response times. However, emergency vehicles would be permitted to pass through the study area during construction and road closures would be limited to 30 minutes. Therefore, impacts would be less than significant.				
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<p>The project area is located within an area designated by the California Department of Forestry and Fire Protection as a high fire hazard severity zone.</p> <p>Less than Significant Impact. Construction-related activities could increase the risk of wildfires in an area where residences and ranches are intermixed with wild lands. However, the project would adhere to the PRNS Fire Management Plan; therefore, impacts would be less than significant.</p>				

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
IX. HYDROLOGY AND WATER QUALITY: Would the project:				
a) Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p>None of the waters within the study area are located on the 303(d) list. The only waterbody within the study area that is identified in the <i>San Francisco Bay Basin (Region 2) Water Quality Control Plan</i> as having a beneficial use is Schooner Creek; however, no water quality standards are identified for the waterbody. For a more detailed description of affected environment, please refer to Section 3.14, Water Quality.</p> <p>Less than Significant Impact with Mitigation. As there are no site-specific water quality attainment standards applicable to the waterbodies within the study area, no water quality standards would be violated. In addition, the Action Alternative does not include waste discharge. Implementation of the Action Alternative would be consistent with the <i>San Francisco Bay Basin (Region 2) Water Quality Control Plan</i>.</p> <p>While existing beneficial uses of Schooner Creek may be temporarily impacted during construction, these uses would generally be improved or maintained in the long term. With implementation of the mitigation measures outlined below, the project would have less than significant impacts on water quality and would comply with the water quality objectives outlined in the <i>San Francisco Bay Basin (Region 2) Water Quality Control Plan</i>.</p> <p>Mitigation Measure WQ-1: All materials placed in watercourses shall be non-toxic. Any combination of wood, plastic, cured concrete, steel pilings, or other materials used for in-channel structures shall not contain coatings or treatments, or consist of substances deleterious to aquatic organism that may leach into the surrounding environment in amounts harmful to aquatic organisms.</p> <p>Mitigation Measure WQ-2: Temporary erosion control measures shall be maintained in working condition until the project is complete or the measures are no longer needed.</p> <p>See also Mitigation Measures BIO-4, BIO-6, BIO-7, BIO-8, BIO-9, BIO-12.</p>				
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<p>The study area contains numerous drainages, and SFDB traverses both Schooner Creek and East Schooner Creek. In addition, groundwater conditions in PRNS are not well documented, although groundwater seep wetlands are known to occur in the northern portion of the SFDB project corridor. The <i>San Francisco Bay Basin Water Quality Control Plan</i> does not identify the study area as being located within a groundwater basin. The project is also not within a FEMA-regulated floodplain, although seasonal flooding occurs each year in a portion of the project corridor adjacent to Schooner Creek. For a more detailed description of affected environment, please refer to Section 3.14, Water Quality.</p> <p>Less than Significant Impact. The addition of between 4.3 and 6.0 acres of impervious surface could permanently affect water quality within the study area by increasing the velocity and amount of stormwater runoff into the study area watershed. The additional impervious surface could also interfere with the rate of groundwater recharge. However, park legislation has curtailed development within PRNS, and the watershed contains ample pervious surface given the limited development. In addition, the coastal watershed assessment indicated impervious surface was a low stressor to subwatersheds that make up the PRNS watershed (Pawley and Lay 2013) and the study area is not located within an identified groundwater basin.</p> <p>The Action Alternative would also maintain or restore drainage patterns by upsizing culverts and, in one instance, moving a culvert to fit the natural drainage pattern. The removal of excess sediment at the existing East Schooner Creek culvert and replacement with an adequately sized box culvert is expected to restore hydrology in this area and, combined with roadway realignment and raising the elevation of the roadway, reduce flooding along this portion of the roadway.</p> <p>For these reasons, the increase in impervious surface is expected to have less than significant impacts to groundwater within the study area watershed; would maintain existing drainage patterns; and would not contribute to flooding on- or off-site, and would reduce flooding between PM 9.3 and PM 9.8</p>				
f) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
<p>Less than Significant Impact with Mitigation. As previously discussed, the increase in impervious surface could permanently affect water quality within the study area by increasing the velocity and amount of stormwater runoff into the study area watershed. In addition, construction activities, particularly work within Schooner Creek and East Schooner Creek, would temporarily increase stormwater runoff and sedimentation into surface waters. Short-term increases in turbidity would likely occur during proposed dewatering activities and soil disturbance adjacent to the roadway and waterways. However, with implementation of the mitigation measures outlined below, permanent and temporary adverse impacts to water quality would be less than significant.</p> <p>See Mitigation Measures BIO-4, BIO-6, BIO-7, BIO-8, BIO-9, BIO-12, WQ-1, and WQ-2.</p>				
X. LAND USE AND PLANNING: Would the project:				
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>No Impact. The Action Alternative primarily consists of resurfacing, restoring, and rehabilitating a 12-mile segment of SFDB in a manner that will closely follow the existing roadway, and would not physically divide an established community.</p>				
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>The project is located within a unit of the NPS, which controls the majority of the land surrounding SFDB. Although Marin County maintains an approximately 60-foot-wide easement that includes SFDB, the land in the project area is owned by NPS.</p> <p>No Impact. The proposed improvements would primarily follow an existing roadway easement that Marin County has for purposes of maintaining the roadway. Short sections of roadway may be realigned to avoid sensitive areas, which would convert those small sections of existing park land to transportation use. However, this conversion would be consistent with the park's general management plan (GMP) to improve auto access and transit service. The GMP identifies the majority of the project area as "Pastoral Landscape Management," which permits the continued use of existing ranchlands for ranching and dairying purposes. The proposed action would improve access to these ranchlands, and would therefore be consistent with the GMP.</p>				
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>No Impact. No Habitat Conservation Plans or Natural Community Conservation Plans exist within the study area.</p>				

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
XI. MINERAL RESOURCES: Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
No Impact. No mineral resources are known to exist within the project area; therefore, none would be affected.				
XII. NOISE: Would the project:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<p>Throughout the study area, residents are located approximately 25 feet to 225 feet from the nearest SFDB travel lane.</p> <p>Less than Significant Impact. Residents would be exposed to noise associated with project construction. However, no changes to noise levels would occur in the long term because the Action Alternative would not increase the overall capacity or substantially alter the alignment. In addition, construction would only be completed during the daylight hours.</p>				
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Less than Significant Impact. Groundborne vibration and groundborne noise levels are generally caused by impact devices such as pile driving, which is anticipated during construction. However, pile driving activities would only be conducted for the culverts at Schooner Bay/Creek crossing. No residents are located near this crossing. A pull-out and picnic area are located near the culverts. Due to the limited duration of construction activities at Schooner Creek and a construction schedule that avoids weekends, when visitation is highest, the impacts relative to groundborne vibration and noise would be less than significant.				
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
No Impact. This project would not significantly alter the vertical or horizontal alignment of the existing roadway, and no additional traffic lanes would be provided. Therefore, the proposed project would not result in permanent traffic noise increases or impacts.				

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<p>Throughout the study area, residents are located approximately 25 feet to 225 feet from the nearest travel lane.</p> <p>Less than Significant Impact with Mitigation. Residents would be exposed to temporary noise increases associated with project construction. Noise resulting from construction activities would depend on the different types of equipment used, the distance between construction noise sources and sensitive noise receptors, and the timing and duration of noise-generating activities. However, through implementation of mitigation measures listed below, impacts would be less than significant.</p> <p>Mitigation Measure N-1: Construction equipment shall have mufflers conforming to original manufacturer specifications that are in good working order and are in constant operation to prevent excessive noise or unusual noise.</p> <p>Mitigation Measure N-2: The contractor shall provide the construction schedule to residences within or adjacent to the construction limits and notify adjacent residences at least 48 hours in advance of construction work.</p> <p>See also Mitigation Measures AQ-1 and BIO-21.</p>				
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>No Impact. The proposed project is not located within the vicinity of a public or private airstrip. Therefore, the Action Alternative would not expose people residing or working in the study area to excessive noise levels.</p>				
XIII. POPULATION AND HOUSING: Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
The project area is in a unit of the national park system, where new home or business development is not permitted.				

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
No Impact. The road would be improved but not extended, and therefore would not indirectly induce growth.				
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
No Impact. Improvements to the roadway would not displace housing within the study area.				
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
No Impact. Improvements to the roadway would not displace anyone within the study area.				
XIV. PUBLIC SERVICES				
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
No Impact. The Action Alternative would not create or alter the need for new governmental facilities.				
XV. RECREATION				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
No Impact. The project would not increase capacity of the roadway and therefore would not increase use of parks or other recreational facilities. In addition, the project includes no development or expansion of recreational facilities.				
XVI. TRANSPORTATION/TRAFFIC: Would the project:				
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>The segment of SFDB within the study area is maintained by Marin County. However, this segment of SFDB functions as a park road in that it provides the only method of accessing some of the park's most visited attractions and, therefore, NPS <i>Management Policies</i> (2006) were considered in project design.</p> <p>No Impact. Per the NPS Management Policies 2006 for park roads, the road's construction would be improved, and the Action Alternative would be sensitive to natural and cultural resources, particularly the replacement of culverts that would restore fish passage. The improved road would "enhance the quality of a visit while providing for safe and efficient travel with minimal or no impacts on natural and cultural resources." In addition, the Action Alternative would support NPS road standards, as resurfacing and widening SFDB would "adequately support the planned volume and weights of vehicles [including the mandatory seasonal shuttle] without failure," and would address deficiencies that may be contributing to accidents. The new shoulders would more safely accommodate cyclists and keep them separate from traffic.</p>				
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
No Impact. No congestion management program exists for the study area.				

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
No Impact. The Action Alternative includes no measures that would change air traffic patterns.				
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
No Impact. The Action Alternative includes localized reconstruction and safety improvements to reduce the effect of existing hazards, such as flattening a vertical alignment, banking the roadway through a curve, and cutting back a side slope to improve driver safety and sight distance. The wider roadway would also better accommodate ranch equipment and trucks that currently occupy both travel lanes.				
e) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
No Impact. At least one lane of traffic will remain open on SFDB during construction, with a maximum 30-minute delay. However, emergency vehicles would be permitted to pass through the study area during construction without delay.				
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
No Impact. The Action Alternative would not conflict with any adopted policies, and would support the <i>NPS Management Policies 2006</i> as described above. In addition, the Action Alternative would provide a better surface and widened shoulders to more safely accommodate the park's seasonal shuttle bus and cyclists.				
XVII. UTILITIES: Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
No Impact. The Action Alternative would not produce wastewater and therefore would not exceed wastewater treatment requirements of the San Francisco Regional Water Quality Control Board.				
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
No Impact. The Action Alternative would not result in the construction of new water or wastewater treatment facilities or expansion of existing facilities.				
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Less than Significant Impact. Stormwater drainage improvements proposed under the Action Alternative include culvert replacement, culvert cleaning in place, and ditch reconditioning. The Action Alternative would maintain or restore drainage patterns by upsizing culverts and, in one instance, moving a culvert to fit the natural drainage pattern. The removal of excess sediment at the existing East Schooner Creek culvert and replacement with an adequately sized box culvert is expected to restore hydrology in this area. Replacement of the two existing culverts at Schooner Creek with an open bottom arch structure and increasing the channel width by 10 feet would also improve drainage and tidal dynamics. Additionally, several new catch basins would be constructed adjacent to the SFDB alignment within existing county easement. These impacts would be beneficial.				
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Less than Significant Impact. Water may be required for dust suppression during construction of the Action Alternative. The contractor would be responsible for acquiring water for the project.				
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
No Impact. The Action Alternative will not produce wastewater.				
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
No Impact. The project would be served by a landfill, which will be identified by the contractor, with sufficient permitted capacity to accommodate the project's solid waste disposal needs, and would comply with federal, state, and local statutes and regulations related to solid waste.				
g) Comply with federal, state, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
No Impact. Waste generated during the construction of the Action Alternative will comply with federal, state and local statutes and regulations related to soil waste disposal.				
XVIII. MANDATORY FINDINGS OF SIGNIFICANCE				
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Less than Significant Impact with Mitigation. As described in Section IV of this chapter, the Action Alternative has the potential to substantially impact a number of wildlife species and associated habitats, such as California red-legged frog and the species' designated critical habitat. However, all potential impacts from the Action Alternative would be mitigated to less than significant levels through implementation of the mitigation measures described throughout this chapter.				
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
No Impact. When combined with the past detrimental effects of development, contributions of the Action Alternative would not result in cumulatively considerable impacts. Large numbers of California red-legged frogs, including some thriving populations, now live in the park, despite previous dramatic population decreases within the park and elsewhere. Current and future actions being undertaken by the NPS to protect the California red-legged frog will result in beneficial effects to the species. While the Action Alternative would have an adverse effect to California red-legged frog, the implementation of avoidance and minimization measures and mitigation for habitat loss in accordance with the USFWS Biological Opinion would offset the impacts. Therefore, the Action Alternative would not cumulatively contribute to adverse effects to California red-legged frog, and overall significant cumulative impacts would not result. Other NPS restoration actions will have beneficial impacts to wetlands and/or other waters of the U.S., particularly the coastal watershed restoration program. The Action Alternative would not contribute to an overall reduction of wetlands and waters of the U.S. after wetland mitigation is complete, and overall adverse significant cumulative impacts are not anticipated.				

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
No Impact. The Action Alternative would result in beneficial impacts to ranchers who live and work within the study area, as well as park visitors and employees by creating a safer transportation route.				

CHAPTER 5: SECTION 4(f) PROPERTIES

5.1 Introduction

This chapter provides an evaluation of the SFDB project relative to Section 4(f) of the Department of Transportation Act of 1966 (49 U.S.C. 303) and its implementing regulations, jointly codified by FHWA and the Federal Transit Administration in March 2008 as a Final Rule at 23 C.F.R. Part 744.

Section 4(f) states that it is the policy of the federal government “that special effort should be made to preserve the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites” (49 USC 303). FHWA may not approve the use of a Section 4(f) property unless there is no feasible or prudent avoidance alternative and all possible planning to minimize harm has been included.

As defined in 23 CFR 774.17 and 774.15, where applicable and not excepted, the “use” of a protected Section 4(f) property can be classified as a direct use, a temporary occupancy, or a constructive use. In addition, a finding of *de minimis* impact can be made if the impact to a Section 4(f) property is determined to be minimal. These uses, including *de minimis* finding, are defined below.

- **Direct Use.** A direct use of a Section 4(f) property takes place when the land is permanently incorporated into a transportation facility.
- **Temporary Occupancy.** A temporary occupancy results in a use of a Section 4(f) property when there is a temporary impact to the Section 4(f) property that is considered adverse in terms of the preservationist purposes of the Section 4(f) statute.
- **Constructive Use.** Constructive use occurs when the transportation project does not incorporate land from a Section 4(f) property, but the project's proximity impacts are so severe that the protected activities, features, or attributes that qualify a resource for protection under Section 4(f) are substantially impaired. Substantial impairment occurs only when the protected activities, features, or attributes of the resource are substantially diminished.
- ***De minimis*.** A finding of *de minimis* impact may be made for historic sites when no historic property is affected by the project or the project will have “no adverse effect” on the historic property in question. For parks, recreation areas, and wildlife and waterfowl refuges, a finding of *de minimis* impact may be made when impacts will not adversely affect the activities, features, and attributes that qualify the resource for protection under Section 4(f). A *de minimis* impact finding may be made without the evaluation of avoidance alternatives typically required in a Section 4(f) evaluation.

The No Action Alternative does not have the potential to use any Section 4(f) properties and, therefore, is not discussed in this chapter.

5.2 Proposed Project

5.2.1 Project Purpose and Need

The purpose of the project is to restore the structural integrity of SFDB and enhance safety for all users while reducing ongoing maintenance requirements. The need of the project is driven by pavement deterioration, substandard roadway width, and flooding along SFDB. The need of the project is further described in Chapter 2.

5.2.2 Action Alternative

The Action Alternative primarily consists of resurfacing, restoring, and rehabilitating SFDB in a manner that will closely follow the existing roadway in order to minimize impacts to the natural terrain. In general, the Action Alternative would widen the roadway 1 to 6 feet to maintain a consistent 24-foot width with two 11-foot travel lanes and delineated 1-foot shoulders. The total pavement width would be 4 to 8 feet less than published guidelines⁹ (AASHTO 2011, NPS 1984). The proposed width is intended to allow much of the construction to occur within the existing roadway bench and the existing Marin County easement while providing a rehabilitated pavement section.

Roadway widening would include pulverizing the existing asphalt pavement, overlaying with 4 inches of asphalt pavement, striping, and ditch reconditioning (regarding with dense vegetation removal as needed). Paved ditches between 2 and 4 feet wide with asphalt curbs are proposed in specific areas to minimize cut slopes, which would minimize overall ground disturbance. Existing 15- and 18-inch culverts within the project area would generally be replaced with 24-inch culverts where feasible. At existing pullouts along the project corridor, a 5-foot asphalt apron (edge) would be added over the existing aggregate surface, and some pullouts would be resurfaced with aggregate. The clear zone, which is the area available for safe use by errant vehicles, would be improved through removal of obstructions, as feasible. The clear zone would vary between 3 feet wide and the AASHTO minimum design standard width of 12 feet in order to minimize ground disturbance.

The proposed improvements, including construction-related activities and staging areas, would generally occur within the existing 60-foot Marin County roadway easement. However, the easement may be shifted or expanded to accommodate some of the localized improvements. No right-of-way acquisition would be required. For further details about the Action Alternative, specifically areas of localized improvements, refer to Chapter 2.

5.3 Section 4(f) Properties

The study area used to identify Section 4(f) properties differed depending on the Section 4(f) property type. Parks and recreational resources were identified using PRNS as the boundary, while historic resources were identified generally using the 60-foot-wide county easement, with wider areas to accommodate proposed localized improvements. No wildlife or waterfowl refuges are located within PRNS and, therefore, were not considered.

The approximately 12-mile segment of SFDB proposed for rehabilitation under the Action Alternative is located entirely within PRNS. PRNS was established in 1963 by Public Law 87-657 with the purpose to “save and preserve, for purposes of public recreation, benefit, and inspiration, a portion of the diminishing seashore of the United States that remains undeveloped.” The seashore contains a rich agricultural history and several recreational resources that are directly accessible by SFDB. PRNS, along with individual historic and recreational resources, qualify for protection under Section 4(f) and are discussed further below. Recreational resources and the historical boundaries of ranches are shown on Figure 18. With the exception of the cattle under-crossings, contributors to historic districts are not shown on the figure due to their extensive and varied nature and, in some instances, lack of available mapping.

⁹ Referenced guidelines are based on AASHTO and NPS classifications for Sir Francis Drake Boulevard. The AASHTO classification is minor arterial. The NPS classification is public use park road with a class I principal park road/rural parkway with topography classification of rolling terrain

Figure 18: Overview of Section 4(f) Properties



5.3.1 Parks and Recreational Resources

PRNS encompasses approximately “71,046 acres of beaches, coastal cliffs and headlands, marine terraces, [and] coastal and upland forests” (Pawley and Lay 2013). It is a publically owned park and recreational resource that is managed by the NPS. The seashore provides a wide variety of experiences, including hiking, camping, visiting the beach, bird watching, and attending interpretive programs. The park is also a prime location for observing marine mammals, including northern elephant seals and whales.

SFDB functions as the primary access to PRNS. As discussed in Chapter 3, SFDB also provides direct access to the following recreational sites within PRNS:

- Point Reyes Beach North and South
- Point Reyes Lighthouse and Lighthouse Visitor Center
- Sea Lion Overlook
- Chimney Rock
- Historic Point Reyes Lifeboat Station
- Elephant Seal Overlook
- Drakes Beach
- Peter Behr Overlook
- Phillip Burton Wilderness Area
- Numerous trails, including Estero Trail and Bullpoint Trail



Chimney Rock shuttle bus stop

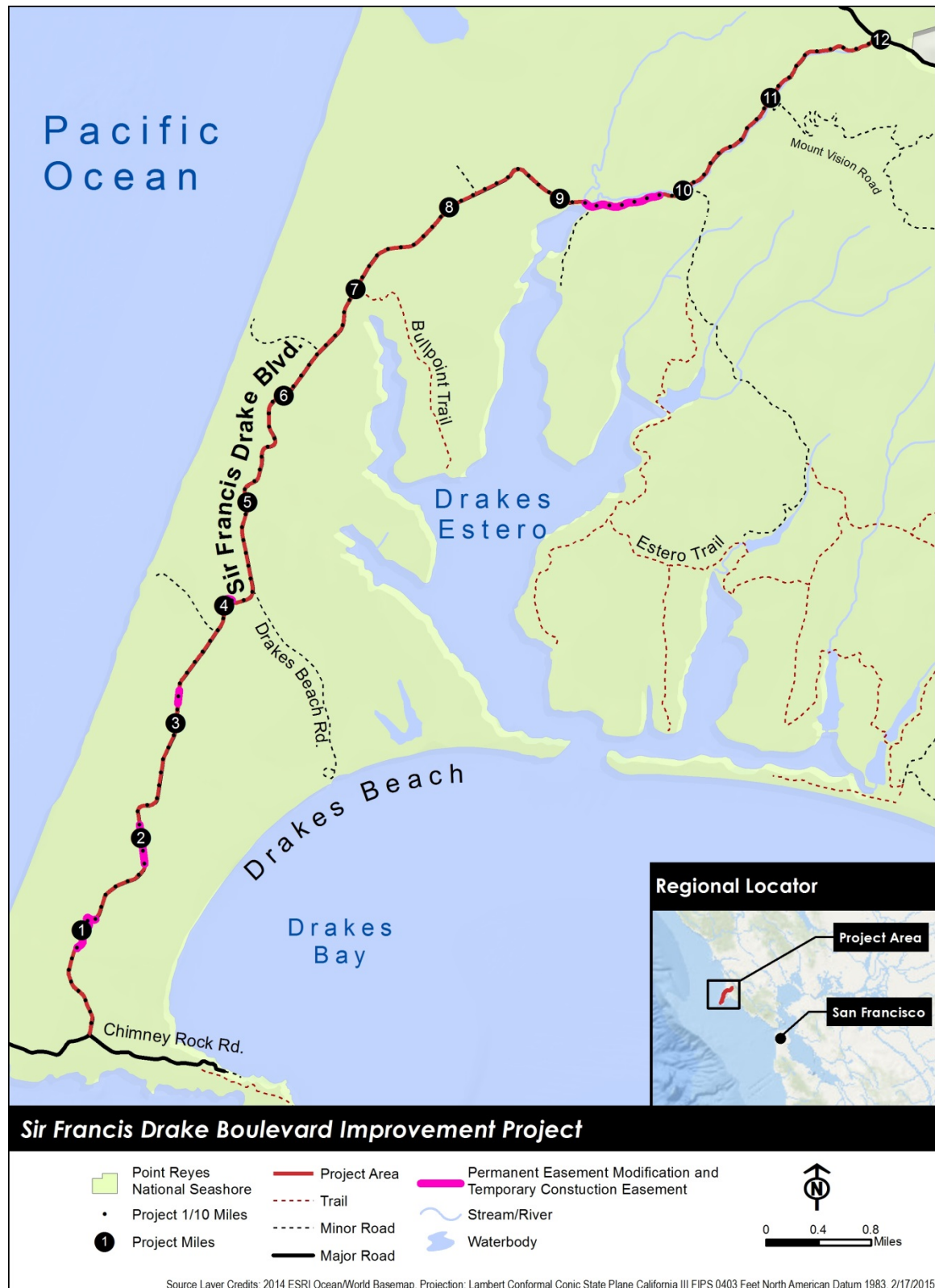
5.3.1.1 Use of Parks and Recreational Resources

PRNS is the only park and recreational resource that may be subject to a use under Section 4(f) within the study area. While SFDB provides direct access to numerous recreational sites within PRNS, as listed above, the Action Alternative would not directly impact or incorporate land from these individual sites. None of the sites are directly adjacent to SFDB, such that there would be noise or visual intrusion, and access to them would be maintained throughout construction. Therefore, no Section 4(f) use would occur to these individual recreational sites and they are not discussed further.

With regard to PRNS as a whole, the Action Alternative would result in minor modifications to the existing county roadway easement and temporary construction easements at specific locations along SFDB. Because easement modifications could not be identified at the conceptual design level, the more detailed preliminary design was used to assess the location of potential encroachment of the Action Alternative onto PRNS.

Modifications to the existing easement, both permanent and temporary, would be required at approximately PM 0.8 to PM 1.2, PM 1.8 to PM 2.1, PM 3.2, PM 4.0 to PM 4.1, and PM 9.2 to 9.8 (see Figure 19). All of these locations are within functioning ranch leases and portions of the roadway that are fenced to restrict public access to ranches. With the exception of PM 9.2 to PM 9.8, these areas are generally within or near actively grazed lands, or are characterized by drier coastal grassland and open scrub vegetation. The area between PM 9.2 and PM 9.8, which is located East of Schooner Creek, is densely vegetated and consists of dense coyotebrush and related scrub vegetation. Although located within PRNS, none of these lands contain designated recreational sites or associated recreational structures, such as scenic overlooks or shuttle bus stops.

Figure 19: Approximate Permanent and Temporary Easements



Permanent modification of the existing easement would total approximately 1.0 acres of land that would be newly incorporated into the county easement. Modifications are required in areas of localized improvements that include small alignment shifts to soften curves and/or improve sight distance, replace the Schooner Creek twin culverts, and shift the roadway away from the East Schooner Creek channel. While this would result in the permanent incorporation of minor portions of PRNS into a transportation facility, the total county easement width would remain 60 feet, and areas no longer within that 60-foot swath would be relinquished – these areas total approximately 1.0 acres. Therefore, there would be no net increase in PRNS property located within the county roadway easement. In addition, small, temporary construction easements totaling approximately 1.0 acre would be required at all of the aforementioned locations to facilitate grading of the roadway and allow for incidental impacts from foot traffic and equipment during construction. These easements would remain for the duration of construction to allow reclamation and revegetation of temporarily disturbed areas.

The permanent easement modifications and temporary easements would be minor and would not adversely affect the activities, features, or attributes of PRNS. PRNS and its associated recreational activities, including its scenic landscape, would continue to function during construction and throughout the life of the roadway. Therefore, FHWA anticipates a finding of *de minimis* impact. The *de minimis* finding is subject to public review and, following this review, FHWA will make a final impact determination. In addition, written concurrence from the NPS regarding the *de minimis* impact finding will be obtained prior to issuance of the decision documents.

5.3.2 Historic Resources

The study area is encompassed by three historic districts eligible for listing on the NRHP: the Point Reyes Dairy District¹⁰, Point Reyes Historic Ranches District, and the Shafter/Howard Tenant Ranches Historic District. The Point Reyes Dairy District boundaries are the same as the PRNS boundaries. This district also contains the Point Reyes Historic Ranches District and the Shafter/Howard Tenant Ranches Historic District, which share the same boundaries and encompass almost the full extent of the peninsula, as shown in Figure 18. Aside from the historic districts, no other individually eligible resources were identified within the study area – only resources that contribute to the eligibility of the historic districts.

Contributors to the eligibility of one or more of the historic districts include SFDB, cattle under-crossings, ranch and other roads that intersect SFDB, fences and corrals, windbreaks, and ranch buildings (Leach-Palm et al. 2015). Table 15 lists the buildings, structures, or objects within the study area that contribute to the eligibility of the historic districts. For more detailed descriptions of the historic districts and their contributors, refer to the Historic Resource section in Chapter 3 or the cultural resources report prepared for this project (Leach-Palm et al. 2015).

¹⁰ Although the Point Reyes Dairy District was not formally nominated or listed in the NRHP, it is considered eligible for purposes of this evaluation.

Table 15: Contributors to NRHP-eligible Historic District(s)

Contributing Building, Structure, or Object(s)	Contributes to NRHP-eligible Historic District (indicated by X)		
	Point Reyes Ranches Historic District	Point Reyes Dairy District	Shafter/Howard Tenant Ranches Historic District
Sir Francis Drake Boulevard (segment within APE)	X		X
North cattle under-crossing at F Ranch			X
South cattle under-crossing at F Ranch			X
Fencing at Historic A, B, C, E, G, and M Ranches	X	X	X
Historic E Ranch corral (along Sir Francis Drake Boulevard)	X	X	X
Historic B Ranch windbreak	X	X	X
Historic A Ranch main house	X		X
Historic B Ranch main house and hay barn	X	X	X
Historic A, B, and C ranch roads, livestock pavement, and paths	X		X
Historic E Ranch, Historic M Ranch, and Rogers Ranch roads	X		X
Muddy Hollow Road/Original Point Reyes Road/Home Ranch Road (segment within APE)	X	X	
Former Coast Guard Life Saving Station Road (segment within APE)	X		
Chimney Rock Road (segment within APE)	X	X	X

Source: Leach-Palm et al. 2015.

5.3.2.1 Use of Historic Resources

None of the impacts or modifications to contributors to the historic districts would result in an adverse effect to any of the districts. While the Action Alternative would result in modifications to SFDB and associated intersections, it would not alter the characteristics of these features or diminish their historic integrity. In addition, through implementation of avoidance and minimization measures, no impacts are expected to fences, corrals, windbreaks, or ranch buildings. For further details, refer to the Historic Resources section in Chapter 3 or the cultural resources report prepared for the project (Leach-Palm et al. 2015).

The Action Alternative would remove the two cattle under-crossings and replace them with concrete box culverts. Avoidance of the under-crossings was determined infeasible, because they pose a safety hazard to vehicle traffic and re-aligning the roadway to avoid them would be detrimental to SFDB and may affect its contribution to the eligibility of the Point Reyes Ranches and Shafter/Howard Tenant Ranches Historic Districts. Although the replacement box culverts would be wider than the existing cattle under-crossings in order to accommodate the wider roadway, they would essentially retain the general scale as the existing under-crossings, and would prevent introduction of new visual elements into the historic landscape. The natural dirt floor would be the same surface to which cattle are currently accustomed, and the under-crossings would continue to function as originally intended. For these reasons, the replacement of the under-crossings would not adversely affect the Shafter/Howard Tenant Ranches Historic District.

The Action Alternative would not introduce new visual elements to the landscape and would maintain the characteristics and features that qualify the historic districts for listing on the NRHP. Therefore, the Action Alternative would have no adverse effect to any of the historic districts, and each would maintain the characteristics and attributes that make them eligible for listing. For these reasons, FHWA is considering a *de minimis* finding. SHPO was notified of the intent to make a *de minimis* finding on July 3, 2015 (see Appendix A). Coordination with SHPO is ongoing and will be completed prior to issuance of decision documents.

5.4 Avoidance, Minimization, and Mitigation Measures

The following measures have been incorporated into project design to reduce potential impacts to Section 4(f) properties:

- At least one lane of traffic shall remain open during construction with a maximum 30-minute delay. If any delay longer than 30 minutes is anticipated to accomplish specific construction activities, then notice shall be provided to the public, relevant local agencies, school districts, and emergency service providers.
- All construction shall occur on weekdays during daylight hours (1/2 hour after sunrise to 1/2 hour before sunset).
- Access to ranches and designated recreational sites shall be maintained throughout construction.
- Alignment of corrals to barns, pastures, and other features of the ranch complexes will be maintained.
- If fences within the existing SFDB easement need to be removed to accommodate construction, they shall be replaced in-kind at the edge of the road right-of-way. If distinctive fencing materials, such as wood rail fencing, are affected during construction, they shall be replaced in-kind and positioned to maintain the alignment of ranch cattle and human circulation patterns.
- The Historic E Ranch corral, Historic A Ranch main house, Historic B Ranch main house, and Historic B Ranch hay barn shall be protected from inadvertent damage by placement of fencing or concrete barriers.
- The contractor shall avoid disturbing trees and their roots within the Historic B Ranch windbreak.
- No construction staging shall occur at Historic E Ranch corral, Historic B Ranch windbreak, Historic A Ranch main house, Historic B Ranch main house, or Historic B Ranch hay barn.
- The area beyond the construction limits shall not be disturbed. Abandoned segments of roadway and temporary impact areas along SFDB within the project limits that would no longer be in use shall be reclaimed and revegetated. Degraded areas impacted from construction-related activity shall be replanted or reseeded with native plants from the watershed or nearby watershed under guidance from PRNS biologists. Shrubs, trees, and herbaceous perennials and annuals shall be seeded and planted along riparian corridors where impacts and vegetation removal occur. Riparian vegetation shall be replanted with shrubs or live-stakes along the banks of East Schooner Creek. CFLHD shall prepare a restoration plan for the project in consultation with PRNS for appropriate seed mixes and plants. Revegetated areas shall be protected and cared for, including watering when needed, until restoration criteria have been met under USACE permits, the USFWS Biological Opinion, and/or NPDES standards. Revegetated areas shall be monitored in accordance with the approved restoration plan to ensure success criteria are met.

5.5 Agency and Public Coordination

A *de minimis* impact determination under Section 4(f) of the Transportation Act of 1966 requires agency coordination with the officials having jurisdiction over the Section 4(f) property and opportunities for public involvement. This project has been developed in coordination with NPS, which has included coordination during scoping efforts and review of project design and environmental compliance. In addition, SHPO has been consulted per Section 106 of the National Historic Preservation Act and also notified of the intent to make a *de minimis* impact finding (see Appendix A). Written concurrence from the NPS regarding the *de minimis* impact finding and written concurrence from SHPO on the finding of no adverse effect to historic properties will be obtained prior to issuance of the decision documents.

Public review and comment of the *de minimis* finding will be solicited through the EA/IS public review. Following the public comment period, CFLHD will review public comments and make a final determination, which will be included in the final decision document.

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CHAPTER 6: COMMENTS AND COORDINATION

Continuous coordination with the public and project stakeholders is essential to the development of a project and the associated environmental document. Early coordination with both project stakeholders and the public can aid in identifying project-related concerns and potential environmental impacts. This chapter summarizes the coordination efforts for the project.

6.1 Project Scoping

CEQ NEPA regulations state that scoping is the “early and open process for determining the scope of issues to be addressed in an EA/IS and for identifying the significant issues related to a proposed action.” The project scoping process involves informing agencies, organizations, and interested citizens of the proposed project. A variety of formal and informal methods were used to conduct the project scoping for this project. These methods include interagency scoping meetings, public meetings, and scoping letters. Comments were received via the project website and mail during the scoping efforts, which were used to identify project issues, assess potential alternatives, and modify or improve the impacts analysis. These comments are essential to the decision-making process under NEPA and CEQA.

6.1.1 Public Scoping Meeting

A public scoping meeting was held on July 22, 2014 at the Red Barn Classroom at Point Reyes National Seashore headquarters located at 1 Bear Valley Road, Point Reyes Station. The meeting was publicized in the media outlets listed below. In addition, 769 newsletters were mailed to residents and businesses in the vicinity of the project, as well as other interested parties, in July of 2014.

- | | |
|----------------------|------------------------------------|
| ■ Bay City News | ■ Marin Independent Journal |
| ■ Contra Costa Times | ■ National Parks Traveler |
| ■ East Bay Express | ■ North Bay Bohemian |
| ■ KCBS Radio | ■ Pacific Sun |
| ■ KGO - 7 | ■ KQED Public Broadcasting Station |
| ■ KPIX - 5 | ■ San Francisco Chronicle |
| ■ KRON 4 | ■ SF Weekly |
| ■ KTVU - 2 | ■ The Press Democrat |
| ■ LA Times | ■ West Marin Citizen |

Project scoping letters describing the project were sent in June of 2014 to invite agencies and organizations to attend the public scoping meeting or provide feedback via another method. Recipients of the project scoping letters include the following:

- | | |
|---|---|
| ■ Association of Bay Area Governments – Public Information Director | ■ California Department of Fish and Wildlife |
| ■ Bay Area Air Quality Management District (BAAQMD) | ■ California Department of Water Resources |
| ■ California Coastal Commission | ■ California Resources Agency |
| ■ California Coastal Conservancy | ■ California Native Plant Society Marin Chapter |
| | ■ County of Marin |

- County of Marin Fire Department
- Environmental Action Committee of West Marin
- Environmental Action Club
- Environmental Forum of Marin
- Friends of Corte Madera Creek
- Friends of Novato Creek
- Inverness Association
- Marin Agricultural Land Trust
- Marin Audubon Society
- Marin Audubon Society
- Marin Conservation League
- Marin Conservation League
- Marin County Bicycle Coalition
- Marin County Bikeways Committee
- Marin County Resource Conservation District
- Marin County Transit District
- Marin Municipal Water District
- Marin Transit
- National Oceanic Atmospheric Administration - National Marine Fisheries Service (NOAA-NMFS)
- NOAA Gulf of the Farallones National Marine Sanctuary
- National Resource Conservation Service
- Native American Heritage Commission
- Nature Conservancy
- North Marin Water District
- Petaluma Riverkeeper
- Planning and Conservation League
- Regional Water Quality Control Board – San Francisco Bay Region
- Salmon Protection and Watershed Network
- Save the Bay
- Sierra Club - Marin Group
- Salmon Protection and Watershed Network (SPAWN) – Marin County
- State Lands Commission
- State Water Resource Control Board
- The Wilderness Society
- Trout Unlimited
- United States Army Corps of Engineers (USACE)
- United States Department of Agriculture
- United States Environmental Protection Agency (EPA)
- United States Fish & Wildlife Service (USFWS)
- United States Geological Survey – Water Resources Division (USGS)
- Watershed Preservation Network
- West Marin Chamber of Commerce

The meeting was held in an open house format, with representatives from CFLHD, NPS, Marin County, and Jacobs Engineering available to answer questions. Five individuals attended the open house event. During the open house, attendees could submit comments about the project by providing a verbal comment or by completing a comment sheet.

Public and agency comments were also collected several other ways for those who could not attend the public meeting. Comments regarding the project could be submitted the following ways:

- Completing the comment card enclosed in the newsletter announcing the public meeting.
- Submitting comments via the project website (<http://parkplanning.nps.gov/projectHome.cfm?projectID=53489>).
- Submitting written comments via mail.

The comments provided by the public during the scoping process are summarized below by general topic. All comments submitted during the project scoping are included in Appendix E.

- Support for ecologically sustainable measures throughout the project.
- Support for post-project monitoring for impacts to natural resources.
- Support for construction of bike lanes and pullouts along SFDB.
- Support for raising the road or installing more culverts to reduce flooding in certain locations and reduce impacts to resources.
- Support for installation of additional speed and cattle crossing signs.
- Support for widening the road at certain locations.
- Support for removing the “S” turns along SFDB.
- Support for the culvert design that facilitates fish passage.
- Support for use of alternatives to asphalt, including solar roadways and impervious surfaces.
- Support for recycling the existing pavement.
- Support for installation of wildlife crossings, passages, cattle guards, and cattle undercrossing.
- Concern for potential effects on the adjacent habitats, sensitive areas, and species.
- Concern regarding widening the entire road.
- Concern regarding the current alignment of the road and the potential effects of climate disruption, such as rising sea levels and more frequent destructive floods, on the long-term condition of the road.
- Concern that project funds should be used for other road and infrastructure projects.
- Concern regarding the project and its effects on the rural quality of the area.

A summary of the comments provided by agencies and organizations during the scoping process are summarized below. All comments submitted during the project scoping are included in Appendix E along with a response on how the project team addressed the comment or recommendation.

The NOAA-NMFS letter formally initiated consultation pursuant to the ESA and the MSA. NOAA-NMFS responded to the project scoping letter on August 18, 2014 and provided comments and recommendations for the EA/IS and Biological Assessment regarding the species list and designated critical habitats applicable to the project area.

The EPA responded to the project scoping letter August 15, 2014, providing comments and recommendations regarding the following:

- Preparation of the environmental document— Explain why the SFDB Improvement Project and the Road Improvement and Maintenance Project are being pursued independently.
- Project coordination with the proposed project along portions of Limantour Road, Lighthouse Road, and Chimney Rock Road — Analyze the SFDB Improvement Project and the Road Improvement and Maintenance Project as one complete project for cumulative impacts. Identify logistical efficiencies and reduction in impacts to the environment by constructing the projects simultaneously. Disclose the cumulative impact of constructing both projects at the same time. Confirm that impacts remain less than significant.

- Design considerations to reduce impacts to water resources and the park's character — Use open-bottom arch culverts instead of box culverts, and bioengineered bank stabilization where feasible instead of traditional rip-rap. Elevate the roadway with spanning or open-bottomed culverts to allow for sufficient tributary flow and seasonal flooding. Confirm that the full project impacts will not result in the need for an Individual Permit. Include additional discussion about context-sensitive design and waivers or modifications to adhering to current design standards to maintain the current character of park roads.
- EPA's comments and recommendations have been taken into consideration in the development of the project's design, environmental analysis, mitigation measures and documentation. See Appendix E for specific responses to each comment.

6.2 Project Correspondence

Correspondence with various federal, state, and local agencies and organizations occurred throughout project development. Correspondence is categorized by subject below and included in Appendix E.

6.2.1 Cultural Resources

Cultural resource specialists from PRNS were consulted in the spring of 2014 regarding known cultural resources in the project area. Native American consultation was conducted by FHWA during the course of project development. A letter requesting concurrence on the area of potential effects, determinations of eligibility, and finding of adverse effect was sent to SHPO on July 3, 2015.

6.2.2 Biological Resources

The scoping letters sent to USFWS and NMFS in June 2014 were intended to gather agency comments, identify an agency representative, and identify federally listed threatened and endangered species as well as critical habitat in the study area. A scoping letter was also sent to CDFW in June 2014.

Correspondence with the USFWS continued throughout the summer and fall of 2014 regarding threatened and endangered species, and critical habitat.

Correspondence with NMFS continued into early 2015 regarding threatened and endangered species, critical habitat, and project design elements. NMFS indicated concerns regarding design of the culvert at Schooner Bay and the potential effects to FESA-listed salmonid populations, designated critical habitats, and EFH.

Correspondence with the CDFW occurred in September 2014 regarding special status species.

Resource specialists from the PRNS were also consulted regarding biological resources including general wildlife and vegetation as well as species of concern and rare plants. Coordination consisted of email and phone correspondence as well as an on-site design review in October 2014.

6.2.3 Wetlands

Correspondence with the USACE was initiated in June of 2014. A preliminary jurisdictional determination was submitted to USACE in April of 2015. Coordination and correspondence with the USACE will continue after completion of this document to acquire the necessary CWA permits.

6.2.4 Farmlands

Coordination occurred in February of 2015 with the NRCS regarding impacts to NRCS designated prime farmland. NRCS determined that there would be minor impacts to NRCS designated farmland under the Action Alternative. The completed CPA-106 for is included in Appendix F. Coordination with PRNS occurred in January of 2015 regarding the current ranch boundaries within the park and along SFDB.

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